



FIRE FIGHTING HYDRANT SYSTEM WORKS AT
CIRCLE OFFIC BUILDING, JAGAMARA, BHUBANESWAR

NOTICE TYPE	:	DOMESTIC TENDER NOTICE
AUTHORITY TYPE	:	PUBLIC SECTOR BANK
DATE OF PRE BID MEETING	:	21.05.2021 AT 11 AM
LAST DATE FOR SUBMISSION OF TENDER	:	29.05.2021 BY 3PM
TIME AND DATE OF OPENING OF TECHNICAL BID	:	29.05.2021 AT 4PM
EARNEST MONEY DEPOSIT	:	Rs.24,000/- by way of crossed Demand Draft of a Scheduled Bank drawn in favour of Canara Bank Circle Office, Bhubaneswar payable at Bhubaneswar.
ESTIMATED AMOUNT	:	Rs.24.00 Lakhs

ISSUED BY

PREMISES AND ESTATE SECTION

CIRCLE OFFICE, JAGAMARA, BHUBANESWAR- 751019

Ph: 0674-2353123

e-mail: pecobhu@canarabank.com

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NOTICE INVITING TENDERS

Canara Bank, Circle Office, Bhubaneswar invites sealed bids from eligible & experienced Firms / Companies in a “TWO BID CONCEPT” for the work of “**Fire fighting Hydrant System works at Circle office building, Jagamara,Bhubaneswar**”.

1) Details of the Tender:

Name of the Work	Firefighting Hydrant works at Circleoffice building,Bhubaneswar.
Place	Canara Bank, Circle office, Plot No-1556P/1561P, Jagamara, Khandagiri, Bhubaneswar-751030
Estimated cost of the works	Rs.24.00 Lakhs
Earnest Money deposit	Rs.24,000/- by way of Demand Draft of a Scheduled Bank drawn in favour of Canara Bank Circle Office ,Bhubaneswar payable at Bhubaneswar.
Period of completion	60 days from the date of issue of work order
Date of Pre bid meeting	On 21.05.2021 at 11AM
Date of Issue of Tender documents (hard copy)	From 28.04.2021 to 28.05.2021 in between 10 AM to 5 PM on working days
Tender documents (soft copy)	Can be downloaded free of cost from Canara Bank's web site https://canarabank.com/english/announcements/
Last date and time for submission of the tender	Sealed envelopes to be submitted on or before 29.05.2021 by 3PM to the office of “ The General Manager, Premises & Estate Section, Circle office, 1556P/1561P, Jagamara ,Khandagiri, Bhubaneswar-751030
Date and time of Opening of the Tender - Technical bids	Technical Bid of Tender will be opened on 29.05.2021 at 4PM

2) Eligibility Criteria : Contractors who fulfill the following requirements are eligible to apply:

The tenderer should not have blacklisted by any organization / institution and Should submit a declaration on letter head confirming the same.

SI No.	Criteria	Documents Required
1.	The contractor should be a registered with CPWD or State PWD or MES or Railways or such other Government organizations or Registered in Public sector units or Public sector Bank's or Financial institutions or Reputed Corporate companies, MNCs, IT companies as Fire alarm/ Fire fighting works contractor.	A copy of valid registration certificate from respective authorities.
2.	The Contractor should have minimum of 05 (Five) years' experience in the field as on 31.03.2021.	Copy of Registration of the Firm or Copy of incorporation. Atleast one copy of the work order from the clients prior to 31.03.2021 .
3.	Bidder should have a minimum of Rs 30.00 Lakhs annual average turnover per year during last three financial years. i.e. 2018-19, 2019-20, 2020-21 from the construction related business.	Audited balance sheet and P&L account for years mentioned and certificate from the Chartered Accountant. In addition to that, tenderer should satisfy the following financial conditions: The Tenderer should not have suffered any financial loss for more than 1 year during the last 3 years ending 31/03/2021.
4.	The Tenderer should have executed any of the following work in a single contract during the last Seven (7) years ending with 31.03.2021 for at least, One (1) similar work costing Rs.19.00 LAKHS (80% of Tender value) OR Two (2) similar works each costing Rs.12.00 LAKHS	Order copies and satisfactory completion certificates clearly indicating the cost & nature of work executed, date of commencement &

	<p>(50% of Tender value)</p> <p style="text-align: center;">OR.</p> <p>Three (3) similar works each costing Rs.9.00 LAKHS</p> <p>(40% of Tender value)</p>	<p>completion issued by the Clients.</p> <p>Note: The amount of works executed during previous years shall be increased by 5 % every year from the date of actual completion to bring it to the present value.</p>
5.	The contractor must have valid GST registration, PAN number.	Copy of the GST registration certificate and copy of PAN card.
6	The contractor must have Office in Bhubaneswar	The copy of proof like Registration of Office, Copy of Electricity Bill in favor of Firm, Municipal Taxes, other statutory certificate pertaining to Office Address Proof.

3) Tenders documents can be collected on payment of stipulated cost between the dates mentioned in the Notice Inviting Offer (NIO) during the working hours every day except on Sundays and Public Holidays, at Premises & Estate section, Canara Bank, Circle Office,Bhubaneswar.

4) Alternatively tender documents can be downloaded from the banks **web site free of cost**. Tenderers who down load the tender documents from the web site need not pay the cost of the Tender documents. The Tender documents shall be in 12 size font & A-4 size paper and neatly bounded (hard bound / spiral bound) in two separate books (i.e. Technical bid and Financial bid) and submitted as detailed in clause 10below.

5) Tenders documents consists of Notice Inviting the Offer (NIO), Eligibility criteria, General rules and Directions to Tenderers, Schedules A to F, Conditions of contract, Clauses of Contract, Special conditions, Technical specifications, Safety code, Model rules for protection of Health & sanitary arrangements, List of preferred makes, **Annexures 1 to 20**, Schedule of Quantity(SOQ)

6) Tenders shall be on prescribed Form for item rate tenders as issued by the Bank / hosted by the Bank in website & CPP portal.

7) The site for the work is available.

8) Nature of the document: **TWO BID CONCEPT**. This Tender document comprises of the following:

A TECHNICAL BID: (first envelope) consisting of following should be hardbound/spiral bound and submitted as in **Sl. No. 9 & 10** below in a separate envelope-

- a) EMD – Earnest Money Deposit
- b) Notice inviting tender(NIT).
- c) General Rules & directions to contractor.
- d) Schedules.
- e) Conditions of contract.
- f) Clauses of contract.
- g) Special conditions
- h) Safety code.
- i) Model rules for protection of health and sanitary arrangements for workers employed by contractors.
- j) Technical specifications for firefighting works.
- k) Preferred makes/brand of materials
- l) Annexures 1 to 20.

B. PRICE BID (second envelope): Schedule of quantity (SOQ). Financial bid should be hardbound / spiral bound and submitted in separate envelope as in **Sl. No. 9 & 10** below.

