



SHRI RAM COLLEGE OF COMMERCE

University of Delhi, Maurice Nagar, Delhi – 110007

Phone: 27667905, 27666519 • Fax: 27666510

Website: www.srcc.edu • email: principaloffice@srcc.du.ac.in

TENDER DOCUMENT

FOR

**TENDER FOR SUPPLYING, LAYING & COMMISSIONING WATER SUPPLY PIPELINE
FROM AREA'S MAIN SUPPLY LINE OF THE DELHI JAL BOARD TO SHRIRAM
COLLEGE OF COMMERCE, DELHI UNIVERSITY, DELHI**

INSTRUCTION TO TENDERERS,
GENERAL CONDITIONS OF CONTRACT,
SPECIAL TERMS & CONDITIONS,
SPECIFICATIONS, SCHEDULE
OF QUANTITIES & DRAWINGS

OWNER

SHRIRAM COLLEGE OF COMMERCE,
UNIVERSITY OF DELHI,
DELHI – 110007

Phones: +91-11-27667905/ 27666519

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July 8, 2019

NOTICE INVITING TENDER

Sealed tender on percentage item rate basis are invited from reputed & registered contractors with Delhi Jal Board (DJB) by Shri Ram College of Commerce, Delhi University, Delhi for executing the following works satisfying the stipulated qualifying criteria as laid down:

Sr. No	Name of work	Estimated Cost (in Rs.)	Earnest Money (in Rs.)	Completion Period (Days)
1	Replacement of damaged/ rusted / Dysfunctional existing 80mm dia G.I. underground Water Supply Pipeline by 100 mm dia DI underground Water Supply Pipeline, approximately 450 Metres length, <u>from DJB Main pipeline at Patel Chest Institute Chowk</u> to the receiving tank at SRCC, University of Delhi, Delhi. (Contractor to deposit dismantled 80 mm GI pipe / fittings with college authorities)	8,29,745/-	41,000/-	60

Qualification Criteria

Should have satisfactorily executed at least 1 jobs of similar nature in the last three years, of value not less than 80% of the Estimated Cost of this tender work.

OR

Should have satisfactorily executed at least 2 jobs of similar nature in the last three years, each of value not less than 60% of the Estimated Cost of this tender work.

OR

The party should have satisfactorily executed at least 3 jobs of similar nature in the last three years, each of value not less than 40% of the Estimated Cost of this tender work.

(Should submit attested copies of Completion & Performance Certificates.)

How to apply

Sealed tenders along with self-attested copies of the following required documents in two bid system i.e. Part 'A':- Technical Pre-qualification Bid

Part 'B':- Commercial Bid

Each part to be submitted in separately sealed covers superscribed with 'Notice Inviting Tenders (Water Supply Pipeline) Part 'A' or Part 'B' respectively, on top of the covering envelope are to be submitted to the Principal, Shri Ram College of Commerce, University of Delhi, Maurice Nagar, Delhi – 110 007 latest by 1600 hrs on July 31, 2019.

- Certificate/ License from the Delhi Jal Board (DJB).
- Certificate with respect to registration of the firm/organization under the relevant law.
- Valid Registration Certificate under the GST.

- Documents in support of executing similar works in Govt. Departments/Ministries, PSUs/academic institutions/ private institutions of repute during the last 5 years.
- Client Satisfaction Certificates from the organizations where similar works have been undertaken during the last 5 years duly signed.
- **Earnest Money Deposit (EMD) @ 5%** of the estimated cost of project as detailed in terms and conditions of the tender notice in a separately sealed envelope.
- Details with respect to PAN of the bidder.
- Statutory Licenses obtained (if any).
- Undertaking (as per prescribed proforma in *Annexure-D*)

All the above papers along with Qualification Criteria enumerated but excluding the EMD should be submitted in a sealed envelope marked ' TECHNICAL PRE-QUALIFICATION BID '. The EMD should be in separately sealed envelope which will be considered along with the Technical Pre-qualification bid. EMD is to be paid in the form of Demand Draft/ Pay Order drawn in favour of the **Principal, Shri Ram College of Commerce** payable at Delhi.

The college reserves the right to reject any or all the applications without assigning any reason whatsoever.

The bidder must be fully conversant with the documents to form part of the contract agreement i.e. Instructions to Bidders, General Conditions of Contract, Special Conditions of Contract, Clauses of Contract, Safety Codes, Model Rules, CPWD contractor Labour Regulations (Standard documents) are available on web site. Section-3 of Building and other construction worker welfare Cess Act 1996 shall be applicable.

Applicable GST etc. should be inclusive in rates quoted.

100% earnest money shall stand forfeited in case:

- a) If contractor withdraws the offer within the validity period of bid.
- b) The contractor who neither executes the C.A. within stipulated period as stated in work order nor takes up the execution of work even after lapse of date of start of work.

Tenders will be received up to 04.00 PM on July 31, 2019. Commercial Bid part-B shall be opened after completion of technical bid evaluation & analysis, only for those tenderers, who fulfil the Pre-qualification eligibility criteria/the required documents if found in order under bid part-A, otherwise the same shall not be opened. If any of the above date happens to be holiday, the next working day will be considered for tendering.

Tender shall be valid for 90 days from the date of opening of Commercial Bid Part-B. The SRCC reserves the right to reject any or all tenders without assigning any reason.

in Delhi

PRINCIPAL

प्राचार्य/Principal

श्री राम कॉलेज ऑफ कमर्स
Shri Ram College of Commerce
दिल्ली विश्वविद्यालय/University of Delhi
दिल्ली/Delhi-110007

INSTRUCTIONS TO TENDERERS

1. Site Visit

The Tenderer shall visit the site and make himself thoroughly familiar with the site conditions, accessibility, all other possible difficulties and other requirements mentioned elsewhere in his Tender prior to submission. When a Tenderer submits his tender for this work, it will be considered that he has quoted for this work with full and complete knowledge of the site and prevailing conditions, and no claim for additional compensation shall be entertained on this account. The Tenderer shall be deemed to be fully conversant with other extensive development and construction work currently being in progress or may start in future on and around the site and all changes in the nature and condition of the site from that existing at the time of Tender. The cost of visiting the site shall be at the bidder's expense.

The contractor shall be deemed to have inspected and examined the site to know the nature of soil & sub-soil water table. The contractor shall provide everything for successful completion of the work like labour, material, equipment and other accessories required, as per drawings, specifications and as directed by Engineer-in-Charge.

The tenders are to be submitted through manual tendering process. The Bidder shall be deemed to have read and examined the Tender Documents before quoting the rates. The drawing(s), Specifications, Clauses and Conditions, etc are to be considered as explanatory of each other and no advantage shall be taken of any omission in Tender Documents. Before submission of tender, the bidders are advised to go through the eligibility criteria, terms & conditions and specifications given in tender documents carefully. The complete tender document is available in the office of PRINCIPAL Shri Ram Collage of Commerce which shall form the part of contract agreement with the successful bidder.

The tenders are to be submitted in two parts i.e. Part A & Part B. The part A of the tender is technical bid and part B as commercial bid. The bidders are required to submit the copies of the certificates and other supporting documents as technical bid. The requirement of documents for submitting is given in the tender document. The price schedule as per format given under BOQ, is required to be filled in as part of a commercial bid.

2. Rates

The "Description of the Item" given in BOQs are mostly based on DSR-2016/PCR of DJB. However, some additional items are also given. In respect of Items & rates of BOQs, which are as per DSR-2016 discrepancy between the tender BOQs and those given in the DSR-2016/ Schedule of Rates circulated by Trenchless Society of India, then the description of item and its corresponding rate given in the DSR-2016/ Schedule of Rates circulated by Trenchless Society of India shall prevail. Extra items of work shall not vitiate the contract. The Tenderer shall be bound to execute extra items of work as directed by the Engineer in charge. The rates for extra items will be as per rates decided under Contract Conditions.

3. Validity of tendered rates

The quoted rates shall hold good for days mentioned on NIT from the date of opening of the tenders. In exceptional circumstances, prior to the expiry of the original time limit the SRCC may request the bidder to extend the period of validity for a specified additional period. However the bidder agreeing to the request will not be permitted to modify the rates/price of his/their bid and the extension of validity of rates shall be on the same terms and conditions as contained in the tender documents.

4. Submission and signing of tender

The tender shall be submitted giving NAME OF WORK – **as mentioned on the NIT** (complete name of works for which the tender is being offered). The tender submitted by the tenderer should be faultless. The rates quoted shall be indicated in figures as well as in words. These should be free from errors and over writing. In case of cutting the same shall be attested / signed by the bidder clearly.

The tenderers are advised to go through the tender documents in full detail and understand all the provisions and stipulations, obtain his own information on all the matters which may in any way affect his tender cost/rate before submitting of tenders as no claim for extra for any alleged ignorance in respect thereof shall be entertained at any stage and the rates quoted shall not be subjected to any revision.

Any discrepancy detected/noticed by the tenderer shall be intimated to the officers issuing tender documents. Any exemption or adjustment by the tenderer without verification shall be at his own risk and cost. The contractor shall be responsible for the successful completion and satisfactory performance of the work.

All tenders, in which any of the prescribed conditions, is not fulfilled or any condition including that of conditional and/or unconditional rebate or any addition/alteration is proposed or modification is made in the time allowed for carrying out the works, is put forth by the tenderer, shall be summarily rejected. The rates of conditional tenders or the tenders having modification in the tender documents shall neither be read out nor shall be entered in the tender opening register.

The tender shall contain no addition or alteration. Any remarks or explanation if made by the tenderer, should be only on a covering letter.

Should the tender be found to contain errors such as adding mistakes and discrepancies between rates and amounts the unit rate/break-up will be considered as correct and total amount will be adjusted accordingly. If there is a discrepancy between amounts in figures and words, the amount in words will be considered as correct.

The terms and conditions of the tender documents shall not be relaxed or changed after the receipt of the tender.

5. Division of work

Engineer-in-Charge reserves the right to divide or reduce the work and the tenderer will be bound to execute the portion of work, allotted to him. The contractor shall carry the work on part site as made available and no claim on this account shall be entertained. The time period for completion will also be amended on prorata basis keeping in view the nature of work allotted, if the scope of work is reduced or divided.

6. Forfeiture of Earnest Money

6.1 If any Bidder withdraws his tender before the expiry of validity period, or before the issue of letter of acceptance, whichever is earlier, or makes any modification in terms and conditions of the tender which are not acceptable to the college then the college shall, without prejudice to any other right or remedy, be at liberty to forfeit 100 % of the Earnest Money absolutely. This provision would naturally apply only to the lowest bidder once the earnest money of all the bidders except the lowest are refunded.

6.2 If the contractor fails to furnish the prescribed Performance guarantee within the prescribed period, the earnest money is absolutely forfeited to SRCC.

6.3 In case the contractor fails to commence the work specified in the tender documents on 10TH day or such period as mentioned in the letter of award, after the date on which the Engineer-in-charge issues written orders to commence the work, or from the date of handing over of the site whichever is later, the college shall, without prejudice to any other right or remedy, be at liberty to forfeit whole of the earnest money absolutely.

6.4 If only a part of the work as shown in the tender is awarded and the contractor does not commence the work, the amount of the earnest money to be forfeited to the college should be worked out with reference to the estimated cost of the work so awarded.

6.5 In case of forfeiture of earnest money as prescribed above, the tenderer shall not be allowed to participate in the re-tendering process of the work.

7. Contract agreement

After the acceptance of the tender, the tenderer will have to sign the necessary contract agreement within 15 days of the above intimation. In case of delay, the college reserves the right to cancel the award of work and forfeit the Earnest Money without any legal notice.

UNDERTAKING

The Principal
Shri Ram College of Commerce,
Maurice Nagar,
Delhi-110 007

Sir,

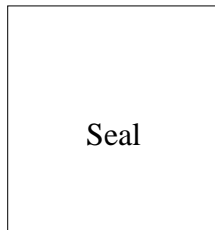
I/We, the undersigned, certify that I/we have gone through the terms and conditions mentioned in the tender document and hereby undertake to agree and comply with them in entirety.

I/ We also undertake that the firm has not been debarred/ blacklisted by any organization for participation in the bidding process.

I/ We understand that in case of breach of any of the terms and conditions committed on our part, the contract for requisite works will be liable to be terminated.

Date: _____

Place: _____



Signature of the Bidder _____

Name _____

Designation _____

Address _____

FORWARDING LETTER

**The Principal
SHRI RAM COLLEGE OF COMMERCE,
University of Delhi, Delhi - 110007.**

Subject: _____

Dear Sir,

With reference to the Tenders invited by you for the above work, I/We do hereby offer to perform, provide, execute & complete the above work in conformity with the drawings, terms & conditions and specifications stipulated and accordingly submit the tender in two parts separately as under-

Part A - Technical Pre-qualification Bid.

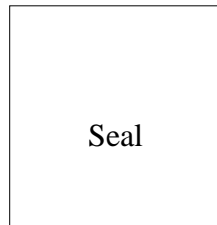
Part B - Commercial Bid showing amounts in Schedule of Quantities attached.

I/We have satisfied ourselves to the location and conditions of the site and have read the conditions of contract & specifications etc. and we understand that the work is to be completed within the specified period & fully understand that the time will be the essence of this contract.

I/We enclose herewith Earnest Money vide DD/PO No.....
dated.....for Rs...../-
(Rupees.....only) on the
.....ofin the name of
.....(This amount shall not bear any interest and should
this tender be accepted). I/We hereby agree that this amount will be forfeited if I/We, fail to start
the execution within stipulated time.)

Date: _____

Place: _____



Signature of the Bidder _____

Name _____

Designation _____

Address _____

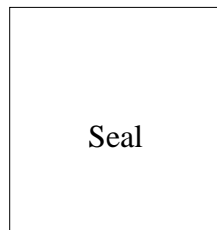
TECHNICAL PRE-QUALIFICATION BID

1.	Name of the firm/ company	
2.	Address for communication	
3.	Company profile, Brochure showing last three (3) years turnover	
4.	Name of authorized representative with designation/ official capacity	
5.	Last three (3) years IT Clearance Certificate	
6.	Firm/ Company's Registration Number in Delhi Jal Board	
7.	Specimen signature of the authorized representative/ signatory	
8.	PAN AND GST NUMBER	
7.	Contact Phone / Cell number	
8.	Email	
9.	Completion Certificates issued by Clients of completed projects executed during the last five (5) years.	
10.	Performance Certificate issued by Clients of running projects	
12.	Disputes pending with any client for works under execution/completed during	

	last five (5) years. If none, an affidavit to that effect.	
13.	Earnest Money Deposit (EMD) in a separately sealed envelope	
14.	Details of all documents enclosed	

Date: _____

Place: _____



Signature of the Bidder _____

Name _____

Designation _____

Address _____

General Conditions of Contract

1.0 Definitions & Interpretations

1.1 Definitions

“Commencement Date” means the date of commencement of the Works and shall generally be from the 10th day of issue of Work Order or unless otherwise specified in the Contract

“Completion Certificate” means the certificate issued by the Engineer-in-Charge to the Contractor, on request after successful completion of Works.

“Completion Date” means the actual date of completion or commissioning of the Works, whichever is later, as recorded by the Engineer-in-Charge.

“Contract” means the present Contract Agreement, Letter of Intent, Work Order, Tender, Special Conditions of Contract, these Conditions, the Technical Specifications, the Drawings, the Schedules and such other documents as may be expressly incorporated in the present Contract Agreement.

“Contractor” means a person or a corporate body and the legal successor in title to such person whose bid to carry out the Works has been accepted by the Employer and the Contract is signed.

“Contractor’s Bid” means the completed bidding document submitted by the Contractor to the Employer.

“Contract Price” means the agreed price for executing the Works as defined in Letter of Acceptance/ Work Order, and includes any adjustments in accordance with the Contract, thereafter.

“Cost” means all expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

“Defects” means any part of the Works not completed in accordance with the Contract, or completed with deficiencies and flaws and includes deficiencies, flaws, etc. developed during the execution of Works and during the Defect Liability Period.

“Defects Liability Period” means the period from the Completion Date as certified by the Engineer- in-Charge and specified in relevant clause.

“Drawings” mean maps, drawings, plans, tracings or prints thereof, calculations and technical information of a like nature provided by the Employer to the Contractor or annexed to the Contract, and any modifications of such drawings and further drawings that may be issued by the Engineer-in- Charge from time to time or approved by the Engineer-in-Charge in writing and includes such other drawings as are made from time to time and furnished by the Contractor and approved by the Engineer-in-Charge.

“Employer” means the management/ governing body of the SHRI RAM COLLAGE OF COMMERCE (SRCC), Delhi University, Delhi.

“Engineer-in-Charge” means the person appointed by the Employer, with due notification to the Contractor, who is responsible for signing the Contract, supervising the Contractor, administering the Contract, release of payments due to the Contractor as per Contract

provisions, and taking any other decisions as per provisions of Contract. Any other approval including, but not limited to, extension of time, imposition of damages/ penalty, approval of additional scope, approval of any other deviations will be done as per extant delegation of power of Employer.

“Good Engineering Practice” means, Works carried out in accordance with the following standards/specifications, As specified in BIS, ISO or relevant standards of particular product Work done as per norms of relevant work described in CPHHEO, PHED, CPWD, Electricity Board, amongst others. Manufacturers’ instructional manual for construction, erection, O & M of respective products Specification prepared drafted & approved by Engineer-in-Charge for undertaking the work, if not specified in above

“Good Industry Practice” means the practices, methods, techniques, designs, standards, skills, diligence, efficiency, reliability and prudence which are generally and reasonably expected from a reasonably skilled and experienced Contractor engaged in the same type of undertaking as envisaged under this Contract and which would be expected to result in the performance of its obligations by the Contractor in accordance with this Contract, Applicable Laws and Applicable Permits in reliable, safe, economical and efficient manner.

“Letter of Acceptance” means the letter from the Employer or the Engineer-in-Charge, or a person nominated by them on their behalf for this purpose, to the Contractor, conveying acceptance of the Tender, subject to any modifications agreed to between the parties and includes advance acceptance of the tender.

“Materials” means all equipment, components, fittings, and other materials including consumables, raw materials etc. required to execute and complete the Works.

“Parties” means Employer or the Contractor or both, as the context requires.

“Physical Completion of Works” means completion of construction of all physical structures such that it is ready to use for all intended purposes.

“Schedule” means the document(s) entitled schedule, completed by the Contractor and submitted with the Letter of Tender, as included in the Contract. Such document may include the Bill of Quantities, data, lists, and schedules of rates and/or prices.

“Site” means the places provided by the Employer where the Works are to be executed and any other places as may be specifically designated in the Contract as forming part of the Site.

“Specification” means the specifications of the Works included in the Contract and any modification or addition of such Works and approved by the Engineer-in-Charge.

“Special Conditions of Contract” means terms and conditions that sets out the rights and obligations of the parties that are peculiar to a specific contract, or as necessitated by the circumstances of specific works, and that forms a part of the Contract as laid out in relevant clause.

“Stipulated Date of Completion” means date of completion of the Contract as specified in the Work Order.

“Stipulated Period of Completion” means the time period for completion of Contract as specified in the Work Order. This period shall start from the Commencement Date and shall end at the Stipulated Date of Completion.

“Sub Contractor” means a person or corporate body who has a Contract with the Contractor to

carry out a part of the Works in the Contract.

"Taxes" means any Indian taxes and duties including excise duties, customs duties, GST and any impost or surcharge of like nature (whether Central, State or local) on the goods, material, equipment and services incorporated in and forming part of the Works charged, levied or imposed by any Government Instrumentality, but excluding any interest, penalties and other sums in relation thereto imposed on any account whatsoever. For the avoidance of doubt, Taxes shall not include taxes on corporate income;

"Variation" means any change to the Works which is instructed or approved as variation by Engineer-in-Charge, which causes a variation in the scope of work from what is contained in the Contract.

"Works" means permanent and/or temporary work to be executed by the Contractor in accordance with the Contract.

"Work Order" means the document of the Employer communicating its decision to award the Works to the Contractor at the agreed Contract Price and specifying the Commencement Date and Stipulated period of Completion.

"Writing" means any hand-written, type-written or printed communication, email when followed by written confirmation, including facsimile transmission resulting in a permanent record in Contract.