9) Submission and opening of Tenders:

- a) Tenders on prescribed form should be placed in two envelopes one sealed envelope consisting of “Technical bid” duly super scribed as “Technical bid” and other sealed envelope consisting “Price bid” duly super scribed as “Price Bid” and both envelopes shall be kept in one bigger sealed single envelope, with the name of work, Name of Tenderer and due date written on the envelopes.
- b) Sealed Tenders shall be addressed to Premises & Estate Section, Circle office, Jagamara, Bhubaneswar.
- c) Sealed Tenders shall be dropped in the **TENDER BOX** kept at the above said address up to 3PM by 29.05.2021.
- d) The first part of tenders i.e. Technical bid will be opened on the same day at the same location at 04.00 PM. If last day of submission of tender is declared a holiday under NI Act by the Government subsequent to issuance of tender the next working day will be deemed to be the last day for submission of the tender.
- e) The Financial bid of only the qualified / shortlisted applicants will be

opened on a pre-notified time & date, under intimation to such qualified / shortlisted applicants.

- 10)The tender shall be accompanied by earnest money deposit of Rs.24,000/- by way of Demand Draft of a Scheduled commercial Bank issued in favour of **Canara Bank, Circle Office, Bhubaneswar payable at Bhubaneswar**. EMD can also be submitted by way of irrevocable Bank guarantee from scheduled commercial Bank other than Canara Bank valid for **120 days with claim period of 60 days** in the format prescribed by the Bank. **EMD shall be submitted in the Technical bid only.**

Submission of EMD in the form of fixed deposit or in any other form is not acceptable and tenders with such EMD shall be rejected.

No interest shall be allowed on the Earnest Money. Tenders without Earnest Money shall be summarily rejected. However MSEs are exempted from paying Tender fee, EMDs as per MSME Act 2012. For getting the benefits in case of MSE firms, contractors / agencies should submit exemption certificate issued from the relevant authorities.

- 11)Copies of other drawings and documents pertaining to the works will be open for inspection by the tenderers at the office of the above mentioned Office of the Bank /Architect.

- 12)Tenderers are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender.A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed. Submission of a tender by a tenderers implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done, site details and local conditions and other factors bearing on the execution of the work.

- 13)The tenderer shall be responsible for arranging and maintaining at his own cost all materials, labour, tools and plants, water, electricity, access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents.

- 14)Canara Bank reserves to itself the right of accepting the whole or any part of the tender and the tenderer shall be bound to perform the

same at the rate quoted.

- 15)The tender for the works shall remain open for acceptance for a period of **120 days** from the date of opening of tenders.If any tenderer withdraws his tender before the said period or makes any modifications in the terms and conditions of the tender which are not acceptable to the Bank, then the Bank shall,without prejudice to any other right or remedy, be at liberty to forfeit full value of the earnest money as aforesaid.
- 16)This Notice Inviting Tender shall form a part of the contract document. The successful Tenderer/contractor, on acceptance of his tender by the Accepting Authority,shall, enter in to an agreement within 15 days from the date of acceptance letter.
- 17)Canara Bank does not bind itself to accept the lowest or any other tender, and reserves to itself the authority to reject any or all of the tenders received without the assignment of a reason.All tenders in which any of the prescribed conditions are not fulfilled or new conditions are stipulated by the tenderer or are incomplete in any respect are liable to be rejected.
- 18)Canvassing whether directly or indirectly, in connection with tenders is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.

19)Pre bid queries and clarification to Tender:

The tenderer should carefully examine and understand the specifications, terms and conditions of the Tender and may seek clarifications, if required. The tenderer in all such cases seek clarification in writing in a word document (.doc) in the same serial order of that of the Tender by mentioning the relevant page number and clause number of the Tender. The soft copy of the pre-bid queries should be sent by E-Mail to pecobhu@canarabank.com and the pre-bid query should be in the following format.

Sl No	Page No	Tender Clause No	Tender Clause	Query

All communications regarding points requiring clarifications and any doubts shall be given in writing to Premises & Estate Section, Circle office, Jagamara, Bhubaneswar by the intending tenderers before 5:00

PM on **20.05.2021**. No oral or individual consultation shall be entertained.
No queries will be entertained from the tenderers after the pre-bid meeting.

Pre-Bid meeting:

A pre-bid meeting of the intending tenderer will be held as scheduled below to clarify any point /doubt raised by them in respect of this Tender document:

Date	Time	Venue
21.05.2021	11AM	Premises & Estate Section ,Circle office, 1556P/1561P, Jagamara ,Khandagiri, Bhubaneswar-751019.

No separate communication will be sent for this meeting. If the meeting date is declared as a holiday under NI Act by the Government subsequent to issuance of RFP, the next working day will be deemed to be the pre-bid meeting day. Authorized representatives of interested tenderers shall be present during the scheduled time.

The Bank will consolidate all the queries and discussions during the pre-bid meeting and the consolidated replies for the queries shall be made available in the Bank's website and no individual correspondence shall be made. The replies/clarification of the Bank in response to the queries raised by the bidder/s, and any other clarification / amendments / corrigendum furnished hereof will become part and parcel of the Tender document and it will be binding on the tenderers.

Non-reply to the queries raised by any of the Tenderer shall not be accepted as a valid reason for non-submission of the Tender. In addition, non-reply to any query may not be deemed the version of the Tenderer as reflected in the query has been accepted by the Bank.

20. Amendment to Tender document:

At any time prior to deadline for submission of Tender, the Bank, for any reason, whether, at its own initiative or in response to a clarification requested by prospective bidder may modify the Tender document by amendment.

Notification of amendments will be made available on the Bank's website (www.canarabank.com) and will be binding on all tenderers and no separate communication will be issued in this regard.

In order to allow prospective tenderers reasonable time in which to take the amendment into account in preparing their tender, the Bank, at its

discretion, may extend the deadline for a reasonable period as decided by the Bank for the submission of tender.

21. Brief details of the work:

The Building comprises of Basement, G+3 floors . Hence Fire fighting Hydrant System works are to be carried out as detailed in the price bid.

22. Definition:A “Tenderer / Bidder” is the Individual / Proprietor / Partnership Firm / Company who submits it tender for the subject works.

Date:28.04.2021

ASSISTANT GENERAL MANAGER
CanaraBank Circle office,Bhubaneswar

GENERAL RULES AND DIRECTIONS TO TENDERERS

1. All work proposed for execution by contract will be notified in a form of Invitation to Tender and signed by the Bank Officer inviting tender.

This form will state the work to be carried out, as well as the date for submitting and opening tenders and the time allowed for carrying out the work, also the amount of Earnest money to be deposited with the tender, and the amount of the security deposit to be deposited by the successful tenderers and the percentage, if any, to be deducted from bills. Copies of the specification, tender drawings and any other documents required in connection with the work signed for the purpose of identification by the officer inviting tender shall also be open for inspection by the contractor at the office of officer inviting tender during officehours.

2. In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power-of- attorney authorising him to do so, such power of attorney to be produced with the tender, and it must disclose that the firm is duly registered under the Indian Partnership Act 1952 by enclosing a copy of the partnership deed duly certified by one partner as truecopy.

Tender by Hindu Joint Family (HUF) firm may be signed by the Kartha or Manager or any other duly authorised representative followed by the name and designation.

3. Receipts for payments made on account of a work, when executed by a firm, shall be in the name of the firm by one of the partners, or by some other person having due authority to give effectual receipts for the firm.
4. Any person who submits a tender shall fill up the printed prescribed form stating what rate he is willing to undertake each item of the work. Tenders, which propose any alteration in the work specified in the same form of invitation to tender, or in the time allowed for carrying out the work, or which contain any other conditions of any sort, will be liable to rejection. No single tender shall include more than one work. Tenders shall have the name and number of the works to which they refer, written on the envelopes. Modifications to specifications, item description, any clauses, conditions or any provisions whatsoever in the tender documents shall lead to disqualification of the tender.
5. In case the lowest tendered amount (worked out on the basis of quoted rate of Individual items) of **two or more Tenderers is same**, then such lowest **Tenderers** may be asked to submit sealed revised offer quoting rate of each item of the schedule of quantity for all sub-sections/sub heads as the case may be, but the revised quoted rate of each item of schedule of quantity for all sub sections/sub heads should not be higher than their respective original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis

of revised offer.

If the revised tendered amount (worked out on the basis of quoted rate of individual items) of two or more Tenderers received in revised offer is again found to be equal OR the tie is not resolved then the lowest tender, among such Tenderers, shall be decided based on the following criteria in the same order of preference :

1st preference - Total Value of the qualifying works - Eligibility criteria 4

2nd preference –Total turnover during last 3 financial years-Eligibility criteria 3

In case of any such lowest **Tenderer** in his revised offer quotes rate of any item more than their respective original rate quoted already at the time of submission of tender, then such revised offer shall be treated invalid. Such case of revised offer of the lowest **Tenderer** or case of refusal to submit revised offer by the lowest **Tenderers (tied amount)** shall be treated as withdrawal of his tender before acceptance and **50% of his earnest money shall be forfeited.**

In case all the lowest **Tenderers** those have same tendered amount (as a result of their quoted rate of individual items), refuse to submit revised offers, then tenders are to be recalled after **forfeiting 50% of EMD of each lowest Tenderers.**

Tenderer whose earnest money is forfeited because of non-submission of revised offer, or quoting higher revised rate(s) of any item(s) than their respective original rate quoted already at the time of submission of his bid shall not be allowed to participate in the retendering process of the work.

6. The rate quoted shall comply to the following:

- (a) The rate(s) and/or amount(s) must be quoted in decimal coinage. Amounts must be quoted in full rupees by ignoring fifty paise and less and considering more than fifty paise as rupee one.
- (b) In case of illiterate contractors the rates or the amounts should be attested by a witness, with a declaration that the contents of the tender documents have been explained to the tenderer.
- (c) The rate columns should be filled in English figures and English words.
- (d) The rate and amount columns for alternative items, if any, shall be filled up but amounts shall not be added in the total. The amount of alternative items of which quantities are not mentioned shall not be filled.

7. In the case of any errors or omissions in the quoted rates, the rates given in the

tender marked "Original" shall be taken as correct rates.

8. All rates shall be quoted only on the tender form. Quoted rates and units different from prescribed in the tender schedule will be liable for rejection. The amount for each item should be worked out and requisite totals given. Special care should be taken to write the rates in figures as well as in words and the amounts in figures only, in such a way that interpolation is not possible. The total amount should be written both in figures and in words. In case of figures, the word `Rs.' should be written before the figure of rupees and words `P' after the decimal figures, e.g., `Rs.2.15p' and in case of words, `Rupees' should precede and the word `Paise' should be written at the end, unless the rate is in whole rupees and followed by the words `only' it

should be invariably be up to two decimal places. While quoting the rate in Schedule of quantities, the word `only', should be written closely following the amount and it should not be written in the next line.

All corrections such as cuttings, interpolations, omissions and over-writings shall be numbered as `c', `i', `o' and `ow' and initialed and total of such c, l, o and ow on each page certified at the end of the page with grand total at the end of the bill / schedule of quantities. Use of correcting fluid, anywhere in tender document is not permitted. Such tender is liable for rejection.

9. The officer inviting tender or his duly authorised assistant will open tenders in the presence of any intending contractors who may be present at the time, and will enter the amounts of the several tenders in a comparative statement in a suitable form. In the event of a tender being accepted for consideration, a receipt for the earnest money forwarded therewith shall thereupon be given to the contractor who shall thereupon for the purpose of identification sign copies of the specifications and other documents mentioned in Rule-I. In the event of a tender being disqualified and rejected, the earnest money forwarded with such unaccepted tender shall thereupon be returned to the contractor remitting the same, without any interest.
10. The Officer inviting tenders shall have the right of rejecting all or any of the tenders and will not be bound to accept the lowest or any one tender.
11. The memorandum of work tendered for and the schedule of materials to be supplied by the Bank and their issue-rates, shall be filled in and completed in the office of the officer inviting tender before the tender form is issued. If a form is issued to an intending tenderers without having been so filled in and completed, he shall request the officer to have this done before he completes and delivers his tender.
12. The Tenderer shall take all necessary precautions to ensure that all confidential information which the Tenderer obtains in the course of participating in this Tender or at any time thereafter is not disclosed or used other than for the

purpose of project execution / scope of work / deliverables. Tenderer shall suitably defend, indemnify Bank for any loss / damage suffered by Bank on account of and to the extent of any disclosure of such confidential information. Confidential information for this purpose refers to such information pertaining to Bank provided to Tenderer which is marked as confidential and which is not available in the PublicDomain”.

13.In the case of item rate tenders, only rates quoted shall be considered. Any tender containing percentage below / above the rates quoted is liable to be rejected. Rates quoted by the contractor in item rate tender in figures and words shall be accurately filled in so that there is no discrepancy in the rates written in figures and words. However, if a discrepancy is found, the rates which correspond with the amount worked out by the contractor shall unless otherwise proved be taken as correct. If the amount of an item is not worked out by the contractor or it does not correspond with the rates written either in figures or in words then the rate quoted by the contractor in words shall be taken as correct. Where the rates quoted by the contractor in figures and in words tally but the amount is not worked out correctly,the rates quoted by the contractor will unless otherwise proved be taken as correct and not the amount. In event no rate has been quoted for any item(s), leaving space both in figure(s), word(s), and amount blank, it will be presumed that the contractor has included the cost of this/these item(s) in other items and rate for such item(s) will be considered as zero and work will be required to be executed accordingly.

In case the same item appears more than once in the schedule of work under the same sub head or among the different sub heads of works, the lowest rate quoted for that item shall be taken for other items also and tender will be evaluated accordingly.