1.2 Interpretation of documents

In this Contract, unless the context otherwise requires:

(i) references to any legislation or any provision thereof shall include amendment or re-enactment or consolidation of such legislation or any provision thereof so far as such amendment or re-enactment or consolidation applies or is capable of applying to any transaction entered into hereunder;

(ii) references to laws of India or Indian law or regulation having the force of law shall include the laws, acts, ordinances, rules, regulations, bye laws or notifications which have the force of law in the territory of India and as from time to time may be amended, modified, supplemented, extended or reenacted;

(iii) references to a "person" and words denoting a natural person shall be construed as a reference to any individual, firm, company, corporation, society, trust, government, state or agency of a state or any association or partnership (whether or not having separate legal personality) of two or more of the above and shall include successors and assigns;

(iv) the table of contents, headings or sub-headings in this Contract are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Contract;

(v) the words "include" and "including" are to be construed without limitation and shall be deemed to be followed by "without limitation" or "but not limited to" whether or not they are followed by such phrases;

(vi) references to “construction” or “building” include, unless the context otherwise requires, survey and investigation, design, developing, engineering, procurement, supply of Plant, Materials, Equipment, labour, delivery, transportation, installation, processing, fabrication, testing, commissioning and maintenance of the project (water/ waste water, networks, treatment and storage as applicable) including removing of Defects, if any, and other activities incidental to the construction and “construct” or “build” shall be construed accordingly;

(vii) references to “development” include, unless the context otherwise requires, construction, renovation, refurbishing, augmentation, up-gradation and other activities incidental thereto, and “develop” shall be construed accordingly;

(viii) any reference to any period of time shall mean a reference to that according to Indian Standard Time;

(ix) any reference to day shall mean a reference to a calendar day as per the Gregorian calendar;

(x) references to a “business day” shall be construed as a reference to a day (other than Sundays and other holidays for Employer) on which banks in [Delhi] are generally open for business;

(xi) any reference to month shall mean a reference to a calendar month as per the Gregorian calendar;

(xii) references to any date, period or project milestone shall mean and include such date, period or project milestone as may be extended pursuant to this Contract;

(xiii) any reference to any period commencing “from” a specified day or date and “till” or “until” a specified day or date shall include both such days or dates; provided that if the last day of any period computed under this Contract is not a business day, then the period shall run until the end of the next business day;

(xiv) the words importing singular shall include plural and vice versa;

(xv) references to any gender shall include the other and the neutral gender;

(xvi) “lakh” means a hundred thousand (100,000) and “crore” means ten million (10,000,000);

(xvii) “indebtedness” shall be construed so as to include any obligation (whether incurred as principal or surety) for the payment or repayment of money, whether present or future, actual or contingent;

(xviii) references to the “winding-up”, “dissolution”, “insolvency”, or “re organisation” of a company or corporation shall be construed so as to include any equivalent or analogous proceedings under the jurisdiction of law in which such company or corporation is incorporated or any jurisdiction in which such company or corporation carries on business including the seeking of liquidation, winding-up, re organisation, dissolution, arrangement, protection or relief of debtors;

(xix) save and except as otherwise provided in this Contract, any reference, at any time, to any agreement, deed, instrument, license or document of any description shall be construed as reference to that agreement, deed, instrument, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference; provided that this sub clause shall not operate so as to increase liabilities or obligations of the Employer hereunder or pursuant hereto in any manner whatsoever;

(xx) any agreement, consent, approval, authorisation, notice, communication, information or report required under or pursuant to this Contract from or by any Parties or the Engineer-in-Charge shall be valid and effective only if it is in writing under the hand of a duly authorised representative of such Parties or the Engineer-in-Charge, as the case may be, in this behalf and not otherwise;

(xxi) the Schedules and Recitals to this Contract form an integral part of this Contract and will be in full force and effect as though they were expressly set out in the body of this Contract;

(xxii) references to Recitals, Articles, clauses, Sub-clauses or Schedules in this Contract shall, except where the context otherwise requires, mean references to Recitals, Articles, clauses, Sub-clauses and Schedules of or to this Contract, and references to a Paragraph shall, subject to any contrary indication, be construed as a reference to a Paragraph of this Contract or of the Schedule in which such reference appears; and

(xxiii) the damages payable by either Parties to the other of them, as set forth in this Contract, whether on per diem basis or otherwise, are mutually agreed genuine pre-estimated loss and damage likely to be suffered and incurred by the Parties entitled to receive the same and are not by way of penalty (the "Damages")

(xxiv) Time shall be of the essence in the performance of the Parties' respective obligations. If any time period specified herein is extended, such extended time shall also be of the essence.

1.3 Ambiguities and Discrepancies

In case of ambiguities or discrepancies within this Contract, the following shall apply:

- (i) between two or more clauses of this Contract, the provisions of a specific clause relevant to the issue under consideration shall prevail over those in other clauses;
- (ii) between the clauses of this Contract and the Schedules, the clauses shall prevail and between Schedules and Annexes, the Schedules shall prevail;
- (iii) between any two Schedules, the Schedule relevant to the issue shall prevail;
- (iv) between the written description on the Drawings and the technical specifications, the latter shall prevail;
- (v) between the standard in CPWD manual and the relevant standard, the latter shall prevail;
- (vi) between the dimension scaled from the Drawing and its specific written dimension, the latter shall prevail;
- (vii) between any value written in numerals and that in words, the latter shall prevail; and
- (viii) for any discrepancy in the Contract relating to BOQ (Bill of Quantities), the nomenclature as given in CPWD manual/ DSR/ EMPLOYER analyzed rates, as the case may be, shall prevail, unless specified in the Contract.

1.4 Order of precedence

The Contract Agreement shall comprise the following documents in the given order of precedence:-

- (i) Agreement on non judicial stamp paper
- (ii) Work order
- (iii) Letter of Acceptance
- (iv) Correspondence between parties
- (v) Corrigendum/ Addendum issued, including bidders' queries
- (vi) Special Conditions of Contract
- (vii) General Conditions of Contract
- (viii) Technical Specifications
- (ix) Accepted bid
- (x) NIT or any other document

1.5 Correlation of document

The Contract documents are complementary and what is called for by any one of them shall be

as binding as if called for by all of them.

1.6 Signing of Contract

The Contract should be signed by either parties within 15 (fifteen) days of issue of Work Order or any such time period as decided by the Employer, failing which the Employer shall have the right to forfeit the Earnest Money deposited during the bidding stage. The Employer shall also have the right to forfeit the Performance Guarantee, submitted as per relevant clause, in case Contractor fails to sign the Contract in the stipulated time. However, Employer shall give a 10 days' notice before forfeiting the Performance Guarantee. Further, the Contractor shall not be allowed to participate in retendering, if any, for the Works.

1.7 Communication

All notices, communications, references and representation by either Parties to the Contract shall be in writing only.

1.8 Language

The Contract document shall be drawn up in English.

1.9 Law governing the Contract

The Contract shall be governed by the laws of India, including but not limited to laws of GNCTD and DWB act, in force and as amended from time to time and the Courts in Delhi shall have exclusive jurisdiction in all matters under the Contract.

1.10 Compliance with bylaws and regulations

The Contractor shall comply with the provisions of any statute relating to the Works, regulations and by-laws of any local authority and undertaking, including those controlling the utilities such as, but not limited to, roads, railways, telephones and power supply, in whose area / jurisdiction the Works is to be executed. The Contractor shall also comply with court directives, if any after signing of Contract.

2.0 Engineer-in-Charge & its representatives

2.1 Duties and authority of Engineer-in-Charge and its representatives

2.1.1 The Engineer-in-Charge shall carry out the duties specified or implied in the Contract including issue of instructions, decisions, certificates and orders, for administration of the Contract and expeditious and timely completion of the Work. Should the Engineer-in-Charge exercise any specific authority for which, as per the terms of his appointment, he has to obtain the approval of the Employer, the Contractor shall deem such approval to have been given by the Employer. Further, the Engineer-in-Charge may be assigned any other duty by the Employer in interest of Work.

Duties and Authority of Engineer-in-Charge's representative

(i) The Engineer-in-Charge's representative shall be appointed by and be responsible to the Engineer-in-Charge and shall carry out such duties and exercise such authority as may be delegated to him by the Engineer-in-Charge including the duty to supervise the Works and to test and examine any materials to be used or workmanship employed in connection with the Works. Provided that the Engineer-in Charge's representative shall have no authority to relieve the Contractor of any of his duties or obligations under the Contract, or to order any work involving delay or any extra payment by the Employer, or to make any variation of or in the Works, except as expressly provided in the Contract.

(ii) The Engineer-in-Charge may, from time to time, in writing delegate to the Engineer-in-Charge's representative, any of the powers and authorities vested in the Engineer-in-Charge, and he may any time revoke such delegation. Any such delegation or revocation shall be in writing and the Engineer-in charge shall furnish to the Contractor and to the Employer, a copy of all such written delegation or revocation of powers and authorities. Any written instruction, decision or approval given by the Engineer-in-Charge's representative to the Contractor within the terms of such delegation, but not otherwise, shall bind the Contractor and the Employer, as though it had been given by the Engineer-in-Charge. Provided always as follows:

- (i) Failure of the Engineer-in-Charge's representative or his assistants, to disapprove any Works or materials shall not prejudice the authority of the Engineer-in-Charge or Employer thereafter, to disapprove such Works or materials or plant and order the pulling down, removal or breaking up or replacement thereof. The Engineer-in-Charge's representative shall have similar authority to disapprove any Works or material or plant passed by his Assistants, appointed in terms of provision of sub-clause 2.1.2 herein.
- (ii) If the Contractor shall be dissatisfied by reason of any instruction or decision of the Engineer-in-Charge's representative, or questions any communication of the Engineer-in-Charge's representative, he may refer the matter to the Engineer-in-Charge, who shall thereupon confirm, reverse or vary such decision or vary the contents of such communication. The Engineer-in-Charge's representative shall have similar authority to confirm, vary, or, reverse any instructions and decisions issued by his Assistants, appointed in terms of sub-clause 2.1.2 herein.

2.1.2 The Engineer-in- Charge or his representative may appoint any number of persons to assist them in carrying out their duties under Sub-clause 2.1.1. The Engineer-in- Charge or his representative shall notify to the Contractor the names, duties and scope of authority of such persons. Such persons/assistants shall have the authority to issue instructions / give decisions to the extent of duties assigned and powers delegated to them.

2.2 Works to be executed under direction of Engineer-in-Charge

All Works to be executed under the Contract shall be executed under the direction and subject to the approval of the Engineer-in-Charge. The Engineer-in-Charge shall be entitled to direct at what point or points and in what manner the Works are to be commenced and scheduled.

2.3 Instructions in writing

2.3.1 The instructions issued by Engineer-in-Charge shall be in writing or through email. However, if the Engineer-in-Charge issues any oral instructions to the Contractor, the Contractor shall comply with them.

Provided that the Engineer-in charge shall confirm in writing the oral instructions within 2 [two] working days of issuing them.

2.3.2 In case the Contractor does not receive the written confirmation of the oral instruction within the time prescribed in Sub-clause 2.3.1, the Contractor shall seek the written confirmation of the oral instructions from the Engineer-in-Charge who issued the oral instructions. In case of failure of the Engineer-in-Charge to reply to the Contractor within 2 (two) working days of the receipt of the communication from the Contractor, the Contractor shall not carry out the instruction.

2.4 Time Compensation for delay in handing over the site

2.4.1 The Employer shall ordinarily grant the Contractor the Right of Way within its premises which may, however, not be exclusive to the Contractor:

- (i) on the date(s) stated in Special Conditions of Contract; and

- (ii) In the event Special Conditions of Contract does not specify any time schedule for providing the Right of Way for any part of the Site , the Employer shall provide to the Contractor the Right of Way to such part(s) within 30 (thirty) days of the Start Date.

2.4.2 Where Right of Way of a part of the Site is not given within fourteen days of the date specified in sub-clause 2.4.1 for any reason other than Force Majeure or breach of this Contract by the Contractor, the Contractor shall be entitled to extension of time. The extension of time shall be equal to the period of delay in handing over the possession of the Site provided that if delays involve time overlaps, the overlaps shall not be additive.

2.4.3 The Special Conditions of Contract shall state the present status of all clearances, including land availability, obtained or awaited, as the case may be, indicating the expected dates of obtaining clearances.

2.4.4 The Contractor shall allow access to and use of the Site and/or the Works for laying/installing telegraph lines, electric lines or for such other public purposes as the Employer may require.

2.4.5 For right of way/ access to public land like road & pavements, contractor is solely responsible for managing site clearance from statutory bodies.

3.0 Contractor & Contractor's obligations

3.1 Contractor and its representatives

3.1.1 A Contractor may be an individual, firm, company, corporation, Joint Venture, or consortium whether incorporated or not, who enters into the Contract with the Employer, and shall include his heirs, his executors, administrators, successors, legal representatives, as the case may be.

3.1.2 Contractor's representative shall mean a person in supervisory capacity who shall be so declared by the Contractor and who shall be authorized under a duly executed power of attorney to comply with the instructions and to receive materials issued by the Engineer-in-Charge to the Contractor for Works. He shall be capable of taking responsibility for proper execution of Contract.

3.2 Subcontracting

3.2.1 A minimum of following activities shall be performed by the Contractor and shall not be sub contracted:

- (i) Project Management
- (ii) Planning, Scheduling, Monitoring
- (iii) Quality Assurance

3.2.2 Prior approval of Employer shall be required before subcontracting any portion of Contract. The approval shall be based on competency of subcontractor to do similar kind of activity which is to be subcontracted.

3.2.3 Where the Contractor fails to comply with instructions under sub-clauses 3.2.1, the Engineer- in-Charge shall have the power to adopt the course specified in clause 11.1 and in the event of such course being adopted, the consequences specified in the said clause 11.1 shall ensue.

3.2.4 The Contractor shall, at all times, be responsible and liable for all its obligations under this Contract notwithstanding anything contained in the agreements with its Sub-contractors or any other agreement that may be entered into by the Contractor, and no default under any such agreement shall excuse the Contractor from its obligations or liability hereunder.

3.3 Removal of worker or subcontractor by Employer

The appointment of key personnel and subcontractor for the Contract shall be authenticated by the Employer.

The Engineer-in-Charge may require the Contractor to dismiss or remove from the Site any person or persons or sub-contractor who is found to be incompetent or indulging in misconduct and the Contractor shall forthwith comply with such requirements within 21 days of such notice from the Engineer-in-Charge. Such person(s) shall not be employed again at Site without the written permission of the Engineer-in-Charge and the person(s) so removed shall be replaced as soon as possible by competent substitutes. The decision of Engineer-in-Charge shall be final and binding.

3.4 Contractor to keep Site clean

During the progress of Works, the Contractor shall keep the Site reasonably free from obstructions and shall store neatly any construction equipment and surplus materials and clear away and remove from Site any rubbish or temporary work no longer required. On completion of the Works, the Contractor shall clear away and remove from Site all construction equipment, surplus material and temporary work. He should leave the whole of the Site and Works in a clean and tidy condition to the satisfaction of the Engineer-in-Charge.

Provided that where the Contractor fails to comply with the requirements of this clause, the Engineer-in-Charge shall have the right to get this Works done at the cost of the Contractor either departmentally or through any other agency. Before taking such action, the Engineer-in-Charge shall give ten days notice in writing to the Contractor.

It shall be the sole responsibility of Contractor to follow the provisions of Environment (Protection) Act, 1986 during the execution of Works and existence of this Contract.

3.5 Unauthorized occupancy at the construction site

It shall be the responsibility of the Contractor to see that the Site is not occupied by any unauthorized person during construction, and that Site is handed over to the Engineer-in-Charge with vacant possession of complete building or site, as applicable and free from all encumbrances. Provided that where such construction site is occupied illegally, and notwithstanding that the Works on the Site is executed by the Contractor, the Engineer-in-Charge shall have the option to refuse to accept the said site in that condition. Any delay in acceptance on this account will be treated as per provisions of clause 10.3, and the Contractor shall be liable to pay compensation for delays. Provided further that for such delay a levy up to maximum of 5% of Contract Price may be imposed by the Engineer-in-Charge whose decision shall be final both with regard to the justification and quantum of levy and shall be binding on the Contractor. Provided further that the Engineer-in-Charge may require through a written notice removal of any illegal occupation of Site that comes into his/her knowledge at any time during the execution of the Contract.

3.6 Changes in firms constitution to be intimated

Where the Contractor is a partnership firm, the previous approval in writing of the Engineer-in-Charge shall be obtained before any change is made in the constitution of the firm. Where the Contractor is an individual or a Hindu Undivided Family business concern such approval shall likewise be obtained before the Contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the Works hereby undertaken by the

Contractor. If the said previous approval is not obtained, the Contract shall be deemed to have been assigned in contravention of clause 3.2 hereof and hence shall be liable for cancellation in which case the Employer shall have the authority to forfeit the Performance Guarantee submitted for the Contract.

3.7 Indemnity by Contractor

3.7.1 Indemnity against All Actions of Contractor

The Contractor shall hold and save harmless and indemnify the Employer, from and against all actions, suits, proceedings, loss, costs, damages, charges, claims and demands of every nature and description brought or recovered against the Employer, by reason of any act or omissions of the Contractor, his representative or his employees, in the execution of the Works or in the guarding of the same. All sums payable by way of compensation under any of these conditions, shall be considered as reasonable compensation payable to the Employer by Contractor, without reference to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

3.7.2 Indemnity against All Claims of Patent Rights and Royalties

The Contractor shall hold and save harmless and indemnify the Employer, its agents and employees from and against all claims and proceedings, for or on account of infringement by the Contractor of copyright, any patent rights, design trademark or name, secret process, patented or unpatented invention, articles or appliances manufactured or used for or in connection with the Works and from and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. Except where otherwise stated, the Contractor shall pay all royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works.

3.8 Employment of technical staff and employees

The Contractor shall employ a qualified and experienced engineer/staff(s) for supervision of the Works.

The Contractor shall provide all necessary superintendence during execution of the Works and for as long thereafter as may be necessary for proper fulfilling of the obligations under the Contract.

The Contractor shall immediately after receiving Letter of Acceptance of the tender and before commencement of the work, intimate in writing to the Engineer-in-Charge the name, qualifications, experience, age, address and other particulars along with certificates, of the principal technical representative to be in charge of the work. Such qualifications and experience shall not be lower than specified in Special Conditions of Contract. The Engineer-in-Charge shall within 15 days of receipt of such communication intimate in writing his approval or otherwise of such a representative to the Contractor. Any such approval may at any time be withdrawn and in case of such withdrawal the Contractor shall appoint another such representative according to the provisions of this clause. Decision of the Employer shall be final and binding on the Contractor in this respect. Such a principal technical representative shall be appointed by the Contractor soon after receipt of the approval from Engineer-in-Charge and shall be available at Site within fifteen days of start of work.

Where the Contractor (or any partner in case of firm/company) himself has such qualifications, it will not be necessary for the said Contractor to appoint such a principal technical representative but the Contractor shall designate and appoint a responsible agent to represent him and to be present at the Works whenever the Contractor is not in a position to be so present. All the provisions applicable to the principal technical representative under the clause will also

be applicable in such a case to Contractor or his responsible agent. The principal technical representative and/or the Contractor shall on receiving reasonable notice from the Engineer-in-Charge or his designated representative(s) in charge of the Works in writing or in person or otherwise, present himself to the Engineer-in-Charge and/or at the Site, as required, to take instructions. Instructions given to the principal technical representative or the responsible agent shall be deemed to have the same force as if these have been given to the Contractor. The principal technical representative and/or the Contractor or his responsible authorized agent shall be available at Site at least two working days every week. These days shall be determined in consultation with the Engineer-in-Charge.

The principal technical representative and/or the Contractor or his responsible authorized agent shall be present daily during important stages of execution of work, during recording of measurement of work and whenever so required by the Engineer-in-Charge by a notice as foresaid and shall also note down instructions conveyed by the Engineer-in-Charge or his designated representative in the site order book and shall affix his signature in token of noting down the instructions and in token of acceptance of measurements.

There shall be no objection if the representative/agent looks after more than one Works and not more than three works provided these details are disclosed to the Engineer-in-Charge and he shall be satisfied that the provisions and the purpose of this clause are fulfilled satisfactorily. Where the Engineer-in-Charge, whose decision in this respect is final and binding on the Contractor, is convinced that no such technical representative or agent is effectively appointed or is effectively attending or fulfilling the provision of this clause, a recovery shall be effected from the Contractor as specified in Special Conditions of Contract and the decision of the Engineer-in-Charge as recorded in the site order book and measurement recorded in measurement books shall be final and binding on the Contractor. Provided that if the Contractor fails to appoint a suitable technical representative or responsible agent and if such appointed persons are not effectively present or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the Works until such date as a suitable agent is appointed and the Contractor shall be held responsible for the delay so caused to the work. The Contractor shall submit a certificate of employment of the technical representative/responsible agent along with every account bill/fixed bill and shall produce evidence if at any time so required by the Engineer-in-Charge.

The Contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper supervision to the work.

The Contractor shall provide and employ skilled, semiskilled and unskilled labour as is necessary for proper and timely execution of the work.

3.9 Work Program Schedule

The Contractor shall submit a detailed program for completion of Works within the stipulated period.

Modifications suggested by the Engineer-in-Charge shall be incorporated in the work program schedule.

The Contractor shall ensure that the time schedule as laid down in the aforesaid work program schedule is adhered to.

3.10 Sign Board/Caution/Diversion Board

The Contractor shall provide sign/ caution/ diversion board indicating complete name of work,

date of start, date of completion, Contract Price, name of Employer, name of the executive agency with address and telephone number, at his own cost at the Site.

3.11 Benchmark

The Contractor shall establish at his own cost, at suitable points, additional reference points/lines, benchmarks as may be necessary. The Contractor shall remain responsible for the sufficiency and accuracy of all benchmarks and reference lines. The temporary benchmarks shall be connected with permanent standard benchmarks.

3.12 Responsibility of damage to person or property

3.12.1 The Contractor shall be responsible for all risks to the Works and for trespass and shall make good, at his own expense, all loss or damage to the Works themselves or to any other property of the Employer or the lives, persons and property of others from whatsoever cause in connection with Works until they are taken over by the Employer. In the event the Employer is called upon to make good any such costs, loss or damages, or to pay compensation, including that payable under the provisions of Workmen's Compensation Act or any statutory amendments thereof, to any person or persons sustaining damage as aforesaid by reason of any act, omission or negligence on the part of the Contractor the amount of any costs or charges, including costs and charges in connection with legal proceedings, which the Employer may incur in reference thereto, shall be charged to the Contractor. The Employer shall have the authority to pay or to defend or compromise any claim or threatened legal proceeding or in anticipation of legal proceedings being instituted consequent on the action or default of the Contractor, to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, as aforesaid. Any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the Contractor.

3.12.2 The Contractor shall not disturb, damage or pull down any hedge, tree, building etc within the Site without the written permission of the Engineer-in-Charge.

3.12.3 In the event of any damage occurring to any work, life and property during the execution of Works included in the Contract clause due to settlement of ground slips, flooding from any sources breakage of water main/ sewer line or any other cause, the Contractor shall be solely responsible and must reconstruct, repair and make good all such at his own cost.

3.12.4 When the work is done near a place where there is risk of danger or accident, all necessary equipments shall be provided and kept ready for use, all necessary steps shall be taken for prompt rescue of any person in danger and adequate provision shall be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

3.12.5 If any accident occurs, the Contractor shall report to the Employer and Labor Commissioner under Workman's Compensation Act, within 24 hours of its occurrence.

3.12.6 Any compensation decided by the Labor Commissioner shall be borne by the Contractor.

3.13 Inconvenience caused to public

The Contractor shall not dump/deposit materials on Site which will seriously cause inconvenience to the public. The Engineer-in-Charge may require the Contractor to remove any materials which are considered by him to be of danger or inconvenience to public or cause them to be removed at the Contractor's cost.