14.The contractor whose tender is accepted shall be required to furnish by way of **Initial security** a sum which shall be equal to 2% (two percent) of the accepted value of the tender including the Earnest Money Deposit, within 14 (fourteen) days of the date of issue of the letter of acceptance of his tender, Demand Draft payable to the Canara Bank or by way of Fixed Deposit Receipt with the Canara Bank or **by way of Bank Guarantee from any other Scheduled Bank other than Canara Bank in the prescribed format** for the duration of the contract period and defect liability period. A further sum of 3% (three percent) of the Gross value of each interim/final bill shall be deducted as retention money to make up, together with the Initial Security Deposit, a **total Security Deposit** equal to 3% of the accepted value of the tender. **The Initial Security** amount will also be accepted in Fixed Deposit Receipt of Canara Bank for the full period of contract including defect liability period or in form of Bank Guarantee from any other Scheduled Bank in the prescribed format. In case a fixed deposit receipt of Canara Bank is furnished by the contractor to the Employer it shall be free from any loans or any encumbrance and shall be assigned / hypothecated to theEmployer.

In case the successful tenderer fails to remit the Initial security deposit within the above stipulated time, the Earnest money deposit shall be forfeited.

15. In the case of any tender where unit rate of any item/items appears unrealistic, such tender will be considered as unbalanced and in case the tenderer is unable to provide satisfactory explanation such a tender is liable to be disqualified and rejected and / or the tenderer is liable for **additional security deposit** as demanded by the Employer in the form of Demand Draft or Bank guarantee from scheduled commercial Bank other than Canara Bank valid for contract period / smaller period (as decided by the Bank) in the **format** prescribed by the Bank.
16. On acceptance of the tender, the name of the accredited representative(s) of the contractor who would be responsible for taking instructions from the Employer and / or Engineer-in-charge shall be communicated in writing to Employer.
17. The rates quoted shall be all inclusive rates for the item of work described, including materials, labour, tools and plant, lead, lift carriage and transport. supervision, Royalties, duties, levies, cess, entry tax, Octroi, profession tax, GST, purchase tax, turnover tax, or any other tax on material in respect of this contract, overheads and profits, mobilizing, demolishing and other charges whatsoever including any special difficulties any restrictions for transport etc., complete for proper execution of the work as per drawings and specifications and no claim whatsoever for any extra payment shall be maintainable.
- GST or any other Tax, any royalties, duties, levies, cess, Entry Tax, octroi, Profession Tax, Turnover Tax or any other Tax on material in respect of this contract shall be payable by the tenderer and the Bank will not entertain any claim whatsoever in respect of the same and nothing extra shall be paid / reimbursed for the same subsequently. The rates quoted shall include all the above. GST on works contract on finished works wherever applicable shall be paid by Bank as per extant rules. All charges payable to local bodies for any service connections for construction purposes, land tax, etc., shall also be paid by the contractor and nothing extra shall be paid/reimbursed for the same.
18. The contractor shall give a list of the Bank employees related to him with their places of posting and designations in prescribed Format as per the Annexure-05.
19. The tender for the work shall not be witnessed by a contractor or contractors who himself/themselves has/have tendered or who may and has/have tendered for the same work. Failure to observe this condition would render tenders of the contractors tendering, as well as witnessing the tender, liable to summary rejection.
20. Errors and omissions due to clerical, typographical or printing etc., if any, will have to be got clarified and corrected before quoting the rates. The interpretation given by the appropriate tender accepting authority of the Bank shall be final and binding.

21. Procurement of all materials, other than specifically stipulated to be issued by the Bank, if any, shall be at the cost and the responsibility of the contractor.

22. PROVISIONS FOR MICRO & SMALL ENTERPRISES (MSES):- As per Government of India's Public Procurement Policy act 2012, certain benefits will be given for MSE Units. The details are asunder:

- a) The Public Procurement Policy shall apply to MSEs registered with District Industries Centres or Khadi Village Industries Commission or Khadi & Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts & Handloom or any other body specified by Ministry of Micro, Small & Medium Enterprises.
- b) MSEs are exempted from paying Tender/RFP fee/cost, EMDs. For getting the benefits in case of MSE firms, shall submit relevant documents such as valid MSE registration Certificates and exemption certificate from relevant authorities.

23. Tenderer shall fill in all the blanks and put their signature and seal on each page of the tender documents. The successful Tenderer will have to enter into an agreement with each component of the Tender document with the Bank.

24. The contractor shall carry out the works according to the workings drawings issued by the Engineer in charge during the course of work from time to time. Tenderer/ Contractor is not eligible for any claim on account of any differences between the tender drawings and working drawings.



: SCHEDULE s::

SCHEDULE `A' ::

Schedule of Quantities - SOQ - (Specified in detail and attached) (Should be submitted in a separate envelope as financial bid)

SCHEDULE `B' ::

Schedule of materials to be issued to the contractor.

Sl. No.	Description of items	Quantity	Rates in figures & words @which the materials will be charged to the contractor	Place of Delivery

- - -N I L - - - -

SCHEDULE - 'C' ::

Tools and Plants to be hired to the contractor under headings.

Sl. No.	Description	Hire Charges per day
- - -N I L - - - -		

SCHEDULE 'D' ::

- Extra schedule for work :
- i. Conditions of contract
 - ii. Clauses of contract
 - iii. Special conditions
 - iv. Safety code
 - v. Model rules for protection of Health & sanitary
 - vi. List of preferred makes

SCHEDULE 'E' ::

Name of work :: **Fire Fighting Hydrant System works at New Circle office building, Jagamara, Bhubaneswar**

SCHEDULE 'F' ::

Reference to Conditions of contract.

Definitions::

- 2(a) Work :: Fire Fighting Hydrant System.
- 2(b) Site :: , Plot No-1556P/1561P, Jagamara , Khandagiri, Bhubaneswar-751019.
- 2(c) Contractor :: Successful tenderer to whom the work is awarded
- 2(d) Bank or Employer or Buyer :: Canara Bank, Bhubaneswar C.O.
- 2(e) Architect/Consultant :: M/s. Techno Arch.

2(h) **Accepting Authority** ::Deputy General Manager/Asst.General Manager

Canara Bank, Circle
Office,
Bhubaneswar.

2(j) Percentage on cost of materials and labour to cover alloverheads andprofits. :: 15 % (fifteen %)

9.1 (d) Standard specification to be :: ISstandards followed

10 (b) StandardContractForm :: Item rate Tender form of Canara Bank as modified & Corrected up to date of tender.

Reference to CLAUSES OF CONTRACT

Clause 1 :

Estimated cost of work ::Rs.24.00 Lakhs

Earnest Money Deposit ::1 % of estimated tender value

Security Deposit :: As below

a) 2% initial security deposit (including EMD) within 14days.

b) Security Deposit :: 3% of the work executed (Rule 13 of General Rules and Directions deducted from bills

c) Maximum percentage for quantity of items work to be executed beyond which are to be determined in accordance with clause 12.2 & 12.3 :: Same as given below of against clause 12 & rates its subclasses

Clause 2 ::	Authority for fixing compensation under clause 2.	General Manager, Circle office, Bhubaneswar
Clause 5	Time allowed for execution of work from date of issue of work order	45 days
Clause 5.4	Authority to give fair and reasonable extension of time for completion of work	General Manager, Circle office, Bhubaneswar
Clause 10 B	Mobilisation Advance Max. percentage of accepted tendered cost (contract amount)	-- N I L --
	Plant & Machinery Advance Maximum percentage of contract amount.	-- N I L --
	Rate of interest percent per Annum on mobilization Advance and Plant and machinery Advance	-- N I L --
	Other items (Specify) if any	-- N I L -
Clause 10 C ::	Escalation	
Clause 12 :: 12.1 (iii)	Schedule of Rates for determining. Rates for additional, altered or substituted items that cannot be determined under 12.1 (b) (i) & (ii)	CPWD Schedule of Rates 2018 With applicable cost index & Local market Rates
12.1(vi)A(a)	Limit for value of any contract item, substituted item or contract- cum- substituted item beyond which sub-clauses (i) to (v) shall not apply and	25 % (Twenty five %)

	clauses 12.2 &12.3 shall apply.	
12.1(B)(vi)A(b)	(for lumpsum contracts) Limit for deviations ordered on any individual trade beyond which provisions of sub-clauses (i) to (v) shall not apply and clauses12.2 and 12.3 shall apply.	Not applicable.
12.1(vi)B(a)	Limit for value of any item of any individual trade beyond which sub-clauses (i) to (v) shall not apply andclauses12.2and12.3shall apply.	10 % (ten %)
Clause 15:: (b)(II)	Percentage payable to cover contractor's indirect expenses for suspension of work exceeding 30 days andnot exceeding 3 months.	NIL
(c)	Percentage payable to cover contractor's indirect expensesfor suspension exceeding 3 months.	NIL
Clause 16 ::	Competent Authority for deciding reduced rates.	Deputy General Manager/Assistant General Manager, Circle office, Bhubaneswar
Clause 19 ::	Submission of Labour License	Within 7 days from the date of receipt of Acceptance letter
Clause 25	i) Amount of claim by any party beyond which Arbitrator shall give reasons for award.	All Claims
	ii) Accepting Authority	Deputy General Manager/Assistant General Manager, Circle office, Bhubaneswar
Clause 36 (i)	a) Minimum Qualifications & experience required for Principal Technical Representative to be in-charge of work	GRADUATE ENGINEER with 3 years' Experience OR Diploma holder with 5 years OR Retired A. E. from Govt. Department with 5 years' experience as A. E
	b) Minimum experience of works	3 years for Graduates and 5 years for Diploma.
Clause 42 :: (i) (a)	Schedule / Statement for determining theoretical quantity of	On the basis of latest Schedule of Rates printed

	cement and bitumen.	by CPWD
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CONDITIONS OF CONTRACT

Definitions:-

1. The `Contract' means the tender documents and acceptance thereof and the agreement duly executed between the Canara Bank and the Contractor, together with the documents referred to therein including these conditions, NIT, specifications, schedule of quantities, agreement, designs, drawings and instructions issued from time to time by the Employer and / or Engineer-in-

Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.

2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them.

a) The expression `works' or `work' shall be as mentioned Schedule F, unless there be something either in the subject or context repugnant to such construction be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.

b) The `Site' shall mean the land/or other places on as mentioned Schedule F, into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.

c) The `Contractor' shall mean as mentioned in schedule F, the individual Kartha, or Manager of HUF, firm or Company, whether incorporated or not, undertaking the works and shall include the legal heirs/representatives of such individual or the partners composing firm and theirs legal heirs and successors, or company's authorized and constituted attorneys/agents and permitted assigns of such firm or company.

d) The `Employer/Canara Bank means as mentioned in schedule F any officer of the Bank, who is specifically authorised to enter into contracts and in charge of the work mentioned in Schedule F.

e) The `Engineer-in-Charge' means the Officer, Engineer and/or Site Engineer as mentioned in Schedule `F' hereunder who shall supervise and be in charge of the work or any other person specifically deputed by the Employer.

f) `Contract Price' shall mean the final accepted rates in the Schedule A hereto.

g) `Date of Contract' means the `Calendar date on which the Employer and Contractor have signed the Agreement on the Stamp Paper.

h) "Accepting Authority" shall mean the authority mentioned in Schedule `F'.

i) "Excepted Risk" are risks due to riots (other than those on account of contractor's employees or agents or persons worked under or at the instance of the contractor) or civil commotion (in so far as both these are uninsurable), war (Whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, Tsunami and other causes over which the contractor has no control and accepted as such by the Accepting Authority.

j) "Market Rate" shall be the rate as decided by the Employer on the basis of the cost of materials and labour and the site where the work is to be executed plus the percentage mentioned in Schedule `F' to cover all overheads and profits.

k) "Schedule(s)" referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard Schedule of Rates of the C.P.W.D. or state P.W.D. mentioned, if any, in Schedule `F' hereunder, with the amendments thereto issued upto the date of receipt of the tender.

l) `Approved' or `Approval' wherever used in the specifications or schedule of Quantities shall mean, respectively, 'approved by or approval of the `Accepting Authority' in writing.

m) `Notice in writing' or `written notice' shall mean a notice in writing typed or printed characters delivered to or sent by registered post to the last known address private or business address or registered office address, and shall be deemed to have been received when in ordinary course of post it would have been delivered, and/or delivered personally, or otherwise proved to have been received.

n) `virtual completion' shall mean that the work / building is complete in all respects in the opinion of the Employer/Bank.

o) Drawings' shall mean all drawings and / or sketches duly signed by the Engineer-in-charge or their representative on behalf of the Employer before commencement or during the progress of the work.

p) `Letter of Acceptance' shall mean an intimation by a letter issued by the Accepting Authority of the Employer / Bank to tenderers that his tender has been accepted in accordance with the provisions in the said letter.

q) **Base price** shall be as specified in Schedule F and **Annexure -19** based on the actual price quoted by the authorised stockiest / wholesalers / showroom including GST, octroi and all other duties levied by the statutory / local authority and also excluding loading, unloading and carriage / transportation cost to the site of work, overheads, storage charges at site.

r) "Defect Liability Period" shall mean a period of twelve months from the certified date of virtual completion issued by the Engineer in charge / Employer. However, in the case of specialist contracts like for anti-termite treatment, water proofing treatment and the like the period of warranty in such contracts shall supersede the defect liability period, and the defect liability period of twelve months shall stand extended to be equal to the warranty period.

s) "Approved make" means materials as specified under List of preferred makes and also as approved by the Bank.

3. Scope and Performance::Where the context so requires, words imparting the singular only also include the plural and vice versa. Any reference to masculine gender shall whenever required include feminine gender and viceversa.

4. Headings to these Conditions of Contract, Clauses of contract, special conditions, Technical specifications shall not be deemed to form part thereof or be taken into consideration in the inter-pretation or construction thereof or of thecontract.

5. The contractor shall be furnished, free of cost one certified copy of the contract documents (except standard specifications, Schedule of Rates) together with all drawings as may be forming part of the tender papers. None of these documents shall be used by the Contractor for any purpose other than for this contract.

6. Works to be carried out :: The work to be carried out under the contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the Schedule of Quantities (Schedule - A) shall, unless otherwise stated, be held to include waste on material carriage and cartage, lead, lift, safety works, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labour necessary and for the full and entire execution and completion as aforesaid in accordance with good practice and recognized principles.