3.14 Electricity for construction of Works

3.14.1 The Contractor shall arrange on his own, the electricity/power connection of required capacity for carrying out the Works only till Completion Date. The Employer shall issue the recommendation letter to concerned electrical authorities for getting the electrical power connection. In the event the authorities refuse to provide or sanction electric/ power in favour of Contractor, the connection shall be applied for by the Engineer-in- Charge. All the steps in this regard including the required payments, if any, shall be made by the Contractor. The Contractor shall pay all the charges towards security installation, consumption of electricity/power till Completion Date.

3.14.2 The payment of final bill to the Contractor shall be made by Employer on submission of no dues/clearance certificate from the electric supply authority/the authority in charge of the electric power.

3.14.3 The temporary electric fitting shall be provided and maintained as per the power sanctioning/maintaining authority rules and regulations by the Contractor at his own cost and nothing extra shall be paid by the EMPLOYER.

3.14.4 If for any reason of the feasibility or whatsoever the authorities are not in a position to sanction the electric connection, the Contractor shall make his own arrangements i.e. required numbers of generators etc. to execute the Works or in case the sanction of electric connection is delayed by the authority it shall also be the responsibility of the Contractor to arrange electricity and no claim whatsoever shall be entertained on this account.

3.14.5 The Contractor shall also make necessary arrangements of his own diesel generators for the Works, so that the same can be used by him during failure/non-availability of electricity/power. The quoted rates shall be inclusive of the POL (petroleum, oil and lubricants) cost and other miscellaneous expenditure including labour for running and maintaining, the generator. It shall be the Contractor's responsibility to obtain all approvals, consents and permissions from any of the authority as for example, CPCB/DPCC required for operating the generators in accordance with the statutory rules and regulations of the Government. No additional payment shall be made to the Contractor for the purposes of procuring all the applicable approvals, consents and permissions.

3.15 Supply of water

The Contractor shall make his own arrangements for water required for the Works and nothing extra will be paid for the same. The Contractor shall submit necessary proof such as tanker receipts, amongst others, if the water is arranged by him.

- (i) If Employer water is available, it shall be supplied to contractor for construction and drinking purposes and recovery @ 1% of the gross amount of Contract Price shall be made. The ferrule connection with the Employer's main and the pipe line upto the Site and adequate storage shall be provided by the Contractor at his own cost.
- (ii) In case the Employer is not able to make available Employer water due to non-availability, shortage of water or any other reasons, the Contractor will have to make his own arrangement of water as per standard by sinking tube well etc. for construction and drinking purposes.
- (iii) The water used by Contractor shall be fit for construction purposes and human consumption as per B.I.S standards IS 456-2000 and IS 3025
- (iv) The water shall be tested from Employer laboratory before commencement cost of

testing shall be borne by the Contractor.

- (v) Water required for hydraulic testing shall be arranged by the Contractor and Employer will only facilitate the process of obtaining approvals or permissions as required.
- (vi) In case the Employer's water is not available as well as ground water at the Site is not found fit, the Contractor may arrange the water from other source. The water of the said source shall be tested from the Employer's laboratory at Contractor's own cost and may be allowed to be used only when found suitable for use. Necessary arrangements for carrying the water by tankers and its storage at the Site shall be made by the Contractor at his own cost. Any statutory requirements of registration/permissions for boring/installation of tube-wells either at the Site or elsewhere shall be taken by the Contractor at his own cost and nothing shall be payable.

Water when supplied to the Contractor by the Employer shall subject to the following conditions:

The Employer do not guarantee to maintain uninterrupted, supply of water and it shall be incumbent on the Contractor to make alternative arrangements for water at his/their own cost in the event of any temporary break down in Employer water main so that the progress of his/their Works is not held up for want of water. No claim of damage or refund of water charges will be entertained on account of such break down.

3.16 Clearance of site

The Site shall be cleared off all malba/ debris and other waste materials after completion of Works and shall ensure removal of temporary structure erected for execution of Works including hutments put up by his laborers at site, if any, before handing over the Site to the Employer in workable condition. No final payment for the Works shall be made to the Contractor till full satisfaction of the Engineer-in-Charge.

3.17 Relics and treasures

All gold, silver, coins, oil and other minerals of any description, and all precious stones of all kinds, treasures, antiques, fossils and other similar things, which shall be found in or at site, shall be the property of the Employer, and the Contractor shall duly preserve the same to the satisfaction of the Employer, and shall from time to time deliver the same to such person or persons, as the Employer may appoint to receive the same.

3.18 Excavated materials

The Contractor shall not sell or otherwise dispose off, or remove, except for the purpose of this Contract, sand, stone, clay, ballast, earth, rock or any other substance or materials, which may be obtained from any excavation made for the purpose of the Works, or any building or produce existing at the Site at the time of delivery of possession thereof. All such substances, materials, buildings and produce, shall be the property of the Employer; provided that the Contractor may with the permission of the Engineer-in-Charge use the same for the purpose of Works either free of cost or on payment of cost, as provided for under the Special Conditions of the Contract or in the absence of such conditions, as per mutually accepted terms and conditions.

3.19 Works during night, Sundays & National Holidays

Unless specifically provided in the Special Conditions of Contract, the Contractor shall not carry out any work between sunset and sunrise and/ or holidays without the prior permission of the Engineer- in-Charge. In case of any grave emergency or in order to avoid risk to property and life or to prevent damage to utilities or to restore them, work may be done at night also without the prior permission of the Engineer-in-Charge, but intimation to this effect should be sent to him immediately. No increase in rates or extra payments shall be admissible for night work.

The Contractor shall make adequate lighting and safety arrangements. He shall also be responsible for any claim on account of any injury to or loss of life, of any one, arising out of inadequate lighting and safety arrangements if work is done during night or holidays.

3.20 Care of work

Subject to the insurance obligations of the Parties, the Contractor shall bear full risk in and take full responsibility for the care of the Works and Materials, goods and equipment for incorporation therein from the Commencement Date until the Completion Certificate is issued, except and to the extent that any loss of or damage to the same shall arise out of any default or neglect of the Employer.

3.21 Precautions during execution

- (i) The Contractor shall comply with instructions issued by the Employer in respect of road maintenance and inter utility code of conduct for excavating trenches across and along various roads and other places, in all respects. In case of non-compliance the contractor shall be liable to pay liquidated damages for various lapses as indicated below:
 - a) Non-installation of boards on either ends of trenches: Rs. 500/- per day till implementation
 - b) Non shoring of walls of trenches to prevent collapse of the excavated portion (beyond 1.5 m) and where proper stopping not proved: Rs. 1000/- per day till the shoring is fixed.
 - c) Digging of trenches beyond a stretch of 500 meter for Electrical Authority and Employer and otherwise 1000 meter in case of telephone: Rs. 500/- per day till the damage is restored.
 - d) Non barricading of trenches of more than 1.5 meter: Rs. 500/- per day till completed.
 - e) Excavation of trenches across and along roads during day time (at 8 AM to 8PM)

- without permission: Rs. 500/- per day.
- f) Non removal of excess earth and other stones etc. which are causing inconvenience to the road users: Rs. 1000/- per day till completed.
 - g) Non consolidation of earth while back filling of trenches to the original level: Rs. 500/- per day till completed.
 - h) Non adherence to prescribed methodology for reinstatement of trenches: Rs. 500/- per day.
 - i) Road cutting without written or oral permission: Rs. 1250/- per day.
 - j) Non stacking of materials pipes etc. in an orderly manner during execution causing inconvenience to the road users: Rs. 1000/- per day.
- (ii) The contractor shall have to provide MS sheet barricading or as provided in BOQ up to a minimum height of 2 metres above ground level all around the Site of excavation and trenches as per direction of Engineer-in-Charge. Such barricading must be provided before taking up the excavation work and must remain in position till complete filling back of excavated trenches and resurfacing work, if any. The sheets must be painted in red & White stripes with fluorescent paint.
 - (iii) Proper supporting of all underground services such as water mains, sewers, cables, drains, and water and sewer connections shall be provided by the contractor without any additional cost. If the services/connections are damaged the contractor will be responsible for the restoration of the same to original specifications at his own cost.
 - (iv) Imposition of liquidated damages by Employer shall not absolve Contractor from any other civil/ criminal liabilities.
 - (v) Contractor should maintain first aid box, electric shock recovery devices, safety equipment such as breathing apparatus, safety personal protective equipment and/ or other safety equipment as per NHRC guidelines and/ or factory act.

4.0 The Site

4.1 Site description

The Site shall comprise the real estate described in Special Conditions of Contract in respect of which the right of way shall be provided by the Employer to the Contractor.

Unless specifically mentioned in the Contract, the Contractor shall be responsible to obtain all the necessary permits, permissions and/or approvals from the relevant department/ authority in relation to execution and completion of Works. The Employer shall only facilitate the process and will reimburse the charges paid by the Contractor after due verification.

4.2 Inspection of site

- (i) The Employer shall have made available to the Contractor with the tender documents such data on hydrological and sub-surface conditions as may have been obtained by or on behalf of the Employer from investigations undertaken relevant to the Works and the tender shall be deemed to have been based on such data, but the Contractor shall be responsible for his own interpretation thereof.
- (ii) The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and to have satisfied himself, so far as is practicable, before submitting his tender, as to the form and nature

thereof, including the sub-surface conditions, the hydrological and climatic conditions, the extent and nature of work and materials necessary for the completion of the Works, the means of access to the Site and the accommodation he may require and, in general, shall be deemed to have obtained all necessary information, subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Tender.

5.0 Specifications & Drawings

5.1 Works To Be Executed In Accordance With Specifications, Drawings, Orders, Etc.

5.1.1 The Contractor shall execute the whole and every part of the Works in the most substantial and workman like manner in every respect and in strict accordance with the specifications. The Contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions of the Engineer-in-Charge in respect of the work. The Contractor shall be furnished free of charge one copy of the Contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications of Employer specified in Special Conditions of Contract or in any BIS document.

5.1.2 The Contractor shall comply with the provisions of the Contract and with care and diligence execute and maintain the Works and provide all labour and materials, tools and plants for measurements and supervision of all Works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the Contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the Works and methods of construction.

5.2 Action in Case work Not Done as per Specifications

5.2.1 All work under or in course of execution or executed in pursuance of the Contract shall at all times be open and accessible to the inspection and supervision of the Engineer-in-Charge, his representatives and assistants in charge of the Works and all senior officers, officer of the quality control division of the Employer, third party hired by Employer, and of the chief technical examiner's office. The Contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the Contractor, either himself be present to receive orders and instructions or have his responsible agent, present for that purpose.

5.2.2 In the event it appears to the Engineer-in-Charge or his representative in charge of the Works or any nominated officer (as described above in this clause), that any work has been executed with unsound, imperfect, or unskillful workmanship, or is against Good Engineering Practice or with material or articles of a quality inferior to that contracted or otherwise not in accordance with the Contract, the Contractor shall, on demand in writing which shall be made during construction and upto six months after completion of the Works by the Engineer-in-Charge specifying the work, materials or articles complained (notwithstanding that the same may have been passed, certified and paid for forthwith) rectify, or remove and reconstruct the Works so specified in whole or in part, as the case may require, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, the Contractor shall be liable to pay compensation at the same rate as under clause 10.2 of the Contract (for non-completion of the Works in time) for this default.

5.2.3 Provided that in such an event the Engineer-in-Charge may not accept the item of Works at the rates applicable under the Contract but may accept such items at reduced rates as the Employer may consider reasonable during the preparation of on-account bills or final bill if

the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the Works outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the Contractor. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same shall be final and binding on the Contractor.

5.3 Action where there are no Specifications

In the case of any class of work for which there is no such specifications as referred to in clause 5.2, such work shall be carried out in accordance with the CPWD/ Bureau of Indian Standards Specifications or any other applicable standards specific to the Works.

Provided that where there is no such specification in CPWD/ Bureau of Indian Standards, the Works shall be carried out as per manufacturers' specifications. Provided further that where there are no such specifications as required above, the Works shall be carried out in all respects in accordance with Good Engineering Practice and Site requirements under the instructions and requirements as communicated by the Engineer-in-Charge.

5.4 Estimates

The estimate is based on CPWD's DSR 2016 as applicable to Employer, DJB approved rates, analyzed rates of Employer and in other cases on market rates. The Works shall be carried out as per CPWD specifications /latest editions of the specifications, with upto date (on the date of issue of NIT) correction slips, for work at Delhi and other specifications laid down by Indian or other standards (CPHEEO, ASTM, WRC, etc.) and best practices being followed by Employer

5.5 Execution of work

5.5.1 The Works is to be carefully executed strictly in accordance with the approved drawing supplied to the Contractor or with such modifications as may be approved by the Engineer-in-Charge from time to time. Any additional amended, revised or detailed drawings that does not have a significant impact on the scope of work, issued by the Engineer-in-Charge or approved in writing by him during the progress of the Works are to be considered to form the part of the Works and as such being included in the Contract. No claim whatsoever shall be considered on this account.

5.5.2 The order of sequence of execution of Works and general condition of the Works shall be subject to the approval and direction of the Engineer-in-Charge. Any such approval or direction by the Engineer-in-Charge shall in no way relieve the Contractor of the responsibility for the proper and satisfactory execution of the Works according to the terms of Contract and within stipulated period. No claim of the Contractor whatsoever shall be considered on this account.

5.5.3 The information given in the drawing including the conditions of ground or the information regarding of the depth of water to be met with means of access, or any other such matter shall not relieve the Contractor from the fulfillment of the Contract.

5.5.4 The Contractor shall be responsible and must check and satisfy himself the accuracy of levels, lines positions, dimensions, sizes etc. of the finished Works in accordance with the Contract.

5.6 Contractor's understanding of documents

- (i) The Contractor shall be deemed to have satisfied himself, before tendering, as to the correctness and sufficiency of his tender for the Works and of the rates and prices stated in the priced bill of quantities and the schedule of rates and prices, if any, all of which shall,

except insofar as it is otherwise provided in the Contract, cover all his obligations under the Contract and all matters and things necessary for the proper execution and maintenance of the Works. If, however, during the execution of the Works, the Contractor shall encounter physical conditions, other than climatic conditions on the site, or artificial obstructions, which conditions or obstructions could, in his opinion, not have been reasonably foreseen by an experienced Contractor, the Contractor shall forthwith give written notice thereof to the Engineer-in-Charge and if, in the opinion of the Engineer-in-Charge, such conditions or artificial obstructions could not have been reasonably foreseen by an experienced Contractor, then the Engineer-in-Charge shall certify and the Employer shall pay reasonable additional cost to which the Contractor shall have been put by reason of such conditions in the following cases:

- a. for complying with any instruction which the Engineer-in-Charge may issue to the Contractor in connection therewith, and
 - b. For any proper and reasonable measures approved by the Engineer-in-Charge which the Contractor may take in the absence of specific instructions from the Engineer-in-Charge, as a result of such conditions or obstructions being encountered.
- (ii) The decision of the Employer as to the additional cost shall be final and binding.

6.0 Performance Guarantee and Security Deposit

6.1 Performance Guarantee

- (i) The Contractor shall submit an irrevocable Performance Guarantee of 5% (five percent) of the amount as specified in Clause 6.1 (iv), (v) and (vi) below, in addition to other deposits mentioned elsewhere in the Contract for his proper performance of the Contract, (notwithstanding and / or without prejudice to any other provisions in the Contract) within 15 days of issue of Letter of Acceptance. This period can be further extended by Engineer-in-Charge up to a maximum period of 5 days on written request of the Contractor stating the reason for delays in procuring the Guarantee to the satisfaction of Engineer-in-Charge. This guarantee shall be in the form of Bank Guarantee from a scheduled bank of India as per the format attached with General Conditions of Contract.
- (ii) A Letter of Acceptance shall be issued in the first instance informing the Contractor of the decision of the Employer to accept his tender and the Work Order shall be issued only after the Performance Guarantee in prescribed form is received. In case of failure by the Contractor to furnish Performance Guarantee within the specified period Employer shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the Earnest Money absolutely and debar the Contractor to participate in the Works, if retendered
- (iii) The Performance Guarantee shall be initially valid up to 60 days beyond the Stipulated Date of Completion. In case the time for completion of Works gets enlarged the Contractor shall get the validity of Performance Guarantee extended within 30 days of receiving such notice from Engineer-in-Charge to cover such enlarged time plus 60 days. After recording of the Completion Certificate for the Works by the Employer, the Performance Guarantee shall be returned to the Contractor.
- (iv) The cost of complying with the requirements of this clause shall be borne by the Contractor, unless the Contract otherwise provides.
- (v) The Engineer-in-Charge shall not make a claim under the Performance Guarantee except for amounts to which Employer is entitled under the Contract (notwithstanding and / or without prejudice to any other provisions in the Contract) in the event of:

- a. Failure by the Contractor to extend the validity of the Performance Guarantee as described herein above within 30 days of receipt of notice from the Engineer-in- Charge, in which event the Engineer-in-Charge may claim the full amount of the Performance Guarantee.
- b. Failure by the Contractor to pay Employer any amount due either as agreed by the Contractor or determined under any of the clauses / conditions of the Contract, within 30 days of the service of notice to this effect by Engineer-in-Charge.
- c. In the event of the Contract being determined or rescinded under provision of any of the clause/ condition of the Contract the Performance Guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Employer.

6.2 Security Deposit

- (i) The Contractor shall permit Employer at the time of making any payment to him for Works done under the Contract to deduct a sum at the rate of 10% of the gross amount of each running bill till the sum along with the sum already deposited as earnest money, will amount to 5% of the amount as specified under Clause 6.2 (ii), (iii) and (iv). Such deductions will be made and held by Employer by way of Security Deposit. The security deposit shall be in addition to the performance guarantee amount.
- (ii) All compensations or the other sums of money payable by the Contractor under the terms of this Contract may be deducted from, or paid by the sale of a sufficient part of his Security Deposit or from any sums which may be due to or may become due to the Contractor by Employer on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the Contractor shall within 10 days make good in cash the amount deducted from, or raised by sale of his Security Deposit or any part thereof. The Security Deposit shall be collected from the running bills of the Contractor at the rates mentioned above and the earnest money if deposited in cash at the time of tenders will be treated a part of the Security Deposit.

6.3 Refund of Security Deposit

The Security Deposit shall be returned to the Contractor on certification after the Engineer-in Charge has satisfied himself that all the terms of this Contract have been duly and faithfully carried out by the Contractor or 60 (sixty)days after successful completion of Defect Liability Period as per clause 16.1 and on submission of the following :

- (i) No demand/claim certificate of the Contractor for executed value of the Contract.
- (ii) Material and Payment reconciliation and no recovery certificate of the Engineer-in Charge.
- (iii) Labour clearance certificate of the Contractor issued by the labour officer as per clause 15.1.2.
- (iv) Statutory requirement compliance certificate of the Engineer-in-Charge.
- (v) Completion Certificate of the Engineer-in-Charge.
- (vi) Any other requirement as per Contract.

7.0 Reporting, Inspection & Quality

7.1 Quality Control Systems

7.1.1 The Contractor shall establish a suitable quality control mechanism to ensure compliance with the requirements of the Specifications and Standards in accordance with the provisions of this Contract (the “Quality Assurance Plan” or “QAP”).

7.1.2 The Contractor shall, within 21 days of the issue of Work Order, submit to the Engineer-in-Charge and upload in the Employer's PMS (Project Monitoring System) for approval, the proposed Quality Assurance Plan which shall include the following:

- (i) Organisation, duties and responsibilities, procedures, inspections, documentation;
- (ii) quality control mechanism including sampling and testing of materials, plant, project assets, test frequencies, standards, acceptance criteria, testing facilities, reporting, recording and interpretation of test results, approvals, check list for site activities, Performa for testing and calibration; and

7.1.3 The Contractor shall provide and procure all reasonable assistance, documents, apparatus and instruments, fuel, consumables, water, electricity, labour, Material, samples, and qualified personnel as are necessary for examining and testing the Works and workmanship in accordance with the Quality Assurance Plan.

7.1.4 The cost of supplying samples and testing of Works and workmanship for the tests provided for in the Quality Assurance Plan or in the Contract shall be borne by the Contractor. Provided that the testing charges will be reimbursed to Contractor by Employer at actual on verification of proof submitted.

7.1.5 The Contractor shall on the directions issued by the Engineer-in-Charge carry out such tests including those not provided for in the Contract that are in accordance with the good and sound industry practice to assess the quality of the Works or workmanship. The Contractor shall bear the cost of the tests and samples if the quality of the Works or workmanship is not in compliance with the Specifications and Standards. In any other case, the cost of test shall be a determined by the Engineer-in-Charge and shall be payable by the Employer.

7.1.6 It shall be the responsibility of the Contractor to attend to the defects pointed out/observation made by the senior officers of the Employer during their inspections in respect of the required quality of material, mandatory test for materials, items of the Works, fittings and on specifications of the work being executed.

7.2 Reporting, inspection and checking of Works

7.2.1 The Contractor shall enter the online progress reports in the format of project management system (for quality monitoring, physical and financial progress monitoring) on 1st and 15th of every month during the Contract.

7.2.2 For mechanical supply items, the inspection tests at manufacturers' work will be in accordance with Employer's specifications, BIS specifications and suppliers' norms, as applicable.

7.2.3 The Works is also liable to be inspected and checked by a 3rd party fixed by Employer/vigilance Wing of Employer or by any other statutory body. The Works may be checked by the agencies as mentioned above simultaneously, subsequently, jointly or independently and the Contractor shall be responsible for removing of all defects/deficiencies pointed out by them at its own cost.

7.2.4 The inspection by one agency/ team shall not absolve the Contractor of his responsibility to the defects pointed out by the other agencies and rectification thereto.

Recoveries, if any, proposed by any of the inspection agency on account of short comings in respect of quality/quantity in the Works shall be recovered from the Contractor's payments or

guarantees and deposits available with Employer.

8.0 Insurance

8.1 Insurance of Works

8.1.1 Requirements

Before commencing execution of Works, it shall be obligatory for the Contractor to obtain at his own cost stipulated insurance cover under the following requirements:

- (i) Contractor's All Risk and Third Party Cover.
- (ii) Liability under the Workmen's compensation Act, 1923, and other applicable labour laws.
- (iii) Accidents to staff, Engineer-in-Charge, Supervisors and others who are not governed by Workmen's Compensation) Act.
- (iv) Damage to material, machinery and Works due to fire, and theft.
- (v) Damage to existing assets, in case of a rehabilitation project. Employer shall provide the valuation of existing assets before submission of bids.
- (vi) The Contractor's equipments and other things brought onto the site by the Contractor, for a sum sufficient to provide for their replacement at the Site.
- (vii) Any other risk to be covered by Insurance as may be specified by the Employer in the Special Conditions of Contract.