7. Rates

The contractors should quote the item rate and amount tendered by them in figures as well as in words. The amount for each item should be worked out and the requisite totals given. The rates quoted shall be exclusive of all taxes and inclusive of rates for the item of work described, labour, tools & plant, carriage & transport, supervision, overheads & profits, fees , mobilizing and other charges whatsoever including any anticipated or un-anticipated difficulties, etc. complete for proper execution of the work as per drawings and specifications and no claim whatsoever for any extra payment shall be maintainable. Please refer Clause No: 7 of General Conditions of the contract for Goods and services tax(GST).

8. Sufficiency of Tender::

THE Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.

9. Discrepancies and Adjustment of Errors::

THE several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawing being followed in preference to small scale drawing and figured dimensions in preference to scale and special

conditions in preference to General Conditions.

If there is any difference or discrepancy between the description of items as given in the schedule of quantities, particular specifications for individual items of work (including special conditions) and I.S. Codes etc., the following order of preference shall be observed:

- a) Description of the Item as detailed in Schedule of Quantities (SOQ).
- b) Particular Specifications, Special condition, Additional conditions if any
- c) Detailed Drawings
- d) CPWD specifications
- e) Clauses of contract
- f) Indian Standard Specifications of B.I.S.
- g) Manufacturer's specifications
- h) As decided by Employer

Moreover, the Contractor is not allowed to take benefit out of any clerical / grammatical mistake in the standard clauses/ Bill of Quantities/Specifications etc. being used in the agreement”.

If there are varying or conflicting provisions made in any one or more document(s) forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on contractor.

Any error in description or quantity or rate in Schedule of Quantities or any omission there from shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the Contract

10. Signing of Contract :: THE successful tenderer/contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work sign the contract consisting of following **failing which the Earnest money deposit shall be forfeited:-**

- a) Standard form of agreement on stamp paper, the notice inviting tender, all the documents including drawings, if any, forming the tender as issued at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.
- b) Standard Contract Form as mentioned in Schedule `F' consisting of:
 - a) Notice inviting tender(NIT).
 - b) General Rules & directions to contractor.
 - c) Schedules A to F.
 - d) Conditions of contract.
 - e) Clauses of contract.
 - f) Special conditions.

- g) Technical specifications for Fire fighting Hydrant System works.
- h) Safetycode.
- i) Model rules for protection of health and sanitary arrangements for workers employed bycontractors.
- j) Preferred makes.
- k) annexures 1 to20.
- l) Schedule of Quantities (SOQ)



CLAUSES OF CONTRACT

Clause - 1:: DEPOSITS

The person/persons whose tender(s) may be accepted (hereinafter called the contractor) shall deposit a sum which together with the EMD shall equal to 2% (two percent) of the accepted tendered cost as **Initial security deposit** within 14 days of the issue of the letter of acceptance, in the form of Demand Draft payable to the Employer, or by way of Fixed Deposit receipt with the Canara Bank **or by way of Bank Guarantee from any other Scheduled Bank in the prescribed format** for the entire duration of the contract period plus the defect liability period and shall further permit the Employer at the time of making any payment to him for work done under the contract to deduct a sum of **3% of the gross** amount of each running

bill as **Retention money** till the sum along with the sum already deposited as initial security deposit will amount to **security deposit** of an amount equal to 3% of the accepted value of the tender. Such deductions will be made and held by the Employer by way of **Retention money** unless he has/they have deposited the full amount of Security Deposit as mentioned above in the form of Fixed Deposit Receipt issued by the Canara Bank or irrevocable Guarantee Bond of any other Scheduled Bank for the entire period of the Contract including the defect liability period. In case a fixed deposit receipt of Canara Bank is furnished by the contractor to the Employer it shall be free from any loans or any encumbrance and shall be assigned / hypothecated to the Employer.

All compensation or the other sums of money payable by the contractor under the terms of this contract may be deducted from, or paid by the sale of a sufficient part of his security deposit or from the interest if any, arising therefrom, or from any sums which may be due to or may become due to the contractor by Government on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deduction or sale as aforesaid, the contractor shall within 10 days make good in the cash or Guarantee Bond of a Scheduled Bank other than Canara Bank in favour of the Employer or fixed deposit receipt tendered by the Canara Bank (in case of guarantee offered by scheduled banks, the amount shall be within the financial limits prescribed by the Reserve Bank of India); any sum or sums which may have been 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 deposited at the time of tenders and the Initial Security Deposit will be treated as part of the Security Deposit.

Clause - 2 :: COMPENSATION FOR DELAY ::

If the contractor fails to maintain the required progress in terms of the contract or to complete the work and clear the site on or before the contract or approved extended date of completion, he shall, without prejudice to any other right or remedy of the Employer on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below or such smaller amount as may be fixed by the authority mentioned in Schedule `F' on the contract value of the work for every completed week that the progress remains below that specified in clause 5 or that the work remains incomplete.

This shall also apply to items or group or items for which a separate period of completion has been specified, if any.

For this purpose the term `Contract Value' shall be value at the contract rates of the work as ordered.

a) Completion period (as originally stipulated)	:: 1 (One) percent per week
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Provided always that the total amount of compensation for delay to be paid under

this condition shall not exceed the undernoted percentage of the Contract Value or of the Contract Value of the item or group of items of work for which a separate period of completion is originally given:-

a) Completion period (asoriginally stipulated)	:: 10% (Ten percent)
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Clause -2.1::

Bank shall have the right to adjust set-off against any sum payable to the Contractor under this or any other contract with the Employer / Canara Bank anywhere in India / outside India.

Clause -3::

Subject to other provisions contained, the Employer 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 date of completion has or has not elapsed, by notice in writing absolutely determine and cancel the contract in any of the following cases;

i) If the contractor having been given by the Employer and/or the Engineer- in-charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in any inefficient or otherwise improper or unworkman like manner shall omit or comply with the requirement of such notice for a period of seven days there after.

ii) If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.

iii) If the contractor has without reasonable cause failed to commence the work or has suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Employer (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from Employer.

iv) If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date (s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Employer and /orEngineer-in-charge.

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

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

Clause -3.1::

When the contractor has made himself liable for action under any of the cases aforesaid, the Employer shall have powers ::

a) To determine or rescind the contract of which termination or rescission notice in writing to the contractor under the hand of the Employer shall be conclusive evidence. Upon such determination or rescission, the security deposit of the contractor shall be liable to be forfeited and shall be absolutely at the disposal of Employer.

b) To employ labour paid by the Employer and to supply material to carry out the work or any part of the work debiting the contractor with the cost of the labour and the price of the materials (of the amount of which cost and price certified by the Engineer-in-charge shall be final and conclusive) against the contractor and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract. The certificate of the Engineer-in-charge as to the value of the work done shall be final and conclusive against the contractor provided always that action under the sub- clause shall only be taken after giving notice in writing to the contractor. However if the net total expenses incurred by the Employer are less than the amount payable to the contractor at his agreement rates, the difference shall not be paid to the contractor.

c) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof as shall be unexecuted out of his hands and to give it to another person to complete in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him, of the amount of which excess the certificate in writing of the Employer shall be final and conclusive shall be borne and paid by the original contractor and may be deducted from any money due to him by Employer under this contract on any other contract account whatsoever or from his security deposit or the proceeds of sales thereof or a sufficient part thereof as the case may be.

Clause -3.2::

In any such event the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provisions aforesaid, the contractor shall not be entitled to

recover or be paid any sum for any work thereto 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. Provided further that any of the recoveries to be made when the excess cost incurred by the Employer under the action in (b) and/of (c) above is more than the Security Deposit to be forfeited, such recoveries shall be limited to the amount by which the excess cost incurred exceeds the Security deposit so forfeited.

Clause-4::

In any case in which any of the powers conferred upon the Employer under Clause-3 hereof, shall have become exercisable and the same shall not be 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 Employer 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 Employer 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 Employer) all or any tools, plant, materials and stores in or upon the works, or the site thereof, belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-charge, whose certificate thereof shall be final and binding on the contractor, otherwise the Employer by notice in writing may order the contractor or his clerk of the works, foreman or other authorised agent to remove such tools, plant, materials, or stores from the premises, within the time to be specified in such notice, and in the event of the contractor failing to comply with any such requisition, the Employer may cause to remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and at his risk in all respects and the certificate of the Engineer-in-Charge as to the expense of any such removal and the amount of the proceeds and expense of any such sale shall be final and conclusive against the contractor.

Clause-5:: TIME AND EXTENSION FOR DELAY ::

The time allowed for execution of the Works by the Contractor as specified in the **Schedule 'F'** 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 15th day after the date on which the Employer issues written orders to commence the work or from the date of handing over of the site whichever is later. If the contractor commits default in commencing the execution of the work as aforesaid, the Employer shall without prejudice to any other right or remedy available in law be at liberty to forfeit the earnest money absolutely.

Clause -5.1::

The contractor shall submit a Time and Progress Chart and get it approved by the Engineer-in-Charge. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Employer and the Contractor within the limitations of time imposed in the Contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work exceeds one month (save for special jobs) complete 1/8th of the whole of work before 1/4th of the whole time allowed in the contract has elapsed; 3/8th of the work before one half of such time has elapsed and 3/4th before 3/4th of such time has elapsed.

Clause -5.2:: If the works be delayed by :-

- a) Force majeure, or
- b) Excepted risk;
- c) abnormally bad weather, or
- d) serious loss or damage by fire, or
- e) civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
- f) delay on the part of other contractors or tradesmen engaged by the Employer in executing work not forming part of this Contract, or
- g) Non-availability of stores, which are the responsibility of the Employer to supply or
- h) any other cause which, in the absolute discretion of the authority mentioned in Schedule 'F' is beyond the Contractor's control,

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

Clause -5.3::

Request for 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 to the Accepting Authority. The Contractor shall also, if practicable, indicate in such a request the total period for which extensions desired, overlapping period, if any, with earlier events causing delays, net-extension required.

Clause -5.4::

In such case the authority may give a fair and reasonable extension of time for

completion of work. Such extension shall be communicated to the Contractor by the Employer in writing, within 3 months of the date of receipt of such request. Non application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Employer and this shall be binding on the contractor.

Clause - 6::

(i) Engineer-in-charge is duty bound to, except as otherwise provided, ascertain and determine by measurement the value in accordance with the contract of work done.

(ii) ALL 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 such measurement books and level books shall be with machine numbered pages with a certificate of the Engineer-in-charge regarding the name of the work and contractor and number of pages. All such measurement books and level books shall be maintained carefully, work wise and shall be handed over to the Employer at the completion of the work.

(iii) All measurements and levels shall be taken jointly by the Site engineer authorized by the Engineer-in-Charge and the contractor or his authorised representative from time to time during the progress of the work and all such measurements shall be verified by the Engineer-in- Charge/Architect to verify the accuracy of the measurement and signed and dated by the Engineer-in-Charge/Architect in token thereof and by the contractor or his representatives in token of their acceptance. Employer reserves the right to test check the measurements to the extent of 25% of measurements of each and/ or all items verified by the Engineer- in-Charge and any discrepancies are found they shall be corrected by the Employer and it shall be binding on the contractor. If the contractor objects to any of the measurements corrected a note shall be made to that effect with reason and signed by both parties.

(iv) THE contractor shall, without extra charge, provide all assistance by providing appliance, labour and other things necessary for such measurements and recording levels.

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

(vi) THE contractor shall give not less than seven days' notice to the Engineer- in-Charge or his authorised representative in-charge of the work and Employer before covering up or otherwise placing beyond the reach of measurement any work in order

that the same may be test checked and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer-in-Charge or his authorised representative in-charge of the work and Employer who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Engineer-in-Charge's and Employer consent being obtained in writing the same shall be uncovered at the contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed. No earthwork shall be started without recording initial ground levels in the level field book jointly signed by both the parties in token of acceptance.

(vii) Whenever any payment for lead in earthwork or any other item of work is involved as an item of work, separately or together with any other item of work, the contractor shall get the lead measured jointly by the Engineer-in-Charge before executing any work and obtain the approval in writing of the Engineer-in-Charge failing which the lead as decided by the Engineer-in-Charge and or Employer shall be treated as final and binding on the contractor. In the case of earth work of cutting, filling and disposal, lead charts shall be prepared by the contractor giving area and quantities to be cut and filled and lead involved and got approved in writing before executing the work failing which lead charts will be prepared by the Engineer-in-Charge as to cause most economic method of cut fill and shall be accepted for payment whether or not work is actually carried out by the contractor accordingly.

(viii) Engineer-in-charge or his authorised representative may cause 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.

(ix) Recording of measurements of any item of work in the measurement book and/or its payment in the interim on account of final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

Clause 7::

(i) No payment shall be made for item of works, estimated to cost **Rs10,00,000/-** (Rupees Ten lakhs) or less till after the whole of the works shall have been completed and certificate of completion given.

(ii) For item of works estimated to cost over **Rs. 10,00,000/-** (Rupees Ten Lakhs) the interim or running account bills, duly accompanied by detailed measurements theoretical consumption of cement, steel and any other item as may be required by the Engineer-in-Charge or the Employer, shall be submitted by the contractor for the work executed on the basis of such recorded measurements on the format of the Employer in triplicates on or before the date of every month fixed for the same by the Engineer-in-charge/employer. The Contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/adjustment of advances for material collected, if any, since the last such payment is not less

than 75 % of the proportionate cost of work as per stipulated progress of work in the contract, in which case the interim bill shall be due on the appointed date of the month after the requisite progress is achieved. Engineer-in-charge shall arrange to have the bill verified by checking or causing to be checked, where necessary, the requisite measurements of the work. In the event of the failure of the contractor to submit the bill, Engineer-in-charge may prepare or cause to be prepared such bills in which event no claims whatsoever due to delays on payment including that of interest shall be payable to the contractor. Payment on account of amount admissible shall be paid by 10th working day after the day of presentation of the bill by the Contractor to the Engineer- in-charge under intimation to the Employer together with the account of the material issued by the Employer or dismantled materials, if any.

(iii) All such interim payments accepted by the Contractor shall be regarded as payments by way of advances against final payment only. These shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Engineer-in-charge relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer-in-charge/Employer under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.