8.1.2 Policy in joint names of Contractor and Employer

The policy referred to under sub-clause 8.1.1 shall be obtained in the joint names of the Contractor and the Employer and shall inter-alia provide coverage against the following, arising out of or in connection with execution of Works, its maintenance and performance of the Contract.

- (i) Loss of life or injury involving public, employee of the Contractor, or that of Employer and Engineer-in-Charge.
- (ii) Injury, loss or damages to the Works or property belonging to public, Government bodies, local authorities, utility organisations, Contractors, Employer or others.

8.1.3 Currency of Policy

The policies shall remain in force throughout the period of execution of the Works and till the expiry of the Defect Liability Period. The Contractor shall produce to the Engineer-in-Charge or his representative the various insurance policies obtained by him and also the rates of premium and the premium paid by him to ensure the adequacy of the insurance at all times and ensure that the policies continue to be in force.

8.1.4 Remedy on Contractor's Failure to insure

If the Contractor fails to effect or keep in force or provide adequate cover in the insurance policies mentioned in sub-clause 8.1.1, or any other insurance it might be required to effect under the Contract, then in such cases, the Employer may effect and keep in force any such insurance or further insurance and the cost and expenses incurred by Employer in this regard shall be deductible from payments due to the Contractor or from the Contractor's Performance Security, Security Deposit or any other guarantees available with the Contractor.

9.0 Material & Workmanship

9.1 Materials supplied by Employer

Nil

9.2 Materials to be supplied by Contractor

9.2.1 The Contractor shall, at his own expense, provide all materials, required for the Works other than those, which are stipulated, to be supplied by the Employer.

9.2.2 The Contractor shall, at his own expense and without delay; supply to the Engineer-in-Charge samples of materials to be used on the Works and shall get these approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the Contract. The Contractor shall, if requested by the Engineer-in-Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply. The Engineer-in-Charge shall within 7 (seven) days of supply of samples, intimate the Contractor in writing whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Engineer-in-Charge for his approval fresh samples complying with the specifications laid down in the Contract. When materials are required to be tested in accordance with specifications, approval of the Engineer-in-Charge shall be issued after the test results are received.

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

9.2.4 The Contractor shall, at his risk and cost, make all arrangements and shall provide all facilities as the Engineer-in-Charge may require for collecting, and preparing the required number of samples for such tests at such time and to such place or places as may be directed by the Engineer-in-Charge and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the Contract or specifications. The Engineer-in-Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the Works and the Contractor shall afford every facility and every assistance in obtaining the right to such access.

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

9.3 Dismantled Material

The Contractor shall treat all materials (including bricks, scarp, stone soling, trees, etc.) obtained during dismantling of a structure, excavation of the Site, etc. as Employer's property and such materials shall be disposed off to the best advantage of Employer according to the instructions in writing issued by the Engineer-in-Charge.

9.4 Contractor to supply tools & plants etc.

The Contractor shall provide at his own cost all materials (except such special materials If any, as may in accordance with the Contract be supplied from the Employer) stores, plants,

tools, appliances, implements, ladders, cordage, tackle, scaffolding and temporary work required for the proper execution of the work, whether original, altered or substituted and whether included in the specification or other documents forming part of the Contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge. The Contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out Works, and counting, weighing and assisting the measurement for examination at any time of the Works or materials. In the event the Contractor fails to supply such requisite number of persons with the means and materials the same may be provided by the Engineer-in-Charge at the expense of the Contractor and the expenses may be deducted, from any money due to the Contractor, under this Contract or otherwise and/or from his security deposit or the proceeds of sale thereof, or of a sufficient portions thereof.

9.5 Hire of plant and machinery

The Contractor shall arrange at his own expense all tools, plant, machinery or equipment (hereinafter referred to as T&P) required for execution of the Works.

9.6 Leveling instrument/survey equipment

The Contractor shall always make available and accurate leveling instrument at the Site. Necessary levels shall be given by the Contractor or his authorized site engineer and the same will be checked by the site staff of the Employer.

9.7 Material brought at site

Materials brought at Site consisting of plant, machinery, tools, tackles, raw material etc. required for execution of Works shall not be removed except for use in the Works unless permission in writing is given by the Engineer-in-Charge. The Contractor shall be responsible for loss or damage such materials and goods.

10.0 Suspension & Delays

10.1 Suspension of Work

10.1.1

- (i) The Contractor shall within 3 days of receipt of the order in writing of the Engineer-in-Charge, (whose decision shall be final and binding on the Contractor) suspend the progress of the work or any part thereof for such time and in such manner as the Engineer-in-Charge may consider necessary so as not to cause any damage the work already done or endanger the safety in general thereof for any of the following reasons:
 - a. on account of any default on the part of the Contractor or;
 - b. for proper execution of the Works or part thereof for reasons other than the default of the Contractor;
 - c. for safety of the Works, public and or public property; or
 - d. to avoid hindrance to other works; or
 - e. as communicated by Engineer-in-Charge for any other reason.

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

- (ii) If the suspension is ordered for reasons (b), (c), (d) or (e) in sub- Para (i) above:

- a. The Contractor may be granted on merits an extension of time equal to the period of every such suspension plus 25% or 1 month, whichever is less, of period for mobilization and demobilization,
- (iii) If the Engineer-in-Charge orders for suspension of the Works or part of the Works for more than three months, when the suspension of the Works is ordered for reason as mentioned in sub-para (i) (b), (c), (d) or (e) hereinabove, the Contractor may serve a written notice on Engineer-in-Charge. The said notice issued by the Contractor shall be for requiring permission to proceed with the Works or part thereof in regard to which progress has been suspended. Within 15 [fifteen] days of receipt of such notification from Contractor the Engineer-in-Charge shall either grant the said permission OR shall explain in detail the reasons because of which work cannot be resumed for such suspended portions.
- (iv) If the Engineer-in-Charge does not respond within the said time of 15 [fifteen] days, the Contractor, if he intends to treat the suspension:
 - (a) where it affects only a part of the Works as an omission of such part by Employer; or
 - (b) where it affects whole of the Works, as an abandonment of the Works by Employer shall within 10 days of expiry of said period of 15 days give notice in writing of his intention to the Engineer-in-Charge.

10.1.2 In the event of the Contractor treating the suspension as an abandonment of the Contract by Employer, the Contractor shall have no claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of the Works in full but which he could not derive in consequence of the abandonment.

10.2 Compensation for delays

10.2.1 In the event the Contractor fails to maintain the required progress in terms of clause 10.4 or to complete the Works and clear the Site on or before the Stipulated Date of Completion, he shall, without prejudice, to any other right or remedy available under the law to the Employer, on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below or as the Engineer-in-Charge (whose communication in writing shall be final and binding) may communicate on the Contract Price for every completed day/month (as applicable) that the progress remains below that specified in clause 10.4 or that the Works remains incomplete.

Provided that the same provision shall also apply to items or group of items for which a separate period of completion from that provided under clause 10.4 has been specified.

Compensation for delay of Works shall be @ 0.5% of Contract Price per day.

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 5% of the Contract Price or the Contract Price of the item or group of items of Works for which a separate period of completion is given.

10.2.2 The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other Contract with the Employer. In case, the Contractor fails to achieve a particular milestone mentioned in Special Conditions of Contract, or the rescheduled milestone(s) in terms of clause **10.2.3** The amount shown against that milestone shall be withheld, to be adjusted against the compensation to be levied for the final grant of extension of time. Withholding of this amount on failure to achieve milestones shall be automatic and without any notice to the Contractor.

Provided that if the Contractor catches up with the progress of Works on the subsequent milestone(s), the withheld amount shall be released.

Provided further that where the Contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. No interest, whatsoever, shall be payable on such withheld amount.

10.3 Time extensions for delay

10.3.1 The time allowed for execution of the Works as specified in the Special Conditions of Contract or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the Works shall commence from the 10th calendar day or such time period as mentioned in Work Order. Where the Contractor commits default in commencing the execution of the Works, the Employer shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee absolutely.

Within 10 days of date of award of work, the Contractor shall submit a work program schedule as required under relevant clause for each milestone and get it approved by the Engineer-in-Charge. The Schedule shall be prepared in direct relation to the time stated in the Contract for completion of items of the Works. It shall indicate the forecast of the dates of commencement and completion of various sections of the Works and may be amended as necessary by Contract between the Engineer- in-Charge and the Contractor within the time prescribed in the Contract. To ensure good progress during the execution of the Works, the Contractor shall in all cases in which the time allowed for any Works, exceeds one month, except for special jobs for any work where a separate program has been agreed upon, complete the Works as per milestone given below:

1/8th Works in 1/4th time
3/8th Works in 1/2th time
3/4th Works in 3/4th time
full Works in full time

10.3.2 If the Works be delayed by:

- (i) Force majeure as defined under clause 10.4, or
- (ii) Delay on the part of other contractors or suppliers engaged by Engineer-in-Charge executing some other work not forming part of the Contract, or
- (iii) Non-availability of stores, if provided by Employer or
- (iv) Non-availability or break down of tools and plants, if being supplied or supplied by the Employer, or
- (v) Non-availability of Site as per clause 2.4
- (vi) Any other cause, but not including predictable events such as rainy season, clearance of site, etc. which in the opinion of the Engineer-in-Charge is beyond the Contractors control.

Then upon the happening of any such event causing delay, the Contractor shall within 7 (seven) days give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use his best endeavors to prevent or make good the delay and shall undertake all delay mitigation measures to the satisfaction of the Engineer-in-Charge before proceeding with the Works. If neither Parties issues notice regarding the event within 7 (seven) days of occurrence of such event, the said event shall be deemed not to have occurred and the Contract will continue to have effect as such.

It shall be the responsibility of the Contractor to record any hindrance and reasons thereof in

the PMS within 7 (seven) days of occurrence of such event.

Neither Parties shall by reason of such event be entitled to terminate the Contact or have claim for damages against the other in respect of such non-performance or delay in performance except as may be provided under provisions of clause 11.1.

10.3.3 Request for rescheduling of Milestones as specified in Special Conditions of Contract and extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay. The Contractor may also, wherever feasible, indicate in such a request the period for which extension is desired.

In any such case the Engineer-in-Charge may give a fair and reasonable extension of time and reschedule the milestones for completion of work. However, while according any such extension, the Contractor shall have to prove that the activity is lying on the critical path of the work program schedule as submitted under clause 3.9.

Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such request. The failure of the Contractor to apply in writing for the extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-Charge and such extension of time shall be binding on the Contractor.

10.4 Force Majeure

As used in this Contract, the expression "Force Majeure" or "Force Majeure Event" shall mean occurrence in India of any or all of Non-Political Event, Indirect Political Event and Political Event, as defined in clauses 10.4.1, 10.4.2, and 10.4.3 respectively, if it affects the performance by the Parties claiming the benefit of Force Majeure (the "Affected Party") of its obligations under this Contract and which act or event (i) is beyond the reasonable control of the Affected Party, and (ii) the Affected Party could not have prevented or overcome by exercise of due diligence and following Good Industry Practice, and (iii) has material adverse effect on the Affected Party.

10.4.1. Non-Political Event

A Non-Political Event shall mean one or more of the following acts or events:

- (i) act of God, epidemic, extremely adverse weather conditions, lightning, earthquake, landslide, cyclone, flood, volcanic eruption, chemical or radioactive contamination or ionising radiation, fire or explosion (to the extent of contamination or radiation or fire or explosion originating from a source external to the Site);
- (ii) strikes or boycotts (other than those involving the, Contractor, Subcontractors or their respective employees/representatives, or attributable to any act or omission of any of them) interrupting supplies and services to the Site for a continuous period of 24 (twenty four) hours and an aggregate period exceeding 7 (seven) days in an Accounting Year, and not being an Indirect Political Event set forth in clause 10.4.2;
- (iii) any failure or delay of a Sub-contractor/Contractor but only to the extent caused by another Non-Political Event and which does not result in any offsetting compensation being payable to the Employer by or on behalf of such Contractor;
- (iv) any judgement or order of any court of competent jurisdiction or statutory authority made against the Contractor in any proceedings for reasons other than (i) failure of the Contractor to comply with any Applicable Law or Applicable Permit, or (ii) on account of breach of any Applicable Law or Applicable Permit or of any contract, or (iii) enforcement of this Contract, or (iv) exercise of any of its rights under this Contract by the Employer;
- (v) the discovery of geological conditions, toxic contamination or archaeological remains on the Site that could not reasonably have been expected to be discovered through a site inspection; or

- (vi) any event or circumstances of a nature analogous to any of the foregoing.

10.4.2. Indirect Political Event

An Indirect Political Event shall mean one or more of the following acts or events:

- (i) an act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage;
- (ii) industry-wide or State-wide strikes or industrial action for a continuous period of 24 (twenty four) hours and exceeding an aggregate period of 7 (seven) days in an Accounting Year;
- (iii) any civil commotion, boycott or political agitation which prevents construction of the Works by the Contractor for an aggregate period exceeding 7 (seven) days in an Accounting Year;
- (iv) any failure or delay of a Contractor to the extent caused by any Indirect Political Event and which does not result in any offsetting compensation being payable to the Employer by or on behalf of such Contractor;
- (v) any Indirect Political Event that causes a Non-Political Event; or
- (vi) any event or circumstances of a nature analogous to any of the foregoing.

10.4.3. Political Event

A Political Event shall mean one or more of the following acts or events by or on account of any Government Instrumentality:

- (i) Change in Law, only if consequences thereof cannot be dealt with under and in accordance with the provisions of clause 14.3;
- (ii) compulsory acquisition in national interest or expropriation of any project assets or rights of the Contractor or of the Sub-Contractors;
- (iii) unlawful or unauthorised or without jurisdiction revocation of, or refusal to renew or grant without valid cause, any clearance, licence, permit, authorisation, no objection certificate, consent, approval or exemption required by the Contractor or any of the Sub-contractors to perform their respective obligations under this Contract; provided that such delay, modification, denial, refusal or revocation did not result from the Contractor's or any Sub-contractor's inability or failure to comply with any condition relating to grant, maintenance or renewal of such clearance, licence, authorisation, no objection certificate, exemption, consent, approval or permit;
- (iv) any failure or delay of a Contractor but only to the extent caused by another Political Event and which does not result in any offsetting compensation being payable to the Employer by or on behalf of such Contractor; or
- (v) any event or circumstance of a nature analogous to any of the foregoing.

10.4.4 Effect of Force Majeure

Neither Parties shall be considered to be in default or in breach of his obligations under the Contract to the extent that performance of such obligations is prevented by any circumstances of Force Majeure which arises after the date of the letter of Acceptance or the date when the Contract becomes effective, whichever is the earlier.

10.4.5 Notice of Occurrence

If either Parties considers that any circumstances of Force Majeure have occurred which may affect performance of his obligations he shall promptly notify the other Parties and the Engineer-in - Charge.

10.4.6 Performance to Continue

Upon the occurrence of any circumstance of Force Majeure the Contractor shall endeavour to

continue to perform his obligations under the Contract so far as reasonable practicable. The Contractor shall notify the Engineer-in-Charge of the steps he proposes to take including any reasonable alternative means for performance which is not prevented by Force Majeure. The Contractor shall not take any such steps unless directed so to do by the Engineer-in-charge.

Provided that if the Contractor incurs additional costs in complying with the Engineer-in-Charge's directions under this clause, the amount thereof shall be certified by the Engineer-in-charge and added to the Contract Price.

11.0 Termination of Contract

11.1 When can Contract be terminated

11.1.1 Subject to other provisions contained in this clause the Engineer-in-Charge may, without prejudice to his any other rights or remedy against the Contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this Contract or otherwise, and whether the Completion Date has or has not elapsed, by notice in writing absolutely determine the Contract in any of the following cases, if the Contractor:

- (i) persistently neglects to carry out his obligations under the Contract and/or commits default in complying with any of the terms and conditions of the Contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge; or
- (ii) having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the Works is being performed in an inefficient or otherwise improper un-workman like" manner shall omit to comply with the requirement of such notice for a period of seven days thereafter, or
- (iii) has without reasonable cause, suspended the progress of the Works or has failed to proceed with the Works with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the Works by Completion Date and continues to do so after a notice in writing of seven days from the Engineer-in- Charge' or
- (iv) fails to complete the Works within the Completion Date or items of Works with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge, or
- (v) being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors; or
- (vi) being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order; or
- (vii) shall offer or give or agree to give to any person in Government service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other Contract for Government; or
- (viii) shall obtain a Contract with Government as a result of wrong tendering 'or other non-

- bona- fide methods of competitive tendering; or
- (ix) shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days; or
- (x) assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the Works, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer sublet or otherwise parts with the entire Works or any portion thereof without the prior written approval of the Employer
- (xi) doesn't start the Works within 1/8th of the stipulated time; or
- (xii) is found to have a conflict of interest. Conflict of interest is defined in the general eligibility criteria shared with the Contractor during the bidding stage.

11.1.2 When the Contractor has made himself liable for action under any of the cases aforesaid, the

Engineer-in-Charge on behalf of Employer shall have powers:-

- (i) To determine or rescind the Contract as aforesaid (of which termination or rescission notice in writing to the Contractor under the hand of Engineer-In- Charge shall be conclusive evidence). Upon such determination or rescission, the Earnest Money Deposit, Security Deposit already recovered and performance guarantee under the Contract shall be liable to be forfeited and shall be absolutely at the disposal of the Employer
- (ii) "After giving notice to the Contractor to measure up the Works of the Contractor and totake such whole, or the balance or part thereof, as shall be un-executed out of his hands and to give it to another Contractor to complete the Works at risk and cost of the defaulting Contractor. The Contractor, whose Contract is determined or rescinded as above, shall not be allowed to participate in the tendering process for the balance Works besides being subject to appropriate legal action as per the provisions of Contract. In the event of above course(s) being adopted by the Engineer-in-Charge, the Contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any material or entered into any engagements or made any advance on account or with a view to the execution of the Works or the performance of the Contract. And in case action is taken under any of the provision aforesaid the Contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this Contract unless and until the Engineer-in- Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

11.2 Contractor liable to pay compensation even if action not taken under clause

11.2.1

In any case in which any of the powers conferred upon the Engineer-in-Charge by clause 11.1 thereof, shall have become exercisable and the same are not exercised, the non - exercise thereof shall not constitute a waiver of any of the conditions hereof and such powers shall notwithstanding be exercisable in the event of any future case of default by the Contractor and the liability of the Contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause, he may, if he so desires after giving a notice in writing to the Contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the Contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the Works, or the Site thereof belonging to the Contractor, or procured by the Contractor and intended to be used for the execution of the workflow any part thereof, paying or allowing for the same in account at the Contract rates or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on

the Contractor.

11.3 Cancellation of Contract in full or part

11.3.1 The Employer may, without prejudice to any other right or remedy which shall have accrued or shall accrue hereafter to Employer, by a notice in writing to cancel the Contract as a whole or only such item of Works in default from the Contractor due to occurrence of any of the events mentioned in clause 11.1 above.

The Engineer-in-Charge shall on such cancellation by the Employer have powers to:

- (i) Take possession of the Site and any materials, constructional plant, implements stores, etc., thereon; and/or
- (ii) Carry out the incomplete work by any means at the risk and cost of the Contractor,

On cancellation of the Contract in full or in part, the Engineer-in-Charge shall determine what amount, if any, is recoverable from the Contractor for completion of the Works or part of the Works or in case the Works or part of the Works is not to be completed, the loss of damage suffered by Employer. In determining the amount, credit shall be given to the Contractor for the value of the Works executed by him up to the time of cancellation, the value of Contractor's materials taken over and incorporated in the Works and use of plant and machinery belonging to the Contractor.

11.3.2 Any excess expenditure incurred or to be incurred by Employer in completing the Works or part of the Works or the excess loss or damages suffered or may be suffered by Employer as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to Employer in law be recovered from any money due to the Contractor on any account, and if such moneys are not sufficient the Contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the Contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the Contractors' unused materials, constructional plant, implements, temporary buildings, etc. and apply the proceeds of sale thereof towards the satisfaction of any sums due from the Contractor under the Contract and if thereafter there be any balance outstanding from the Contractor, it shall be recovered in accordance with the provisions of the Contract.

11.3.3 Any sums in excess of the amounts due to Employer and unsold materials, constructional plant, etc., shall be returned to the Contractor, provided always that if cost or anticipated cost of completion by Employer of the Works or part of the Works is less than the amount which the Contractor would have been paid had he completed the Works or part of the Works, such benefit shall not accrue to the Contractor.

11.4 Termination of Contract on death of Contractor/Partner

If the Contractor is an individual or a sole proprietary concern, and the individual or the sole proprietor dies, or if the Contractor is a partnership concern and one of the partners dies, in that case unless the Employer is satisfied that the legal representative of the individual Contractor or of the sole proprietor, as the case may be, or in the case of a partnership firm, all surviving partners, are capable of carrying out and completing the Contract, the Employer shall be entitled to terminate the Contract as to its incomplete part. In that event, the Employer shall not be liable to pay any compensation to the legal heirs of the deceased Contractor and / or to the surviving partners of the Contractor's firm, on account of such cancellation of Contract. SRCC's decision, as to whether the legal representatives of the deceased Contractor or surviving partners of the Contractor firm can or cannot carry out and complete the Contract, shall be final and

binding on the parties. Any liability incurred by the deceased Contractor, or by the deceased partner of the contracting firm, before his death, shall be recovered from the legal representatives of the deceased Contractor or from the surviving partners of the said contracting firm as the case may be.

11.5 Termination due to Force Majeure Event

11.5.1 If a Force Majeure Event, as specified under clause 10.4, subsists for a period of 60 days or more within a continuous period of 120 days, either Parties may in its discretion terminate this Contract by issuing a termination notice to the other Parties without being liable in any manner whatsoever, save as provided in provisions of clause 11.1. Upon issue of such termination notice, this Contract shall, notwithstanding anything to the contrary contained herein, stand terminated forthwith; Provided that before issuing such termination notice, the Parties intending to issue the termination notice shall inform the other Parties of such intention and grant 15 (fifteen) days time to make a representation, and may after the expiry of such 15 (fifteen) days period, whether or not it is in receipt of such representation, in its sole discretion issue the termination notice.

11.5.2 In the event of the Contract being terminated under clause 11.5.1 on account of Force Majeure Event, the Engineer-in-Charge shall issue a payment certificate which shall include:

- (i) An amount equal to the value of the construction work less payments already made, less advance payments outstanding against the Contractor up to the date of issue of termination notice, less other recoveries due in terms of the Contract, less taxes due to be deducted at source in accordance with applicable Law
- (ii) the cost of plants and materials ordered for the Works which have been delivered to the Contractor. Provided that such Plants and Materials shall become property of Employer when paid for by the Employer and the Contractor shall place the same at the Employer's disposal
- (iii) and the Contractor's cost of protecting and securing the Works.

12.0 Measurement & Payments

12.1 Measurement of work done

12.1.1 The Engineer-in-Charge shall, except as otherwise provided, ascertain and determine, by measurement, the value of Works done in accordance with the Contract.

Measurement of all items having financial value shall be entered in measurement book and/or level field book so that a complete record is obtained of all Works performed under the Contract. All measurements and levels shall be taken jointly by the Engineer-in-Charge or his authorized representative and by the Contractor or his responsible agent from time to time during the progress of the Works and such measurements shall be signed and dated by the Engineer-in-Charge and the Contractor or their representatives as token of their acceptance. If the Contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.

12.1.2 If for any reason the Contractor or his responsible agent is not available and the work of recording measurements is suspended by the Engineer-in-Charge or his representative, the Engineer-in-Charge and the Employer shall not entertain any claim from Contractor for any loss or damages on this account. If the Contractor or his responsible agent does not remain present at the time of such measurements after the Contractor or his responsible agent has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer-in-Charge or his representative shall be deemed to have been accepted by the Contractor.

12.1.3 The Contractor shall, without extra charge, provide all assistance with every instrument, labour and other things necessary for measurements and recording levels.

12.1.4 Except where any general or detailed description of the Works expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the technical specifications notwithstanding any provision in the relevant standard method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.

12.1.5 If any part of Works shall be covered up or placed beyond the reach of measurements without notice been given to the Engineer-in-Charge or without his consent being obtained in writing, the Works shall be uncovered at Contractor's expense, or in default thereof no payment or allowance shall be made for such Works or the materials with which the same was executed.

12.1.6 Engineer-in-Charge or his authorized representative may cause either themselves or another officer of the Employer to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

12.1.7 It is also a term of this Contract that recording of measurements of any item of Works in the measurement book and/or its payment in the interim, on-account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the Contractor from liabilities from any other measurements or defects noticed till completion of the defects liability period.

12.2 Payments of running bills

12.2.1 The payment of the monthly running bill for the Works shall be released in 90 days from the date of recording of pay order. No excuse for delay in completion of work/prolongation of the Contract shall however be entertained on account of the reason of delay in payment. The bidder therefore, must take into consideration of its financial capability to carry out and to continue the work without any hindrances.

12.2.2 In the event of the failure of Employer to release payment as per clause 12.2.1, the Employer shall be liable to pay interest @ 10% per annum on net payable amount computed for period beyond 90 days. Provided always, that no interest shall be payable on any amount disallowed or disputed by the Engineer-in-Charge or the Employer, even if such amount is later on determined to be payable to the Contractor, as a result of any process resorted to for the settlement of the dispute as per Contract.

12.2.3 It shall be the contractual obligations on the part of the Contractor to submit with each running bill photocopies of the:-

- (i) Challans for the main items purchased for the Works like CI/DI/MS/RCC/PSC Pipes, E&M equipment, manhole frame and covers, footrests, sluice valves, fire hydrants and other fixtures and accessories used in the Works;
- (ii) Guarantee/ warranty certificates, wherever applicable;
- (iii) Manufacturer's test reports of cement, steel, MS plates, sluice valves etc.
- (iv) GIS maps of pipelines and other related key components (to be submitted only with the final bill)

Note: Contractor shall solely be responsible for the authenticity of the challans and other documents submitted along with each running and final bills.

12.2.4 The original challans shall be produced before the Engineer-in-Charge for verification, as and when desired by him.

12.3 Currency of payment

Unless specifically provided for in the Contract, all payments shall be in Indian rupees only. Unless specified otherwise, payment, if any, in foreign currencies, shall be made only to the extent and in the manner laid down in the Contract. In case of items of Works requiring payments in foreign exchange, the Contractor shall furnish the details in the Bill of Quantities. For such items, payments will be arranged in Foreign Currency.

12.4 Payment of Contractor's bills to banks

Payments due to the Contractor shall be made to his bank instead of direct to him.

The Contractor shall submit to the Engineer-in-Charge: (1) an authorization in form of a legally valid document such as a power of attorney conferring authority on the bank to receive payments and (2) his own acceptance of the correctness of the amount made out as being due to him by Employer or his signature on the bill or other claim preferred against Employer before settlement by the Engineer-in-Charge of the account or claim by payment to the bank, registered financial, cooperative or thrift societies or recognized financial institutions. While the receipt given by such bank; registered financial, cooperative or thrift societies or recognized financial institutions shall constitute a full and sufficient discharge for the payment, the Contractor shall whenever possible present his bills duly receipted and discharged through his bank, registered financial, cooperative or thrift societies or recognized financial institutions.

Nothing herein contained shall operate to create any rights or equities vis-à-vis Employer in favor of the bank.

12.5 Payment of final bill

The final bill shall be submitted by the Contractor within three months of Completion Date or within one month of the date of issue of Completion Certificate furnished by the Engineer-in-Charge whichever is earlier. In case commissioning is delayed beyond a period of one year from the Physical Completion of the Works, the final bill shall be settled upon completion of the Defect Liability Period, as per clause 16.1(iii), or upon successful commissioning whichever is earlier. No further claims shall be made by the Contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in Charge, will, as far as possible be made within the period specified herein under, the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his representative, complete with account of materials issued by the Employer and dismantled materials.

12.6 Lump sum provisions in a composite tender

When the Contract Price is lump sum in respect of parts of the Works, the Contractor shall be entitled to payment in respect of the items of Works involved or the part of the Works in question at the same rates as are payable under this Contract for such items, or if the part of the Works in question is not in the opinion of the Engineer-in-Charge payable of measurement, the Engineer-in-Charge may at his discretion pay the lump-sum amount entered in the estimate, and the certificate in writing of the Engineer-In-Charge shall be final and conclusive against the Contractor with regard to any sum or sums payable to him under the provisions of the clause.

12.7 Withholding and lien in respect of sums due from Contractor

- (i) Whenever any claim or claims for payment of a sum of money arises out of or under the Contract against the Contractor, the Engineer-in-Charge or the Employer shall be

entitled to withhold and also have a lien to retain such sum or sums in whole or in part from any sum or sums found payable or which may at any time thereafter become payable to the Contractor under the Contract. In the event of the payment from such sums being insufficient to cover the claimed amount, the Employer shall be entitled to withhold and have a lien to retain to the extent of such claimed amount from the security deposit, if any. Further, for the purpose of this clause, the Employer shall be entitled to withhold and also have a lien to retain to the extent of the claimed amount or amounts, from any sum or sums found payable or which may at any time thereafter become payable to the Contractor under any other Contract with the Engineer-in-Charge or the Employer pending finalization of adjudication of any such claim.

- (ii) The sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Employer will be kept withheld or retained as such by the Engineer-in-Charge or Employer till the claim arising out of or under the Contract is determined by the arbitrator (if the Contract is governed by the arbitration clause) or by the competent 'court, as the case may be and that the Contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the Contractor. For the purpose of this clause, where the Contractor is a partnership firm or a limited company, the Engineer-in-Charge or the Employer shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company as the case may be, whether in his Individual capacity or otherwise.
- (iii) The Employer shall have the right to cause an audit and technical examination of the Works and the final bills of the Contractor including all supporting vouchers, abstract, etc., to be made after payment of the final bill. If as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the Contractor under the Contract or any work claimed to have been done by him under the Contract is found not to have been executed, the Contractor shall be liable to refund the amount of over-payment and it shall be lawful for Employer to recover the same from him in the manner prescribed in sub-clause (i) of this clause or in any other manner legally permissible; and if it is found that the Contractor *was* paid less than what was due to him under the Contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by Employer to the Contractor, without any interest thereon. Provided that the Employer shall not be entitled to recover any sum overpaid, nor the Contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Engineer-in-Charge on the one hand and the Contractor on the other under any term of the Contract permitting payment for Works after assessment by the Engineer-in-Charge.

12.8 Rates

12.8.1 The tendered rate (% Item Rate Tender) for all items of the Works shall be considered inclusive of all leads and lifts, unless otherwise specified by BOQ, skilled or unskilled labour & material required for working at all heights and depths, making any shape of the masonry as per the drawings, royalty fee, terminal taxes, octroi, entry tax etc. etc. besides other taxes payable by the Contractor such as GST on work contract and the GST applicable on the goods/material. Nothing extra shall be paid unless otherwise given in the description of item and no extra claim shall be entertained due to any reasons whatsoever on this account.

12.8.2 Nothing extra shall be paid unless otherwise specified on account of cutting of grass, bushes, leveling of undulation in the ground, existence of drain and temporary structures etc. requiring removal and difficulty due to space constraints.

12.8.3 Nothing extra shall be paid for working in foul conditions unless otherwise specified. The tendered rates shall not be subject to any revisions for want of any information.

12.8.4 Nothing extra shall be paid for Works required as per Good Engineering Practice, BIS, manufacturer recommendation even if it is not specifically provided in the Contract.

12.9 Levy / Taxes payable by Contractor

All taxes, duties, levies, GST, etc. in respect of this Contract shall be payable by the Contractor and the Employer shall not entertain any claim whatsoever in this respect.

- (i) The Contractor shall deposit royalty and obtain necessary permit for supply of the red bajri, stone, kankar, etc. from local authorities.
- (ii) Where pursuant to or under any law, notification or order any royalty, cess or the like becomes payable by the Employer and does not any time become payable by the Contractor to the State Government or Local authorities in respect of any material used by the Contractor in the Works, then in such a case, it shall be lawful to the Employer and it will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from dues of the Contractor.

12.10 Taxes

12.10.1 Unless otherwise specified in Special Conditions of Contract, the Contract Price shall be inclusive of all the taxes, duties, GST or any other tax.

13.0 Alterations, Additions & Omissions

13.1 Deviations / Variation Extent and Pricing

13.1.1 The Engineer-in-Charge shall have power:

- (i) to make alteration , omissions , additions , or substitutions in the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and
- (ii) to omit a part of the Works in case of non-availability of a portion of the Site or for any other reasons.

The Contractor shall be bound to carry out the Works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the Contract as if originally provided therein. Any altered, additional or substituted Works which the Contractor may be directed to do in the manner specified above as part of the Works, shall be carried out by the Contractor on the same conditions in all respects including price on which he agreed to do the Works except as hereafter provided.

Instructions for any variations shall be communicated to the Contractor by the Engineer-in-Charge in writing with a copy to the Employer.

13.1.2 The time for completion of the Works shall, in the event of any deviations resulting in additional cost over the Contract Price be extended, if requested by the Contractor, as follows:

- (i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original Contract Price and
- (ii) Upto 25% of the time calculated in (i) above or as may be considered reasonable by the Engineer-in-Charge.

13.1.3 If any extra item of material and/ or labour is involved during execution of work, the Contractor shall have to execute the same as per the direction of Engineer-in-Charge and the

payment shall be made as per applicable DSR plus/ minus Contractor's enhancement as applicable. In case, the extra item of material and/ or labour is not available in the schedule of rate, the Contractor will be paid analyzed rates based on either DSR with Contractor's enhancement (+/-) or prevailing market rates plus 15% Contractor's profit but without Contractor's enhancement.

13.1.4 In case of reduction of scope due to action under clause 13.1.1, the reduction in payments shall be calculated based on schedule of rates for the Contract.

13.2 Foreclosure of Contract due to abandonment or reductions in scope of work

13.2.1 If at any time after issuance of Work Order, the Employer decides to abandon or reduce the scope of the Works for any reason whatsoever and hence not require the whole or any part of the Works to be carried out, the Engineer-in-Charge shall give notice in writing to that effect to the Contractor and the Contractor shall act accordingly in the matter. The Contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the Works in full but which he did not derive in consequence of the fore closure of the whole or part of the Works.

13.2.2 The Contractor shall be paid at Contract rates full amount for Works executed at Site and, in addition, a reasonable amount as certified by the Engineer-in-Charge for the items hereunder mentioned which could not be utilized on the Works to the full extent in view of the foreclosure:

- (i) Any expenditure incurred on preliminary site work, e.g. temporary access roads, temporary labour huts, staff quarters and site office, storage accommodation and water storage tanks.
- (ii) Employer shall not take over Contractor's materials or any part thereof either brought to Site or of which the Contractor is legally bound to accept delivery from suppliers (for incorporation in or incidental to the work). However, the Engineer-in- Charge/ Employer may consider providing cost for such materials as deemed reasonable. The cost shall, however, take into account purchase price, salvage value, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the Contractor.
- (iii) If any materials supplied by Employer are rendered surplus, the same except normal wastage shall be returned by the Contractor to Employer at rates not exceeding those at which these were originally issued less allowance for any deterioration or damage which may have been caused whilst the materials were in the custody of the Contractor. In addition, cost of transporting such materials from Site to Employer's stores, if so required by Employer, shall be paid by the Employer.
- (iv) Reasonable compensation for repatriation of Contractors site staff and imported labour to the extent necessary.

The Contractor shall, if required by the Engineer- in-Charge furnish to him books of account, wage books, time sheets and other relevant documents and evidence as may be necessary to enable him to certify the reasonable amount payable under this condition.

The reasonable amount of items on (i)and (iv) above shall not be in excess of 2% of the cost of the Works remaining incomplete on the date of closure, i.e., total stipulated cost of the Works as per accepted tender less the cost of Works actually executed under the Contract. Provided always that against any payments due to the Contractor on this account or otherwise, the Engineer-in-Charge shall be entitled to recover or be credited with any outstanding balances due from the Contractor for advance paid in respect of any tool, plants and materials and any other sums which at the date of termination were recoverable by the Employer from the

Contractor under the terms of the Contract.

14.1 Changes in Contract Price

Not applicable

14.2 Change in law

14.2.1 “Change in Law” shall mean the occurrence of any of the following:

- (i) the enactment of any new Indian law and its entering into effect;
- (ii) the repeal, modification or re-enactment of any existing Indian law;
- (iii) a change in the interpretation or application of any Indian law by a judgement of a court of record which has become final, conclusive and binding, as compared to such interpretation or application by a court of record prior to the last date of submission of final bid; or
- (iv) any change in the rates of any of the Taxes or royalties on Materials that have a direct financial effect on the Contract;

14.2.2 If as a result of Change in Law, the Contractor suffers any additional costs for the execution of this Contract, save and except as expressly provided for in this clause 14.2 or in accordance with the provisions of this Contract, the Contractor shall, within 30 (thirty) days from the date he becomes reasonably aware of such addition in cost, notify the Employer with a copy to the Engineer-in-Charge of such additional cost due to Change in Law.

14.2.3 If as a result of Change in Law, the Contractor benefits from any reduction in costs for the execution of this Contract, save and except as expressly provided for in this clause 14.2 or in accordance with the provisions of this Contract, the Contractor shall, within 30 (thirty) days from the date he becomes reasonably aware of such reduction in cost, notify the Employer with a copy to the Engineer-in-Charge of such reduction in cost due to Change in Law.

14.2.4 The Contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by Engineer-in-Charge and further shall furnish such other information/document as the Engineer-in-Charge may require from time to time.

14.2.5 Where as a result of Change in Law, the Contractor suffers any additional costs for the execution of this Contract or benefits from any reduction in costs under clause 14.2.2 or 14.2.3 as the case may be, such additional or reduced cost shall be determined by the Engineer-in-Charge, after due consultation with the Employer and the Contractor, and shall be added to or deducted from the Contract Price and the Engineer-in-Charge shall notify the Contractor accordingly, with a copy to the Employer.

14.2.6 Change in Law shall be applicable on original Stipulated Period of Completion and where such period increases for reasons other than those attributable to the Contractor or as defined under clause 10.4.2 only.

15.0 Certificates

15.1 Completion certificate

15.1.1 Within 10 (ten) days of the Physical Completion of the work, the Contractor shall give notice of such completion to the Engineer-in-Charge. Within 30 (thirty) days of the receipt of such notice, the Engineer-in-Charge shall inspect the Works and if there is no defect in the work, shall furnish the Contractor with a Completion Certificate, otherwise a provisional certificate of Physical Completion indicating defects:

- (i) to be rectified by the Contractor and/or

(ii) for which payment will be made at reduced rates, shall be issued.

Provided that no Completion Certificate shall be issued, nor shall the Works be considered to be complete until the Contractor shall have removed from the Site all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the Site and cleaned off the dirt from site, shall have obtained clearance from labour officer as under clause 15.1.2 and not until the Works shall have been measured by the Engineer-in-Charge. If the Contractor shall fail to comply with the requirements of this clause on or before the date fixed for the Physical Completion of work, the Engineer-in-Charge may at the expense of the Contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the Contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

15.1.2 Immediately after Physical Completion of Works, the Contractor shall apply to the labour officer concerned for issue of clearance certificate against the Contract under intimation to the Engineer-in-Charge.

On receipt of information from the Contractor, the Engineer-in-Charge shall also write to the labour officer concerned for issue of the clearance certificate. It shall be stipulated in the letter that the clearance certificate be given within a period of 30 days failing which it shall be presumed that there is no labour dispute against the Contract.

15.1.3 The Completion Certificate of Works referred to in clause 15.1.1 above shall not absolve the Contractor from his liability to make good defects, imperfections and shrinkages or faults, which may appear during the Defects Liability Period as per clause 16.1, arising in the opinion of the Engineer-in-Charge from materials or workmanship being not in accordance with drawings or specifications or instructions of the Engineer-in-Charge. These shall be amended and made good by the Contractor at his own cost. In case of default on the part of the Contractor, to so make good the defects or deficiencies, the Engineer-in-Charge may employ labour, plant and machinery and materials or appoint another agency or Contractor, to amend and make good such defects, imperfections, shrinkages and faults, and all expenses consequent thereto and incidental thereto, shall be borne by the Contractor and shall be recoverable from any moneys due to the Contractor under the Contract including the Performance Guarantee and/ or Security deposit amount or from any moneys payable to the Contractor by the Employer, under any other Contract.

15.2 Completion plans to be submitted by the Contractor

The Contractor shall submit completion plan, as built drawings and O&M (operation and maintenance) manuals, GIS details as required and as applicable within 30 (thirty) days of the completion of the work. In case, the Works involves creation of software, the source code and other user manual shall also be submitted by the Contractor.

In case, the Contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a minimum sum equivalent to 2.5% of the Contract Price or as may be fixed by the Engineer-in-Charge concerned and in this respect the decision of the Engineer-in-Charge shall be final and binding on the Contractor.

15.3 Mobilization Advance

Nil.

16.0 Defect Liability and Maintenance

16.1 Defect Liability Period

(i) The Contractor shall be responsible for all the Defects in the Works or any part thereof, as the case may be, during the execution of the Works and during the defects liability period.

- (ii) The Defect Liability Period for the Works shall be [1] year or as defined as per nature of work from the Completion Date.
- (iii) The Security Deposit, submitted as per clause 6.2, shall be refunded if no defects are noticed during the Defect Liability Period or the Defects pointed out are removed.
- (iv) Contractor shall be responsible for security (watch and ward) of the project assets/ facilities for the period between Completion Date and commissioning.

17.0 Labour Laws

17.1 Recovery of Compensation Paid to Workman

In every case in which by virtue of the provisions sub-section (1) of Section 12, of the Employee's Compensation Act, 1923, Employer is obliged to pay compensation to a workman employed by the Contractor, in execution of the Works, Employer will recover from the Contractor the amount of the compensation so paid; and, without prejudice to the rights of the Employer under sub-section (2) of Section 12, of the said Act, Employer shall be at liberty to recover such amount or any part thereof by deducting it from the Security Deposit or from any sum due to the Contractor whether under this Contract or otherwise. Employer shall not be bound to contest any claim made against it under sub- section (1) Section 12, of the said Act, except on the written request of the Contractor and upon his giving to Employer full security for all costs for which Employer might become liable In consequence of contesting such claim.

17.2 Ensuring Payment and Amenities to Workers If Contractor Fails

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract labour {Regulation and Abolition) Central Rules, 1971, Employer is obliged to pay any amounts of wages to a workman employed by the Contractor in execution of the Works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under clause 17.11 or under the Employer Contractor's Labour Regulations, or under the Rules framed by Employer from time to time for the protection of health and sanitary arrangements for workers employed by Employer's contractors. Employer will recover from the Contractor the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to the rights of the Employer under subsection (2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, Employer shall be at liberty to recover such amount or any part thereof by deducting it from the Security Deposit or from any sum due by Employer to the Contractor whether under this Contract or otherwise Employer shall not be bound to contest any claim made against it under sub- section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the Contractor and upon his giving to the Employer full security for all costs for which Employer might become liable in contesting such claim.

17.3 Labour Laws to Be Complied By the Contractor

The Contractor shall obtain a valid license under the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (Regulation and Abolition) Central Rules 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The Contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986 and the Child Labour (Prohibition and Regulation) Rules, 1988.

Any failure to fulfill this requirement shall attract the penal provisions of this Contract arising

out of the resultant non-execution of the work.

17.4 Minimum age limit for labour

No labour below the age of 18 (Eighteen) years shall be employed on the works.

17.5 Payment of Wages

- (i) The Contractor shall pay to labour employed by him either directly or through sub-Contractors, wages not less than fair wages as defined in the Employer's contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act 1970 and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
- (ii) The Contractor shall, notwithstanding the provisions of any Contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-Contractors in connection with the said work, as If the labour had been immediately employed by him.
- (iii) In respect of all labour directly or indirectly employed in the Works for performance of the Contractor's part of this Contract, the Contractor shall comply with or cause to be complied with the labour regulations made by central government from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorized made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.
- (iv) The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the Contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfillment of the conditions of the Contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the Contract or non-observance of the Regulations.
- (v) Under the provisions of Minimum Wages (Central) Rules 1950, the Contractor is bound to allow to the labours directly or indirectly employed in the Works one-day rest for 6 days continuous work and pay wages at the same rate as for duty. In the event of default the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the Contractor by the Engineer-in-Charge concerned. In the case of Union Territory of Delhi, however, as the all inclusive minimum daily wages fixed under notification of the Delhi Administration No.F.1 2(162) MWO/DAB/43884-91, dated 31-12-1979 as amended from time to time are inclusive of wages for the weekly day of rest, the question of extra payment for weekly holiday would not arise.
- (vi) The Contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum. Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefit its Act, 1961, Factories Act, 1948 and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.
- (vii) The Contractor shall indemnify and keep indemnified Employer against payments to be made under and for the observance of the laws aforesaid and the Employer Contractor's Labour Regulations without prejudice to his right to claim indemnity from his sub- Contractors.

- (viii) The laws aforesaid shall be deemed to be a part of this Contract and any breach thereof shall be deemed to be a breach of this Contract.
- (ix) Whatever is the minimum wage for the time being, or if the wage payable is higher than such wage, such wage shall be paid by the Contractor to the workmen directly without the intervention of jamadar and that jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commission or otherwise.
- (x) The Contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the jamadar from the wage of workmen.

17.6 Safety provisions for labour

In respect of all labour directly or indirectly employed in the Works for the performance of the Contractor's part of this Contract, the Contractor shall at his own expense arrange for the safety provisions as per Employer's safety Code framed from time to time and shall at his own expense provide for all facilities in connection therewith. In case the Contractor fails to make arrangement and provide necessary facilities as aforesaid he shall be liable to pay liquidated damages of Rs.200/- for each event of default subject to a maximum of 5% of Contract Value, and in addition the Engineer-in- Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the Contractor.

17.7 Submission of monthly record of labour

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

- (i) The number of labourers employed by him on the work,
- (ii) Their working hours,
- (iii) The wages paid to them,
- (iv) The accidents that occurred during the said fortnight showing the circumstances under which they happened and the extent of damage and injury caused by them, and
- (v) The number of female workers who have been allowed maternity benefit according to clause 17.9 and the amount paid to them.

Failing which the Contractor shall be liable to pay to Employer a sum not exceeding Rs.1000/- for each default or materially incorrect statement. The decision of divisional officer shall be final in deducting from any bill due to the Contract the amount levied as fine and be binding on the Contractor.

17.8 Compliance with health and sanitary arrangements for workers

In respect of all labour directly, or indirectly employed in the Works for the performance or the Contractor's part of this Contract, the Contractor shall comply with or cause to be complied with all the rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by the Employer and its Contractors.

Further, the Contractor is required to follow the Employer's Safety Code and guidelines published by National Human Rights Commission (N.H.R.C).

17.9 Leave and pay for female workers

Leave and pay during leave shall be regulated as follows:

1. Leave:

- (i) In the case of delivery - maternity leave not exceeding 8 weeks. 4 weeks up to and including the day of delivery and 4 weeks following that day,
- (ii) In the case of miscarriage - up to 3 weeks from the date of miscarriage.

2. Pay

- (i) In the case of delivery - leave pay during maternity leave will be at the rate of the women's average daily earnings, calculated on total wages earned on the days when full time work was done during a period of three months immediately preceding the date on which she gives notice that she expects to be confined.
- (ii) In the case of miscarriage - leave pay at the rate of average daily earning calculated on the total wages earned on the days when full time work was done during a period of three months immediately preceding the date of such miscarriage.

3. Conditions for the grant of Maternity Leave: No maternity leave benefit shall be admissible to a woman unless *she* has been employed for a total period of not less than six months immediately preceding the date on which she proceeds on leave.

4. The Contractor shall maintain a register of maternity (benefit) and the same shall be kept at the place of work.

17.10 Noncompliance with labour rules & regulations

17.10.1 In the event of the Contractor committing a default or breach of any of the provisions of the Employer, Contractor's labour Regulations and model rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and Rules which is materially incorrect, he/they shall, without prejudice to any other liability, pay to the Employer a sum as liquidated damages equal to Rs 200/- for each event of default per day subject to a maximum of 5% of the Contract Value. In the event of the Contractor defaulting continuously in this respect the liquidated damages may be enhanced to Rs.2000/- per event for each day of default subject to a maximum of 5 % of the Contract Value. The decision of the Engineer-in-Charge shall be final and binding on the Contractor.

17.10.2 Should it appear to the Engineer-in-Charge that the Contractor is not properly observing and complying with the provisions of labour regulations and model Rules and the provisions of the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (Regulation and Abolition) Central Rules 1971, for the protection of health and sanitary arrangements for work- people employed by the Contractor (hereinafter referred as "the said Rules") the Engineer-in-Charge shall have power to give notice in writing to the Contractor requiring that the said Rules be complied with and the amenities prescribed therein be provided to the work-people within a reasonable time to be specified in the notice. If the Contractor shall fail within the period specified in the notice to comply with and/observe the said Rules and to provide the amenities to the work-people as aforesaid, the Engineer-in-Charge shall have the power to provide the amenities hereinbefore mentioned at the cost of the Contractor. The Contractor shall erect, make and maintain at its own expense and to approved standards all necessary huts and sanitary arrangements required for its worker on the Site in compliance with the execution of the Works, and if the same shall not have been erected or constructed, according to approved standards, the Engineer-in-Charge shall have power to give notice in writing to the Contractor requiring that the said huts and sanitary arrangement be remodeled and/or reconstructed according to approved standards, and if the Contractor shall fail to remodel or reconstruct such huts and sanitary arrangements according to approved standards within the period specified in the notice, the Engineer-in- Charge shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the Contractor.

17.11 Labour camps and huts

The Contractor shall at his/her own cost provide his/their labour with a sufficient number of huts (hereinafter referred to as the camp). of the following specifications on a suitable plot of

land to be approved by the Engineer-in-Charge. In case adequate space is available, the Contractor shall provide labour camps at site, the Employer shall not charge anything for the same. If the space available is not sufficient to house the labour camp, the Contractor shall arrange the land beyond the Site as per his requirement. The Employer may extend help in getting permissions from the land owning agencies but it shall be the responsibility of the Contractor for arranging the same at his own cost. No excuse whatsoever shall be entertained.

(i)

- a. The minimum height of each hut at the eaves level shall be 2.10m (7 ft.) and the floor area to be provided will be at the rate of 2.7 sq.m. (30 sq.ft.) for each member of the worker's family staying with the labourer.
- b. The Contractor shall in addition construct suitable cooking places having a minimum area of 1.80m x 1.50m (6'x5') adjacent to the hut for each family.
- c. The Contractor shall also construct temporary latrines and urinals for the use of the labourers each on the scale of not less than four per each hundred of the total strength, separate latrines and urinals being provided for women.
- d. The Contractor shall construct sufficient number of bathing and washing places, one unit for every 25 persons residing in the camp. These bathing and washing places shall be suitably screened.

(ii)

- a. All the huts shall have walls of sun-dried or burnt-bricks laid in mud mortar or other suitable local materials as may be approved by the Engineer-in-Charge. In case of sun-dried bricks, the walls should be plastered with mud gobri on both sides. The floor may be kutcha but plastered with mud gobri and shall at least 15cm (6") above the surrounding ground. The roofs shall be laid with thatch or any other materials as may be approved by the Engineer-in-Charge and the Contractor shall ensure that throughout the period of their occupation the roofs remain water-tight.
- b. The Contractor shall provide each hut with proper ventilation.
- c. All doors, windows, and ventilators shall be provided with suitable leaves for security purposes.
- d. There shall be kept an open space of at least 7.2m (8 yards) between the rows of huts which may be reduced to 6m (20 ft.) according to the available of Site with the approval of the Engineer-in-Charge. Back to back construction will be allowed,

(iii) Water Supply: The Contractor shall provide adequate supply of water for the use of labourers.

(iv) The site selected for the camp shall be high ground, removed from Jungle.

(v) Disposal of Excreta: The Contractor shall make necessary arrangements for the disposal of excreta from the latrines by trenching or Incineration, which shall according to the requirements lay down by the Local Health Authorities. If trenching or incineration is not allowed the Contractor shall make arrangements for removal of the excreta through the Municipal Committee/Employer and inform it about the number of labourers employed so that arrangements may be made by such committee/authority for the removal of the excreta. All charges on this account shall be borne by the Contractor and paid direct by him to the Municipality/Employer. The Contractor shall provide one sweeper for every eight seats in case of dry system.

(vi) Drainage - The Contractor shall provide efficient arrangements for draining away a sullage water so as to keep the camp neat and tidy.

(vii) The Contractor shall make necessary arrangements for keeping the camp a sufficiently lighted to avoid accidents to the workers.

(viii) Sanitation - The Contractor (s) shall make arrangements for conservancy and sanitation in the labour camps according to the rules of the Local Public Health and Medical Authorities.

On completion of the Works the Contractor shall remove hutments failing which the Employer will dismantle and clear the site at his risk and cost.

17.12 Employment of Controlled Area Labour Not Permissible

17.12.1 The Contractor shall not employ controlled area labour falling under any category whatsoever on or in connection with the Works or recruit labour from area within a radius of 32 km (20 miles) of the controlled area. Subject as above the Contractor shall employ imported labour only i.e., deposit imported labour or labour imported by Contractors from area, from which import is permitted.

17.12.2 Where ceiling price for imported labour has been fixed by State or Regional Labour Committees not more than that ceiling price shall be paid to the labour by the Contractor.

17.12.3 The Contractor shall immediately remove any labourer who may be pointed out by the Engineer-in-Charge as being a coal mining or controlled area labourer. Failure to do so shall render the Contractor liable to pay to Employer a sum calculated at the rate of Rs.10/- per day per labourer. The certificate of the Engineer-in-Charge about the number of controlled area labourer and the number of days for which they worked shall be final and binding upon all parties to this Contract.

17.12.4 It is declared and agreed between the parties that the aforesaid stipulation in this clause is one in which the 'public are interested within the meaning of the explanation in Section 74 of Indian Contract Act, 1872.

Explanation: Controlled Area means the following areas:

District of Dhanbad, Hazaribagh, Jamtara - a sub Division under Santhal Pargana Commissioner, Districts of Bankura, Birbhum Burdwan District or Bilaspur.

Any other area, which may be declared a Controlled Area by or with the approval of the Central Government.

17.13 Apprentices Act Provisions To Be Complied With

The Contractor shall comply with the provisions of the Apprentices Act, 1961, Apprenticeship Rules, 1992 and other rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the Contract and the Engineer-in-Charge may, in his discretion, cancel the Contract. The Contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

17.14 Labour disputes

17.14.1 The Contractor shall at all the times during the progress of Works take all requisite precautions and use his best endeavors for preventing any riotous or unlawful behavior by or among the workers and other employees at work and shall preserve peace and protection of the inhabitants and the security of property in the neighborhood of the Works.

17.14.2 In case of any disputes with labour (skilled or unskilled) and charges are claimed against the Contractor, the Engineer-in-Charge shall have the full authority to deduct the same from the bill of the Contractor, so as to enable him to settle the disputes.

18.0 Miscellaneous Clauses

18.1 Dispute Resolution

18.1.1 Amicable Resolution

- (i) Save where expressly stated to the contrary in this Contract, any dispute, difference or controversy of whatever nature between the Parties, howsoever arising under, out of or in relation to this Contract (the "Dispute") shall in the first instance be attempted to be resolved amicably with the Employer.

18.2 Corruption or fraudulent practices

18.2.1 Employer defines, for the purposes of this provision, the terms set forth below as follows:

- (i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in Contract execution, and
- (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive them of the benefits of free and open competition;

18.2.2 The Employer will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract.

18.3 Use of Explosives

Subject to the Applicable Laws and the Applicable Permits, the Contractor shall comply with the following:

- (i) the use of explosives by the Contractor shall be subject to the prior approval/authorization of the concerned Government Instrumentality;
- (ii) the Contractor shall at all times take all such safety measures as may be required for the importation, handling, transportation, storage and use of explosives and shall, at all times when engaged in blasting operations, post sufficient warning flagmen to the full satisfaction of the Engineer-in-Charge.
- (iii) the Contractor shall, by a notice in writing, 15 days prior to the blasting operation, notify all parties including Government Instrumentalities, private parties concerned or affected or likely to be concerned or affected by blasting operations for their prior approval; and
- (iv) the Contractor shall pay all license fees and charges which may be required for storage of explosives or in respect of any other matter related thereto.

All operations in which or for which explosives are employed shall be at the sole risk and responsibility of the Contractor and the Contractor shall indemnify the Employer in respect thereof.

18.4 Confidentiality and Publicity

The Contractor shall treat the details of the Contract as private and confidential save in so far as may be necessary for the purpose thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the previous consent in writing of the Employer. Publication of approved articles, photographs or similar materials shall carry acknowledgement to the Employer and state the name of the Engineer-in-Charge. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract the same shall be referred for decision to the Employer, whose decision shall be final.

Any advertising mentioning the subject of this Contract must be approved by the Employer prior to publication.

18.5 Individuals not personally Liable

No member or officer of the Employer nor the representative of Engineer-in-Charge nor any one of the respective staffs or the employees of the Employer shall be in any way personally liable for the acts or obligations of the Employer under the Contract or answerable for any default or omission of the Employer in the observance or performance of any of the acts, matters or things which are herein contained.

18.6 Limitation of Liability

18.6.1 Neither Parties shall be liable to the other Parties for loss of profit, loss of any Contract or for any indirect or consequential loss or damage which may be suffered by the other Parties in connection with the Contract, other than under clause 3.7 (Indemnity by Contractor) and Section 11 (Termination of Contract)

18.6.2 The total Liability of the Contractor to the Employer, under or in connection with the Contract, other than under clause 3.7 (Indemnity by Contractor), Clause 3.12 (Responsibility of damage to property and injury to persons) clause 3.14 (Electricity for construction of Works) and 3.15 (Supply of water) shall not exceed the Contract Price

18.6.3 This clause shall not limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Parties. Further, this clause shall not limit any criminal action that may follow from any action.

18.7 Waiver and Consents Clause

18.7.1 Waiver by either Party of any default by other Party in the observance and performance of any provision of or obligations of or under this Contract

- (i) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Contract;
- ii) shall not be effective unless it is in writing and executed by a duly authorised representative of the Party; and
- iii) shall not affect the validity or enforceability of this Contract in any manner.

18.7.2 Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Contract or any obligation there under nor time or other indulgence granted by a Party to the other Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

18.7.3 Any such waiver or consent may be given subject to any conditions thought fit by the Party giving it and shall be effective only in the instance and for the purpose for which it is given.

PROFORMA OF BANK GUARANTEE FOR PERFORMANCE GUARANTEE

Ref: Bank Guarantee No..... Date.....

To:

SHRI RAM COLLAGE OF COMMERCE

.....

Dear Sir,

1. In consideration of **SHRI RAM COLLAGE OF COMMERCE**, having its Registered Office at -----(hereinafter referred to as the “Company” which expression shall unless repugnant to the context or meaning thereof, include all its successors, administrators, executors) and having entered into a contract dated (hereinafter called the “Contract” which expression shall include all the amendments thereto) with M/s.having its Head/Registered Office at.....(hereinafter referred to as the “Contractor” (which expression unless repugnant to the context or meaning thereof, shall include all its successors, administrators, executors and assigns) and the contract having been unequivocally accepted by the Contractor resulting in a contract bearing No..... dated..... Valued at for (scope of work) and the Company having agreed that the Contractor shall furnish to the Company a performance guarantee for the faithful performance of the entire contract to the extent of **5% (five percent)** of the contract price, i.e. Rs..... (in word) we (bank)..... having its Registered Office at.....(hereinafter referred to as the “Bank” which expression shall unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay on demand to the Company any money or all moneys to the extent of Rs..... (Rupees) in aggregate at any time without any demur, reservation, recourse, contest or protest and/or without any reference to the Contractor. Any such demand made, by the Company on the Bank shall be conclusive and binding notwithstanding any difference between the Company and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We agree that Guarantee herein contained shall be irrevocable and shall continue to be enforceable till it is discharged by the Company in writing.
2. The Company shall have the fullest liberty, without affecting in any way the liability of the Bank under this Guarantee from time to time, to extend the time for performance of the contract by the Contractor, or vary the terms of the Contract. The Company shall have the fullest liberty without affecting this Guarantee to postpone, from time to time, the exercise of power vested in them or of any right which they might have against the Contractor and to exercise the same at any time in any manner and either to enforce, or to forbear from

enforce, any covenants contained or implied in the contract between the Company and the Contractor or any other course or remedy or security available to the Company. The Bank shall not be released of its obligations under these presents by any exercise by the Company of its liberty with reference to matters aforesaid or any of them or by reason of any other act or forbearance of other act or forbearance of other acts of Company or any other indulgence shown by the Company or by any other matter or thing whatsoever, which under law would, but for this provision, have the effect of relieving the Bank.

3. The Bank also agrees that the Company at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the Contractor and notwithstanding any security or other guarantee that Company may have in relation to the Contractor's liabilities.
4. The Bank further agrees that the guarantee herein contained shall remain in full force during the period that is taken for the performance of the contract and it shall continue to be enforceable till all the dues of the Company under or by virtue of this contract have been fully paid and claim satisfied or discharged or till the Company discharges the Guarantee in writing.
5. We further agree that as between us and Company for the purpose of this Guarantee any notice given to us by the Company and any amount claimed in such notice by the Company that the money is payable by the Contractor and any amount claimed in such notice by the company shall be conclusive and binding on us notwithstanding any difference between the Company and the Contractor or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We further agree that this Guarantee shall not be affected by any change in our Constitution or that of the Contractor or in the Constitution of the Company. We also undertake not to revoke this Guarantee during its currency or till the Company discharges the Guarantee in writing.
6. Notwithstanding anything contained hereinabove, our liability under this Guarantee is limited to Rs..... (Rupees) in aggregate and it shall remain in full force upto and including **60 (sixty) days** after unless extended further, from time to time, for such period as may be instructed in writing by the Contractor on whose behalf this Guarantee has been given, in which case it shall remain in full force upto and including 60 (sixty) days after extended date. Any claim under this Guarantee must be received by us before the expiry of the 60 (sixty) days from or before the expiry of the 60 (sixty) days from the extended date. If no such claim has been received by us within the 60 (sixty) days after the said date/extended date, the Company's right under this guarantee will cease. However, if such a claim has been received by us within and upto 60 (sixty) days after the said

date/extended date, all the Company's rights under this Guarantee shall be valid and shall not cease until we have satisfied that claim

Dated this Day of200....

Yours faithfully,

Signature

Name and designation _____

Name of the branch _____

Attorney as per power of Attorney No.....Dated:.....

Note: This Guarantee/Undertaking is required to be stamped as an agreement according to the stamp duty prescribed either in New Delhi.

Affidavit/Indemnity (post Completion Date)

Name of the Work_____

W.O. no. _____ Dt. _____ against C.A. _____

Division-_____

We M/s_____ a company established as proprietorship/ partnership/ private limited do hereby solemnly affirm and declare that the contents given below from S.No. I to VI are correct and nothing has been concealed.

- I. That the above supply/ work order was awarded to us through
(Tender/ without call of tender/ sealed quotation/ spot quotation/ repeat order/ any other mode) on the basis of.....(registered contractor/ manufacturer/ sole distributor dealer/ authorized dealer/ petty contractor)
- II. That there is no abnormality in the rate quoted/ offered for award of this work.
- III. That the purchase of entire quantity of materials supplied/ utilized during execution of work has been done from the(Manufacturer/ authorized dealer/ open market/ local fabricator) as a(Contractor/ manufacturer/ sole distributor or dealer/ authorized dealer/ petty contractor) which meets the department's specifications in all respect.
- IV. That the purchase vouchers submitted along with our bill are genuine.
- V. That we have paid all taxes, duties claimed to the appropriate authorities as per norms.
- VI. That we executed the work/ Supply order strictly as per specifications of work/ Supply order issued to us.

Safety Code

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

- i) All roads and open areas adjacent to the work site shall either be closed or suitably protected
- ii) No electric cable or apparatus which is liable to be a source of danger or cable or apparatus used by the operator shall remain electrically charged.
- iii) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

8.0 All necessary personal safety equipment as considered adequate by the Engineer-in-Charge should be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned: - The following safety equipment shall invariably be provided.

- i) Workers employed on mixing asphalt materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
- ii) Those engaged in white washing and mixing or stacking of cement bags or any material which is injurious to the eyes shall be provided with protective goggles.
- iii) Those engaged in welding works shall be provided with welder's protective eye shields.
- iv) Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- v) When workers are employed in sewers and manholes, which are in active use, the contractors shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public, in addition, the contractor shall ensure that the following safety measures are adhered to
 - a) Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer.
 - b) At least 5 to 6 manholes upstream and downstream should be kept open for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.
 - c) Before entry presence of Toxic gases should be tested by inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.
 - d) Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line, workers should be sent only with Oxygen kit.
 - e) Safety belt with rope should be provided to the workers. While working inside the manholes such rope should be handled by two men standing outside to enable him to be pulled out during emergency.
 - f) The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.
 - g) No smoking or open flames shall be allowed near the blocked manhole being cleaned.
 - h) The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.
 - i) Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge may decide the time up to which a worker may be allowed to work continuously inside the manhole.

- j) Gas masks with Oxygen Cylinder should be kept at site for use in emergency.
- k) Air-blowers should be used for flow of fresh air through the manholes.
Whenever called for portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at least 2 meters away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas that might be present.
- l) The workers engaged for cleaning the manholes/sewers should be properly trained before allowing working in the manhole
- m) The workers shall be provided with Gumboots or non sparking shoes bumphelmets and gloves non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.
- n) Workmen descending a manhole shall try each ladder stop or rung careful before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.
- o) If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.
- p) The extents to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.
- vi) The Contractor shall not employ men and women below the age of 18 years on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precaution should be taken:-
 - a) No paint containing lead or lead products shall be used except in the form of paste or readymade paint.
 - b) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint is dry rubbed and scraped.
 - a) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during and on the cessation of work.

9.0 Contractor shall not employ women and men below the age of 18 on the work of painting with product containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following: principles must be observed for such use:

- White lead, sulphate of lead or product containing these pigment, shall not be used in painting operation except in the form of pastes or paint ready for use.
- Measures shall be taken, wherever required in order to prevent danger arising from the application of paint in the form of spray.
- Measures shall be taken, wherever practicable, to prevent danger arising out of from dust caused by dry rubbing down and scraping
- Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.
- Overall shall be worn by working painters during the whole of working period.
- Suitable arrangement shall be made to prevent clothing put off during working hours being spoiled by painting materials.
- Cases of lead poisoning and suspected lead poisoning shall be notified and shall be subsequently verified by medical man appointed by competent authority of SRCC
- SRCC may require, when necessary medical examination of workers.
- Instructions with regard to special hygienic precautions to be taken in the painting.

- 10.0 When the work is done near any place where there is risk of drowning, all necessary equipments should be provided and kept ready for use and all necessary steps taken for prompt rescue of any person In danger and adequate provision, should be made for prompt first aid treatment of all injuries likely to be obtained during the course of the work.
- 11.0 Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions
- These shall be of good mechanical construction, sound materials and adequate strength and free from patent defects and shall be kept repaired and in good working order.
 - Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.
 - Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding winch or give signals to operator.
 - In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or as means of suspension the safe working load shall be ascertained by adequate means. Every hoisting machine and all parts referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load each safe working load and the condition under which It Is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
 - In case of departmental machines, the safe working load shall be notified by the Electrical Engineer-in-charge. As regards contractors machines the contractors shall notify the safe working load of the machine to the Engineer-in-charge whenever he brings any machinery to site of work and get it verified by the Electrical Engineer concerned.
- 12.0 Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safeguards. Hoisting appliances should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions should be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, Insulating mats, wearing apparel, such as. gloves, sleeves and boots as may be necessary should be provided. The worker should not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.
- 13.0 All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near places of work.
- 14.0 These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at work spot. The person responsible for compliance of the safety code shall be named therein by the contractor.
- 15.0 To ensure effective enforcement of the rules and regulations relating to safety precautions the arrangements made by the contractor shall be open to inspection by the Labour Officer or Engineer-in-Charge of the department or their representatives.
- 16.0 Notwithstanding the above clauses from (1) to (15) there is nothing in these to exempt the contractor from the operations of any other Act or Rule in force In the Republic of India

SAFETY GUIDELINES

Following guideline /instructions should be adhered to in true spirit:-

1. The door may be fixed at the entry of the stair case and the open portion of the stair case of sump well should be protected by grill up to the height of 7 feet and compartments of the sump well should be covered with jallis/grating or should be barricaded properly. Sewage pumping station should be secured by providing and fixing barbed wire fencing over the boundary wall.
2. An inspection register should be placed at the sewage pump house in which all the inspecting officers may record their observations. No unauthorized entry should be allowed.
3. Caution board showing the restricted entry area and name of components and moving mechanical part should be displayed.
4. The entry to all SRCC infrastructures should be restricted to the person /persons authorized by SRCC or having I.D cards issued by the chief security officer.
5. Just after entering the premises do's and don'ts should be displayed at prominent places in all four languages.
6. Even authorized visitors should be provided proper uniform /visitor badges helmet and relevant safety gear and given instruction before showing such infrastructure.

No person below 18 years age should be allowed on the premises where chances of emission of toxic gases are extensive.

**APPEDIX TO GENERAL CONDITIONS OF CONTRACT
(SCHEDULE OF FISCAL ASPECTS)**

NAME OF WORK	Supplying, Laying & Commissioning Water Supply Pipelines from DJB to SRCC.
DATE OF COMMENCEMENT	Within one week of issue of the award letter from Owner.
TIME FOR COMPLETION	60 days
DEFECT LIABILITY PERIOD	12 Months after completion of entire work. During DLP contractor will depute his staff for attending to all types of construction defects included under his scope of contract and rectify the defect free of cost.
AGREED LIQUIDATED DAMAGES	0.1% of the contract sum of work per day of delay subject to maximum of 5% of the contract value.
SECURITY DEPOSIT PERCENTAGE	10% from Gross amount of each bill as per condition of contract. EMD will be adjusted towards Security Deposit.
LIMIT OF SECURITY DEPOSIT	5% of the Gross amount of work.
REFUND OF SECURITY DEPOSIT	100% after virtual completion of work (after making the due deduction against the Performance Guarantee).
PERFORMANCE GURANTEE	5% of the total cost will be retained by SRCC until the DLP of 12 months.
MOBILISATION ADVANCE	No mobilisation advance will be paid
OTHER CONDITION	Getting permission from MCD/authority before the start of work shall be the responsibility of the contractor only, however necessary fee to be deposited for such permission will be paid by SRCC.

Special Conditions of Contract

1. The entire work shall be carried out as per CPWD Specifications (Latest revision with upto-date correction slips.). If the specification for any items are not available in CPWD specification referred above, relevant BIS specification shall be followed. In case BIS specifications are also not available the decision of Engineer-in-charge shall be final.
Wherever any reference to any Indian Standard Specifications occurs in the document referring to this contract, the same shall be inclusive of all the amendments issued thereto or revision thereof, if any, upto the date of receipt of tenders.
2. Samples of all materials required for execution of the work shall got approved from the Engineer-in-charge. Articles classified as first quality by the manufacturer shall be used unless otherwise specified. Preference shall be given to those articles which bear ISI/BIS certification mark. In case articles bearing ISI/BIS certification mark are not available the quality of samples brought by the contractor shall be judged by the standards laid down in the relevant BIS specification. All materials and articles brought by the contractor to the site for use shall conform to the sample approved which shall be preserved till the completion of work.
3. The work shall be carried out in the manner complying in all respects with requirements of relevant bye laws of the local body under jurisdiction of which the work is to be executed as directed by the Engineer-in-charge and nothing extra shall be paid on this account.
4. The Contractor shall carry out performance test for the entire installation as per standard specifications before the work is finally accepted and nothing whatsoever shall be payable to the contractor without such tests.
5. The contractor shall carry out all tests required and in all such cases cost of sample, to and fro carriage and fee for testing etc. shall be borne by the contractor. The Contractor shall be responsible to arrange at his own cost all necessary tools and plants required for the execution of work.
6. The rates of all items of work shall be considered as inclusive of pumping out or bailing out water if required for which no extra payment will be made. This will include water available from any source such as rains, flood, sub-soil water table being high or due to any other cause whatsoever.
7. Contractor will submit running bills on the basis of clear measurements recorded in a 'Measurement Book' (MB), in triplicate with one copy to the Owner and two copies to Engineer-in-charge. The Engineer-in-charge would assess the quality of workmanship for which measurement have been recorded, adherence to specifications / instructions, verify the measurement as recorded in MB and clarify the amount payable.
Under special circumstances the Engineer-in-charge may recommend payment on account of upto 75% of the submitted bill payable before measurement verification, subject to approval of Owner.
8. The Contractor shall furnish the code number allotted by EPFO (Employee Provident Fund Organisation) authority to the college and maintain proper documents of the man power engaged permanently and submit for verification.
9. Contractor shall follow all the relevant laws including labour / PF /ESI / local authorities as applicable in the state of notified from time to time and will be responsible for any liability accrued on this account and keep the Owner indemnified of any liability, whatsoever in connection with the execution of this work.
10. Applicable GST and TDS shall be deducted from contractor bill.

11. Necessary insurance of labour under Workman Compensation Act and building/work including any injuries to labour or damage to building/work on any account shall be got done by Contractor and copy of the same sent to Owner.
12. Contractor shall make his own arrangement for storage of water and electricity for the work at his own cost and generator of suitable capacity to finish the job in time.
13. Quantity of Items are approximate and liable to change to any extent on either side. Any variation in quantities shall not vitiate the contract.
14. Contractor shall not sublet the work to any other contractor or agency without written approval of the Engineer-in-charge.
15. The Owner has right to withdraw any item of work from the contract or add / delete or change the same. Contractor shall make no extra claim for the same.
16. The work shall be completed within the time as per appendix to General Conditions of Contract (GCC). Timely completion is essence of this order and Contractor shall pay liquidated damage @ as per appendix to GCC.
17. No escalation shall be allowed as this is a short term contract.
18. No Mobilisation Advance will be paid.
19. The contractor shall be responsible to obtain all permits from MCD/concerned authority, all Government charges/ Fee shall however to be reimbursed to Contractor on production of original deposit receipt.
20. Tender should be unconditional as conditional tenders are liable to be rejected.
21. Contractor to deposit dismantled 80 mm GI pipe / fittings with college authorities

TECHNICAL SPECIFICATIONS

STANDARD SPECIFICATIONS FOR WORKS IN SHRI RAM COLLAGE OF COMMERCE (With D.I. Material)

1.1 Scope

This specification covers the requirement for manufacturing, supplying, laying, jointing, testing and commissioning of Ductile Iron pipeline and fittings including associated civil works required for the same.

1.2 Standards

The following standards, specifications and codes are part of this specification. In all cases, the latest revision of the codes including all applicable official amendments and revisions shall be referred to. In case discrepancy between this specification and those referred to herein, this specification shall govern.

IS:8329 Centrifugally Cast Ductile Iron pipes for water, gas and sewage

IS:9523 Ductile Iron pipes fittings for pressure pipes for water, gas and sewage

IS:12288 Code of practice for using and laying Ductile Iron Pipes.

IS:638 Sheet rubber jointing and rubber insertion jointing.

IS:1500 Methods for Brinell hardness test for metallic material

IS:5382 Specification for rubber sealing rings for gas mains, water mains and sewers.

IS:3764 Excavation work-code of safety

IS:460 Test Sieves-Part-I

IS-8112 Specifications for 43 grade Ordinary Portland Cement

1.3 Manufacturing and Source for Supply of Ductile Iron Pipes and Fittings

1.3.1 General

(a) The Ductile Iron pipeline should confirm to IS: 8329 and the pipe should be **ISI marked and manufacturer should have valid BIS License.**

(b) The D.I. Pipes, if procured from country other than India, the manufacturer of pipes shall bear ISO certification mark. The manufacturer must have produced D.I. Pipes for a minimum quantity of 40,000 MT per annum in any one year during the last three years. It shall be responsibility of Contractor to arrange testing of pipes including all incidentals at his own cost. The quoted rate shall be inclusive of all duties and levies and nothing extra shall be payable. No foreign exchange shall be payable for the pipe procured and imported from outside the country.

(c) The bidder shall not deviate from the technical specification of pipe materials, fittings, pumps, motors and valves etc. Alternative offers will be out rightly rejected.

(d) All tests specified either in this specification or in the relevant Indian standards specified above shall be performed by the supplier/contractor at his own cost and in presence of Engineer-In-Charge, if desired. For this, sufficient notice before testing of pipes and fittings shall be given to the Engineer-In-Charge.

1.3.2 Materials

(a) The Ductile Iron pipes shall be centrifugally cast (spun) Ductile Iron pipes confirming to the IS: 8329. The pipes used will be with push on joints (rubber gasket joints). The class of pipes to be used shall be of the class K-9/K-7 as specified in bill of quantity.

The pipes shall be coated with zinc and finishing layer of bitumen as per annexure 'C' of IS: 9523 and shall have factory applied centrifugal cement mortar lining inside as per the provisions of appendix 'B' of the IS: 8329.

The pipe shall be supplied in standard length of 5.50 and 6.00-meter length with suitably rounded or chamfered ends. Each pipe of the push on joint variety shall also be supplied with a rubber gasket. The gasket shall conform to IS: 5382.

(b) The Ductile iron fittings shall be manufactured and tested in accordance with IS: 9523. The fittings shall be provided with cement mortar lining inside and outside bitumen coating. The Ductile Iron Fittings shall be of Class K-12/K-14 as specified in BOQ suitable for either push-on jointing or flanged jointing as per the site requirement with PN10 flanges. The Ductile Iron Fittings may preferably be procured from the same manufacturer who will be supplying Ductile Iron Pipes. The fitting may be of the following type as per site requirement:

- Flanged Socket
- Flanged spigot
- Double socket Bends (90°, 45°, 22½°, 11¼°)
- Double socket branch flanged tee
- Double socket taper
- All Flanged Tee
- All Flanged Taper
- Double Flanged Bends (90°, 45°, 22½°, 11¼°)

(c) The rubber gaskets for jointing should preferably be manufactured by the manufacturer of pipes. In case they are not, it will be the responsibility of the manufacturer of pipes to have them manufactured from a suitable manufacturer under its own supervision and have it tested at his/sub contractor's premises as per the contract. The pipe manufacturer will however be responsible for the compatibility and quality of the gaskets.

(d) Alternative to the standard Ductile Iron Fittings, fabricated M.S. fittings with inside cement mortar lining may be used, if necessary. If required, the MS flanges can also be welded to the D.I pipes, as per the procedures laid down by the manufacturer of D.I. Pipes.

1.3.3 Dimensions and Tolerances

The internal diameter thickness and length of barrel, dimensions of pipes and fittings shall be as per the relevant tables of IS: 8329/IS 9523 of different class of pipes and fittings.

1.4 Ductile Iron Pipes

1.4.1 Inspection and testing

The pipes will be subjected to following tests for acceptance:

- Visual and dimensional check as per clause 13 and 15 of IS 8329
- Mechanical Test as per clause 10 of IS 8329
- Hydrostatic test as per clause 11 of IS 8329
- The test reports of the rubber gaskets shall be as per acceptance tests of the IS 5832 and will be in accordance to clause 3.8.

The Sampling shall be as per provisions of the IS 8329.

1.4.2 Marking

All pipes will be marked as per clause 18 for IS 8329 and show below:

- Manufacturer name/stamp
- Nominal diameter
- Class reference
- A white ring line showing length of insertion at spigot end
- SRCC

1.4.3 Packing and Transport:

The pipes should be preferably transported by road from the factory and stored as per the manufacturer specifications to protect damage.

1.5 Specials/Fittings for Ductile Iron Pipes

1.5.1 General

This section covers the general requirements for Ductile Iron (DI) fittings suitable for push-on-joints or flanged jointing to be used with Ductile Iron pipes with push-on-jointing and flanged system.

1.5.2 Supply:

All the DI fittings shall be supplied one rubber ring for each socket. The rubber ring shall conform to IS: 5382 and as per socket profile of pipes. Flanged fittings shall be supplied with one rubber gasket per flange and the required number of nuts and bolts.

1.5.3 Lubricant for Ductile Iron Pipes and Specials:

1.5.4 General:

This section covers the requirements for lubricant for the assembly of Ductile Iron pipes and special suitable for push-in rubber ring joints.

1.5.5 Specification:

The lubricant has to have the following characteristics:

- must have a paste like consistency and be ready for use.
- has to adhere to wet and dry surfaces of DI pipes and rubber rings.
- to be applied in hot and cold weather; ambient temperature 0-50 °C, must be non toxic.
- must be water soluble.
- must not affect the properties of the drinking water carried in the pipes.
- must not have an objectionable odour.
- has to inhibit bacterial growth.
- must not be harmful to the skin.
- must have a shelf life not less than 2 years Acceptance tests. They shall be conducted in line with the provisions of the IS 9523.

1.5.6 Packing:

All the DI fittings shall be properly packed with jute cloth. Rubber rings shall be packed in polyethylene bags. Rubber rings in PE bags and nuts, bolts etc. shall be supplied in separate jute bags.

1.6 Specifications for laying and jointing of Pipe line system for Water Supply:

1.6.1 Preparatory Work:

The contractor will inspect the route along which the pipeline is proposed to be laid. He should observe/find out the existing underground utilities/ construction and propose an alignment along which the pipeline is to be laid. He should make all efforts to keep the pipe as straight as possible with the help of ranging rods. Wherever there is need for deviation, it should be done with the use of necessary special or by deflection in pipe joints (limited to 75% of permissible deflection as per manufacturer). The alignment as proposed should be marked on ground with a line of white chalk and got approved from Engineer-in-charge. The contractor will then prepare an L-section along this alignment showing the location of proposed pipeline. The L-section should be got approved from Site Engineer / Engineer-in-Charge. The position of fittings, valves, should be shown on the plan.

1.6.2 Alignment and the L-Sections:

The alignments, L-section (depth of laying) and location of specials, valves and chambers may be changed at site in co-operation with and after approval of the Engineer-In-Charge. The minimum cover to the top of the pipe shall be 1 m if permitted as per site conditions otherwise as per the direction of engineer-in-charge.

1.6.3 Standards:

Except as otherwise specified in this technical specification, the Indian Standards and Codes of Practice in other latest version, National Building code, CPWD specifications and manual for water supply of GOI shall be adhered to for the supply, handling, laying, installation, and site testing of all material and works.

1.6.4 Tools and Equipment:

The contractor has to provide all the tools and equipment required for the timely, efficient and professional implementation of the work as specified in the various sections of the contract and as specified by the instructions of manufacturers of the pipes and other material to be handled under this contract.

On demand he shall provide to the Engineer-in-Charge a detailed list of tools and equipment available. If in the opinion of the Engineer-in-Charge the progress or the quality of the work can not be guaranteed by the available quantity and type of tools and equipment, the contractor has to provide additional ones to the satisfaction of the Engineer-in-Charge. The contractor will always have a leveling instrument at site.

1.6.5 Handling and Laying of pipes:

1.6.6 Transportation of pipes and specials & Storage:-

The Contractor has to transport the pipes and other materials from manufacturer to the site of laying as indicated by the Engineer-In-Charge. Pipes should be handled with care to avoid damage to the surface and the socket and spigot ends, deformation or bending. Pipes shall not be dragged along the ground or the loading bed of a vehicle. Pipes shall be transported on flat bed vehicles/trailers. The bed shall be smooth and free from any sharp objects. The pipes shall rest uniformly on the vehicle bed in their entire length during transportation. Pipes shall be loaded and

un-loaded manually or by suitable mechanical means without causing any damage to the stacked pipes.

The transportation and handling of pipes shall be made as per IS 12288. Handling instructions of the manufacturers of the pipe shall be followed. All precautions set out shall be taken to prevent damage to the protective coating, damage of the jointing surfaces or the ends of the pipes.

Whatever method and means of transportation is used, it is essential that the pipes are carefully placed and firmly secured against uncontrolled movement during transportation to the satisfaction of Engineer-In-Charge.

Cranes or chain pulley block or other suitable handling and lifting equipment shall be used for loading and un-loading of heavy pipes. However, for pipes up to 400 mm nominal bore, skid timbers and ropes may be used. Where using crane hooks at sockets and spigot ends hooks shall be broad and protected by rubber or similar material, in order to avoid damage to pipe ends and lining. Damage to lining must be repaired before pipe laying according to the instructions of the pipe manufacturer. Pipes shall not be thrown directly on the ground.

When using mechanical handling equipment, it is necessary to employ sufficient personnel to carry out the operation efficiently with safety. The pipes should be lifted smoothly without any jerking motion and pipe movement should be controlled by the use of guide ropes in order to prevent damage caused by pipes bumping together or against surrounding objects.

The pipe should be given adequate support at all times. Pipe should be stored on a reasonably flat surface free from stones and sharp projections so that the pipe is supported through out its length. In storage, pipe racks should provide continuous support and sharp corners of metal rack should be avoided. Pipes should not be stacked in large piles for all pipes and especially under warm temperature conditions. Socket and Spigot pipes should be stacked in layer with sockets placed in alternate ends of the stack to avoid lop sided stacks.

Pipes should not be stored inside another pipe. On no account the pipes should not be stacked more than 1.5 m high and pipes of different sizes and classes should be stacked separately. The ends of the pipes should be protected from abrasion.

The Contractor shall provide proper and adequate storage facilities to protect all the materials and equipments against damage from any cause whatsoever and in case of any such damage/theft, the Contractor shall be held responsible.

1.6.7 Pipe trench:

1.6.7.1 Trench excavation:

The trench excavation of pipeline shall be in accordance with IS 12288. Pipe trenches shall be excavated to the lines and levels shown on the drawings or as directed by the Engineer-In- Charge. The depth of the excavated trench shall be given in the drawings or as directed by the Engineer-in-Charge. The width of the trench at bottom between the faces or sheeting shall be such as to provide 200 mm clearance on either side of the DI pipe.

The depth should be sufficient to provide cover not less than 1000 mm so that the pipeline for protection against traffic loads. It may be necessary to increase the depth of pipeline to avoid land drains or in the vicinity of roads, railways or other crossings. Care should be taken to avoid the spoil bank causing an accumulation of rainwater.

The bottom of the trench shall be trimmed and leveled to permit even bedding of the pipes. It should be free from all extraneous matter, which may damage the pipe or the pipe coating. Additional excavation shall be made at the joins of the pipes, so that the pipe is supported along its entire length.

All excavated material shall be stacked in such a distance from the trench edge that it will not endanger the work or workmen and it will avoid obstructing footpaths, roads and drive ways. Hydrants under pressure, surface boxes, fire or other utility controls shall be left unobstructed and accessible during the construction work. Gutters shall be kept clear or other satisfactory provisions made for street drainage and natural watercourses shall not be obstructed.

To protect persons from injury and to avoid damage to property, adequate barricades, construction signs, torches, red lanterns and guards, as required, shall be placed and maintained during the progress of the work and until it is safe for traffic to use the roadways. All materials,

piles equipment and pipes which may serve as obstruction to traffic shall be enclosed by fences or barricades and shall be protected by illuminating proper lights when the visibility is poor.

As far as possible the pipe line shall be laid below existing services, like water and gas pipes, cables, cable ducts and rains but not below sewer, which are usually laid at greater depth. Where it is unavoidable, pipe line should be suitably protected. A minimum clearance of 150mm shall be provided between the pipeline and such other services.

Trees, shrubbery fences, poles and all other property and surface structures shall be protected. Tree roots shall be cut within a distance of 50cm from pipe joints in order to prevent roots from entering them. Temporary support, adequate protection and maintenance of all underground and surface structures, drains, sewers and other obstructions encountered in the progress of the work shall be provided. The structures which will be disturbed, shall be restored after completion of the work.

Where water forms or accumulates in any trench the Contractor shall maintain the trench free of water during pipe laying.

Wherever necessary to prevent caving, trench excavations in soils such as sand, gravel and sandy soil shall be adequately sheeted and braced. Where sheeting and bracing are used, the net trench width after sheeting shall not be less than that specified above. The sides of the excavation shall be adequately supported at all times and, except where described as permit under the Contract, shall be not battered.

The Engineer-In-Charge in co-operation with the Contractor shall decide about the sheeting/bracing of the trench according to the soil conditions in a particular stretch and taking into account the safety requirements of the Contractor's and Engineer's staff. Generally, safety measures against caving have to be provided for trenches with vertical walls if they are deeper than 2.0 m.

1.6.7.2 Trench excavation to commensurate with the laying progress:

The work of trench excavation should be commensurate with laying and jointing of the pipeline. It should not be dug in advance for a length greater than 500 m ahead of work of laying and jointing of pipeline unless otherwise defined by the Engineer-In-Charge. The contractor has to ensure the following:

- Safety protections as mentioned above, have to be incorporated in the work process
- Hindrances to the public have to be minimized
- The trench must not eroded before the pipes are laid
- The trench must not be filled with water when the pipes are laid
- The trench must not be refilled before laying of the pipes.

The bed for the laying of the pipes has to be prepared according to the L-Section immediately before laying of the pipes.

1.6.7.3 Bedding of the pipes:

The trench bottom shall be even and smooth so as to provide a proper support for the pipe over its entire length, and shall be free from stones, lumps, roots and other hard objects that may injure the pipe or coating. Hole shall be dug in the trench bottom to accommodate sockets so as to ensure continuous contact between the trench and the entire pipe barrel between socket holes. The requirement of other type of bedding for certain/complete length of pipes may also be checked on the drawings issued for the same.

1.6.8 Laying and jointing of pipes:

1.6.8.1 General

The pipes will be cleaned in the whole length with special care of the spigot and sockets on the

inside/outside to ensure that they are free from dirt and unwarranted projections. The whole of the pipes shall be placed in position singly and shall be laid true to profile and direction of slope indicated on longitudinal sections. The pipes shall be laid without deflection in a straight alignment between bends and between high and low points. Vertical and horizontal deflection between individual pipes needs the approval of the Engineer-In-charge. In no case the deflection shall be more than 75% of those recommended by the manufacturer.

Before pipes are jointed they shall be thoroughly cleaned of all earth lumps, stones, or any other objects that may have entered the interior of the pipes, particularly the spigot end and the socket including the groove for the rubber ring. The Contractor shall not leave a gap for fittings and shall lay line in a continuous stretch.

Pipes and related specials shall be laid according to the instructions of the manufacturers and using the tools recommended by them.

Cutting of pipes shall be reduced to a minimum required to conform to the drawings. Cutting has to be made with suitable tools and according to the recommendations of the manufacturer. The spigot end has to be chamfered again at the same angle as the original chamfered end. Cutting shall be perpendicular to the center line of the pipe. If there is no mark for the insertion depth on the spigot ends of the (cut) pipe it shall be marked again according to the instructions of the manufacturer.

Before pipes are jointed they shall be thoroughly cleaned of all earth lumps, stones or any other objects that may have entered the interior of the pipes, particularly the spigot end and the socket including the groove for the rubber ring. End caps are removed only just before laying and jointing.

All specials like bends, tees etc. and appurtenances like sluice or butterfly valves etc. shall be laid in synchronization with the pipes. The Contractor has to ensure that the specials and accessories are ready in time to be installed together with the pipes.

At the end of each working day and whenever work is interrupted for any period of time, the free ends of laid pipes shall be protected against the entry of dirt or other foreign matter by means of approved plug or end caps.

When pipe laying is not in progress, the open ends of installed pipe shall be closed by approved means to prevent entrance of trench water and dirt into the line.

1.6.8.2 Laying and jointing of DI pipes

Pipe should be lowered into the trench with tackle suitable for the weight of pipes. For smaller sizes, upto 200 mm nominal bore, the pipe may be lowered by the use of ropes but for heavier pipes suitable mechanical equipment have to be used.

All construction debris should be cleared from the inside of the pipe either before or just after a joint is made. This is done by passing a pull-through in the pipe, or by hand, depending on the size of the pipe. All persons should vacate any section of trench into which the pipe is being lowered.

On gradients of 1:15 or steeper, precautions should be taken to ensure that the spigot of the pipe being laid does not move into or out of the socket of the laid pipe during the jointing operations. As soon as the joint assembly has been completed, the pipe should be held firmly in position while the trench is back filled over the barrel of the pipe.

The designed anchorage shall be provided to resist the thrusts developed by internal pressure at bends, tees, etc.

Where a pipeline crosses a watercourse, the design and method of construction should take into account the characteristics of the watercourse to ascertain the nature of bed, scour levels, maximum velocities, high flood levels, seasonal variation, etc., which affect the design and laying of pipeline.

The assembly for the pipes shall be made as recommended by the pipe manufacturer and using the suitable tools.

The socket and spigot ends of the pipes shall be brushed and cleaned. The chamfered surface and the end of the spigot end have to be coated with a suitable lubricant recommended by the manufacturer of the pipes. Oil, petroleum based oils, grease or other material, which may damage the rubber gasket, shall not be used as lubricant. The rubber gasket shall be inserted into the

cleaned groove of the socket. It has to be checked for correct positioning.

The two pipes shall be aligned properly in the pipe trench and the spigot end shall be pushed axially into the socket either manually or with a suitable tool specially designed for the assembly of pipes and as recommended by the manufacturer. The spigot has to be inserted up to the insertion mark on the pipe spigot. After insertion, the correct position of the socket has to be tested with a feeler blade.

Deflection of the pipes, if any shall be made only after they have fully been assembled. The deflection shall not exceed 75% of the values indicated by the pipe manufacturer.

For ease of laying, the pipes shall be laid with socket facing the direction in which the work is progressing. For pipes on slope, the socket should be laid with socket facing uphill.

1.6.9 Anchoring of the pipeline:

Thrust blocks shall be provided at each bend, tee, taper, end piece to prevent undue movements of the pipeline under pressure. They shall be constructed as per designs submitted and approved by Engineer-In-Charge, according to the highest pressure during operation or testing of the pipes, the safe bearing pressure of the surrounding soil and the friction coefficient of the soil.

1.6.10 Testing of Pipelines:

1.6.11.1 Sectional tests

After laying and jointing the pipeline shall be tested for tightness of barrels and joints, and stability of thrust blocks in sections approved by the Engineer-In-Charge. The length of the sections depends on the topographical conditions. Preferably the pipeline stretches to be tested shall be between two chambers (air valve, scour valve, bifurcation, other chamber). The sectional testing shall however depend on the progress of the work and the feasibility as per site conditions. The engineer-in-charge may however decide in favor of testing of pipe line in full and final if site conditions so permits.

The contractor himself shall arrange the water required for testing. The Contractor shall fill the pipe and compensate the leakage during testing. The Contractor shall provide and maintain all requisite facilities, instruments, etc. for the field-testing of the pipelines. The testing of the pipelines generally consists in three phases: preparation, pre-test/saturation and test, immediately following the pre-test. Generally, the following steps are required which shall be monitored and recorded in a test protocol if required:

- Complete setting of the thrust blocks.
- Partial backfilling and compaction to hold the pipes in position while leaving the joints exposed for leakage control
- Opening of all intermediate valves (if any)
- Fixing the end pieces for tests and after temporarily anchoring them against the soil (not against the preceding pipe stretch)
- At the lower end with a precision pressure gauge and the connection to the pump foreestablishing the test pressure
- At the higher end with a valve for air outlet
- If the pressure gauge cannot be installed at the lowest point of the pipeline, an allowance in the test pressure to be read at the position of the gauge to be made accordingly
- Slowly filling the pipe from the lowest point(s).
- The water for this purpose shall be reasonably clear and free of solids and suspended matter.
- Complete removal of air through air valves along the line.
- Closing all air valves and scour valves.
- Slowly raising the pressure to the test pressure while inspecting the thrust blocks and the temporary anchoring.
- Keeping the pipeline under pressure for the duration of the pre-test/saturation of the lining by adding make-up water to maintain the pressure at the desired test level. Make up water to be

arranged by Contractor himself at his own cost.

- Start the test by maintaining the test pressure at the desired level by adding more make-up water; record the water added and the pressure in intervals of 15 minutes at the beginning and 30 minutes at the end of the test period.
- Water used for testing should not be carelessly disposed off on land, which would ultimately find its way to trenches.

- The testing conditions for the pipelines shall be as per the test pressures and condition laid out in IS

8329 for DI pipes.

- The pipeline stretch will pass the test if the water added during the test period is not exceeding the admissible limits. No section of pipe work shall be accepted by the Engineer-in-Charge until all requirements of the test have been obtained.

On completion of a satisfactory test any temporary anchor blocks shall be broken out and stop ends removed. Backfilling of the pipeline shall be completed.

1.6.11.2 Leakage Test

The testing conditions for the pipelines are summarized as follows:

- Maximum hydrostatic test pressure for DI K-7 pipes shall be 1.5 times working Pressure in the pipeline or 10Kg/cm² whichever is maximum.

The method of filling the pipeline with water shall be approved by the Engineer-In-Charge. The length under test shall be filled making certain that all the air is displaced through an air valve installed at the top of blank flange situated at the high end of the line. The length shall remain under constant moderate pressure 10 to 20 m of head of water, for a period of several hours until the pressure can be maintained without additional pumping.

The pressure shall then be slowly increased at a maximum rate of 10 m per minute to the full test pressure and pumping discontinued for a 3 hours or until the pressure has dropped by 10 m, whichever occurs earlier. The quantity of water pumped to restore the pressure shall be the measure of leakage from discontinuation of pumping until its resumption.

The pipe length shall pass the test if the leakage is not more than 1.00 liters per mm diameter per kilometer per 24 hours for each 100 m head of pressure applied and the full test pressure has been unstained for at least 3 hours.

If it is required to test pipeline with a free end, it is necessary to provide temporary support against the considerable end thrust developed by the application of the test pressure. The end support can be provide by inserting a wooden beam or similar strong material in a short trench excavated at right angle to the main trench and inserting suitable packing between the support and pipe end.

The pipeline stretch will pass the test if the water added during the test period is not exceeding the admissible limits. No section of the pipe work shall be accepted by the Engineer-in-Charge until all requirements of the test have been obtained.

On completion of a satisfactory test any temporary anchor blocks shall be broken out and stop ends removed. Backfilling for the pipeline shall be completed.

1.6.11.3 Failure to pass the test.

All pipes or joints which are proved to be in any way defective shall be replaced or remade and re-tested as often as may be necessary until a satisfactory test shall have been obtained. Any work, which fails or is proved by test to be unsatisfactory in any way shall be redone by the Contractor. No payments shall be made against replacement or remade and retested pipeline.

1.6.11 Flushing and disinfecting of pipelines.

After testing and commissioning, the contractor shall flush the pipes with a velocity not less than 1

m/s or as approved by the Engineer-In-Charge. Disinfection of drinking water pipelines shall be done as directed by Engineer-In-Charge.

1.6.12 Backfilling of the pipe trench:

For the purpose of backfilling the depth of trench shall be considered as divided into the following three Zones from the bottom of the trench to its top:

Zone I: From the bottom of the trench to the level of the centre line of pipe.

Zone II: From the level of the centre line of the pipe to a level 300mm above the top for the pipe.

Zone III: From a level 300mm above the top of the pipe to the top of the trench.

Backfilling shall be done with sand, fine gravel or other approved material. Backfilling and compaction shall be done by hand or approved mechanical methods in layer of 150mm. The compacted density shall be not less than 90% of maximum dry density at optimum moisture content of the surrounding material.

Where the excavation is made through permanent pavement, curbs, paved footpaths or where such structures are undercut by excavation, the entire backfill to the sub-grade of the structures shall be made with sand in accordance with IS:12288.

The excavated material may be used for backfill in the following cases, provided it complies with IS 12288 Clause 4.11.1.

- (a) In Zone III: In cases where settlement is unimportant the backfill shall be neatly rounded over the trench to a sufficient height to allow for settlement to the required level.
- (b) In any Zone, when the type of backfill material is not indicated or specified, provided that such material consists of loam, clay, fine gravel or other materials which are suitable for back filling in the opinion of the Engineer-in-Charge.

The backfilling of pipe trench should be done as approved by Engineer-In-Charge and as per the provisions of IS: 12288.

1.6.13 Sequence of works for ensuring good pipe laying

1.6.13.1 The required fitting, valves and jointing material should be carefully worked out in beginning. This material should be received before excavation/laying of the pipeline and stored as per the direction of manufacturer or as direction given elsewhere in this manual on standards.

1.6.13.2 The pipe should be received on site only after the above fittings, valves and material for joints has been received and all necessary preparation for laying has been made.

1.6.13.3 The material received should be checked for inspection certification as per contract and damage during transportation. All damaged material should be separated and not used.

1.6.13.4 The pipe received should be stored strictly as per directions of the manufacture or as mentioned elsewhere in this specification or manual/standard.

1.6.13.5 The pipe and other material should be again inspected for any damage before use in trench.

1.6.13.6 The fittings and valves should be installed in sequence with the laying of pipes without leaving any gap.

1.6.13.7 It is desirable to lay the pipeline from the end from where it can be connected to the water source to enable regular flushing of laid pipes.

1.6.13.8 The entry of dirt or any foreign material in the pipe should be religiously prevented.

1.6.13.9 Each joint should be carefully checked for its completeness before covering up.

1.6.13.10 There should be a commensurate progress in trench excavation, laying and jointing of pipes, fittings, valves etc and testing of laid pipes in sections so as to complete testing of all pipes

in quick follow up of completing laying and jointing.

1.7 Pillars for ductile iron pipes

In case of unstable subsoil or in case of ductile iron pipes laid above ground they shall be laid on pillars. Each pipe is supported at plain end and behind the socket. One pillar shall support the socket end of one and the plain end of other pipe. The pillars shall be of Cement Concrete and shall be founded on solid soil, not subject to erosion by wind or water. The foundation of the pillars has to be calculated according to the soil conditions.

The top of the pillar shall form two saddles for the pipe having the same radius as pipe. The socket will be lying free between the two saddles. The pipes shall be laid on a coat of polyethylene of 2mm thickness, put on mortar. It has to be ensured that the spigot end of the pipe is supported by the saddle and does not unduly compress the rubber ring in the lower part. Each pipe is fixed by one adjustable galvanized steel spanner, fixed to the pillar with anchor bolts.

In case of vertical deviations the pipes shall be protected against uplift by additional reinforced clamps of mild steel. In this case, the design of the pillar has to be made taking in account these uplift forces and design will be given by Contractor.

1.8 Thrust Blocks

The thrust blocks shall be of plain cement concrete on site. This should be as per design and drawing to be given by the employer. The thrust blocks shall be cast directly against the undisturbed soil. If this is not possible, the backfilled soil at the contact surface shall be compacted well to full satisfaction of Engineer-In-Charge so that anchor block is not displaced during operation and testing.

1.9 Backfilling around chambers and thrust blocks

After the completion of chambers and thrust blocks the space between the structure and the Excavation shall be backfilled with compacted material. Such backfill shall be placed in layers of 15 cm measured before compaction, wetted, if necessary, to optimum moisture and compacted well as per instruction of Engineer-In-Charge.

1.10 Other Civil and Related Works

1.11 Crossing of existing Distribution Pipes and connecting pipes

The work shall be carried out as per the directions of Engineer-In-Charge.

Existing transmission and distribution pipes and connecting pipes of standpipes have to be protected during the laying of the pipes. In case of impossibility of deviation the pipes have to be replaced according to the instructions of the Engineer-in-Charge.

The contractor has the full responsibility in case of destruction of pipe due to inattention of his staff. All cost for the reinstatement of the original status of the pipes in case of damage has to be borne by him.

1.12 Poles of electrical or telephone lines

The contractor has the full responsibility in case of destruction of lines or poles due to inattention of his staff. All cost for the reinstatement to the original status of the lines has to be borne by contractor.

1.13 Testing and Commissioning

1.13.1 Commissioning

After successful pipe laying and other pre-commissioning tests after physical completion, the

pipeline shall be commissioned by the Contractor. Dynamic commissioning shall be made in conjunction with or after the commissioning of the respective system.

During testing/commissioning, the contractor shall supply all material and labour to supervise, adjust, test, repair and do all things necessary to maintain the testing/commissioning. This shall include labour on a 24 hour-a-day basis during the test period and for such other period of continuous operation as the Engineer-in-Charge may consider necessary to establish the efficient operation of the cluster distribution system.

If any test result shows noticeable variation from the specification requirements for the system the Contractor shall immediately take steps to rectify the deficiency without any extra cost.

The Contractor shall test and commission the system. On satisfactory testing, the system shall be taken over by the Engineer-In-Charge and a taking-over certificate shall be issued by the Engineer-In-Charge, provided all defects and/or deficiencies noticed are rectified to the satisfaction of the Engineer-In-Charge.

Generally, the timing of most of the commissioning tests will depend on the availability of the respective pumps, the water and power availability at the pumping station and the completion of the reservoir.

Should the supply of water from the pumping station fail or should any other event beyond the Contractor's control interfere, the commissioning shall be during such a number of operational periods as the Engineer-In-Charges may consider equivalent. Any repairs or replacement require during this period shall be done by the Contractor.

The Contractor shall allow for commissioning to be conducted at any time during the commissioning period without extra charges under the Contract.

- no leaks in pipes, joints, specials and valves
- all valves are properly installed and operational
- execution of the entire work including finishing according to the drawings and the specifications
- submission of as built drawings

1.14 Other Services:

Contractor shall take the necessary precautions to avoid the damage to other services such as water supply lines, telephone cables, electrical cables, storm water drains etc. in case of any damages to any of the services, contractor shall be responsible for restoring the facilities in bare minimum time at his own cost.

BOQ- 01

Replacement of damaged/ rusted / Dysfunctional existing 80mm dia G.I. underground Water Supply Pipeline by 100 mm dia DI underground Water Supply Pipeline, approximately 450 Metres length, from DJB Main pipeline at Patel Chest Institute Chowk to the receiving tank at SRCC, University of Delhi, Delhi.

(Contractor to deposit dismantled 80 mm GI pipe / fittings with college authorities)

S. No.	Description of Item	Qty	Unit	Rate (Rs)	Amount (Rs)
1.	Cutting of bituminous road and taking out the soiling , metalling including sorting , screening and stacking within a lead of 50 m including cost of barricading and chowkidar.	7.00	Cum	519.00	3,633.00
2.	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in -charge. Nominal concrete 1:3:6 or richer mix (including equivalent design mix)	34.00	Cum	997.05	33,899.70
3.	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation, trenches or drains etc. , including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. Disposal earth to be levelled and neatly dressed. All kind of soil.	255.00	Cum	166.40	42,432.00
4.	Providing and laying S and S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 : 100 mm dia Ductile Iron Class K-7 pipes	450.00	Meter	926.30	4,16,835.00
5.	Providing push-on-joints to Centrifugally (Spun) Cast Iron Pipes or Ductile Iron Pipes including testing of joints and the cost of rubber gasket : 100 mm dia	93.00	Joint	65.10	6,054.30
6.	Providing and laying D.I. specials of class K-12 suitable for push-on jointing as per IS : 9523 : Up to 600 mm dia	0.66	Quintal	15,394.40	10,160.30
7.	Providing and laying D.I. Specials of Class K - 12 suitable for mechanical jointing as per IS : 9523 : Up to 600 mm dia	1.34	Quintal	16,207.45	21,717.98
8.	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately): 100 mm diameter Class I	3.00	Each	3,317.55	9,952.65
9.	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with	3.00	Each	6,849.60	20,548.80

	C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design : With common burnt clay F.P.S.(non modular) bricks of class designation 7.5, complete in all respect.				
10.	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main : 50 mm nominal bore, complete in all respect.	1.00	Each	727.40	727.40
11.	Providing pumps for pumping out water.	5.00	Shift	696.90	3,484.50
12.	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	255.00	Cum	125.75	32,066.25
13.	Carriage of materials by Mechanical Transport including loading, unloading and stacking Lime, moorum, building rubbish etc. lead upto 5 Km.	40.00	Cum	119.33	4,773.20
14.	Providing & Fixing 1.6m high corrugated G.I. Sheets barricading supported on safeda ballies 100mm dia Two metre high placed at 2.5m c/c corrugated G.I. sheets fixed with nails of required length and dia to safeda ballies i/c excavating holes of size 0.3x0.3x0.4m getting out the excavated soil and then returning the soil i/c consolidating by ramming and watering etc. all complete i/c disposal of surplus excavated earth with in a lead of 50m, lift up to 1.5m and painting on full surface of C.G.I. Sheet (on one side with bright paint of red & white colour in vertical strips 0.3m wide alternately as directed by Engineer-in-Charge.	1050.00	Sqm	34.60	36,330.00
15.	Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size) in pavements, laid to required slope and camber in panels as required including consolidation finishing and tamping complete.	34	Cum	5,503.80	1,87,129.20
	TOTAL				8,29,744.28

SUMMARY OF QUOTED RATE

S. No.	Name of Work	Quoted percentage rate (+/-) applicable on the mentioned item rates in the BOQ-01 (INCLUSIVE OF ALL TAXES)
1.	Replacement of damaged/ rusted / Dysfunctional existing 80mm dia G.I. underground Water Supply Pipeline by 100 mm dia DI underground Water Supply Pipeline, approximately 450 Metres length, <u>from DJB Main pipeline at Patel Chest Institute Chowk</u> to the receiving tank at SRCC, University of Delhi, Delhi. (Contractor to deposit dismantled 80 mm GI pipe / fittings with college authorities)	

Layout plan