(iv) Pending consideration of extension of date of completion interim payments shall continue to be made as herein provided.

Clause - 8 ::

(v) WITHIN ten days of the virtual completion of the work, the contractor shall give notice of such completion to the Engineer-in- Charge and within thirty days of receipt of such notice the Engineer-in-Charge shall inspect thework.

(vi) If there is no defect in the work Engineer-in-charge shall furnish the contractor with a final certificate of completion. Otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued.

(vii) No final certificate of completion shall be issued, nor shall the work be considered to be complete by the employer until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his / their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or

about which the work is to be executed or of which he may have had possession for the purpose of the execution thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the 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 any such scaffolding or surplus materials as aforesaid except for any sum actually realised by the sale there of.

Clause 8 (A)::

(i) THE CONTRACTOR shall submit one set of completion plan, within 7 days of the completion of the work, showing details of all water supply, sanitary, drainage, electrical and all other services.

(ii) IN case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs.25,000/- (Rs. Twenty Five thousand only) as may be fixed by the Engineer-in-Charge concerned and in this respect the decision of the said Engineer in Charge shall be final and binding on the Contractor.

Clause 9::

(1) The Contractor shall submit the final bill in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. 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, shall be made by the employer 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 authorised representative.

Clause -10:: MATERIALS SUPPLIED BY EMPLOYER ::

No materials will be supplied by the Employer.

Clause -10 A:: MATERIALS TO BE PROVIDED BY THE CONTRACTOR, TESTS

(i) The contractor shall, at his own expense, provide all materials, required for the works other than those which are stipulated to be supplied by Employer, if any.

(ii) The contractor shall, at his own expense and without delay supply to the Engineer-in-charge samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if requested by the Engineer-in-charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply. The Engineer-in-Charge may within thirty days of supply of samples or within such further period as he may require and so intimated to the Contractor in writing, inform the Contractor 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 indicate the specification laid down under the contract are metwith.

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

(iv) 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 Employer and or Engineer-in-Charge or his authorised representative shall at all times have the right to inspect/supervise the works and access to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works. The contractor shall afford every facility and every assistance as required by the Employer/Engineer-in-Charge.

(v) The Engineer-in-Charge/Employer 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 Employer/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/authorised representative of employer shall also have full powers to require other proper materials to be substituted thereof and in case of default the Engineer-in-Charge/ Employer may cause the same to be supplied and all cost which may attend such removal and substitution shall be borne by the Contractor.

Clause 10-B::

A. > SECURED ADVANCE ON MATERIALS::

THE employer may pay to the contractor after entering into the contract or during the progress of the execution of the work on request up to 75% of the assessed value of any materials which are in the opinion of the Engineer-in- Charge non-perishable, non-fragile and non-combustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other cause but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work the amount of such advance shall be recovered/deducted from the next payment made under any of the clause or clauses of this contract.

- B. MOBILISATION ADVANCE::** No advance will be paid.
- C. PLANT AND MACHINERY ADVANCE::** No advance will be paid.
- D. INTEREST APPLICABILITY::** Not applicable for the present case

Clause - 10 C:: ESCALATION:

The rate quoted shall be firm throughout the tenure of the contract including extension of time, if any, granted and will not be subject to any fluctuation due to increase in cost of materials, labour, etc. or any other tax. There shall be NO ESCALATION on the quoted rates.

The basic rates indicated in bill of quantities for material is only to facilitate the Bank to select the material. Any variation in the market price shall be absorbed by the contractor & no extra is payable by Bank.

Clause - 10 D::

The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as employer's property unless otherwise specified and such materials shall be handed over or disposed of to the best advantage of the Employer according to the instructions in writing issued by the Engineer-in-Charge.

Clause - 11::

(i) THE contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner and both as regards materials and otherwise in every respect in strict accordance with the specifications. "The contractor shall also conform exactly,

fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in- Charge and 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 Schedule 'F' or in any Bureau of Indian Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract.

(ii) THE contractor shall comply with these provisions and with due care and diligence execute and maintain the works and provide all labour and materials, tools and plants including 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 these presents.

(iii) The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

Clause - 12:: DEVIATION/ VARIATIONS EXTENT & PRICING::

The Employer and /or The Engineer- in- Charge with the specific approval of the employer shall have power:-

(i) to make alteration in, omissions from, additions to or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and

(ii) to omit a part of the works or Item of the works or reduce the quantity in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitution shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work without any extra compensation except as hereafter provided:

(a) No work which radically changes the original nature of the contract shall be ordered by the Engineer-in-Charge as a deviation.

(b) In the event of any deviation being ordered which in the opinion of the Contractor changes the original nature of the Contract, he shall within fifteen days of having been so ordered bring this to the notice of the Engineer-in-Charge with the reasons but nevertheless carry it out and the disagreement as to the nature of work and the rate to be paid therefore shall be resolved in accordance with Clause 25.

Clause -12.1::The time for completion of the works shall, in the event of any deviations resulting in additional cost over the contract sum being ordered, be extended by the employer if requested by the Contractor as follows ::

- a) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original Contract sum plus
- b) 25% of the time calculated in (a) above or such further additional time as may be considered reasonable on the recommendations of by the Engineer-in-Charge.

Rates for such altered, additional or substituted work shall be determined by the Employer as follows on the recommendations of Engineer-in-Charge:

(i) If the rate for altered, additional or substituted item of work is specified in the Schedule of Quantities, the Contractor shall carry out the altered, additional or substituted item at the same rate. In the case of composite tenders, where two or more schedules of quantities may form part of the contract, the applicable rate shall be taken from the schedule of quantities of that particular part in which the deviation is involved, failing that at the lowest applicable rate for the same item of work in the other Schedules of Quantities.

(ii) If the rate for any altered, additional or substituted item of work is not specified in the Schedule of Quantities, the rate for that item shall be derived from the rate for the nearest similar item specified therein. In case of composite tenders where two or more schedule of quantities form part of the contract, the rate shall be derived from the nearest similar item in the Bills of Quantities of the particular part of works in which the deviation is involved failing that from the lowest of the nearest similar items in other schedule of quantities.

(iii) If the rate for altered, additional or substituted item of work cannot be determined in the manner specified in sub-paras (i) and (ii) above, then such item of works shall be carried out at the rate entered in the Schedule of Rates mentioned in Schedule `F' plus/minus the percentage by which the tendered amount of the works actually awarded is higher or lower than the estimated amount of the works actually awarded.

(iv) If the rate for any altered, additional or substituted item of work cannot be determined in the manner specified in sub-paras (i) to (iii) above, then the rate for such item of work shall be derived from the Schedule of Rates specified in sub-para (iii) above plus/minus the percentage mentioned in the sub-para (iii)above. In the case of materials issued by the Employer, issue rates of materials, with storage charges recovered, enhanced by two and a half percent for profits and overheads shall be adopted in place of schedule Rate plus percentage specified in sub-para(iii), Provided always that if rate(s) for part (s) of an item (s) for such part(s) shall be determined by the Engineer-in-Charge on the basis of the purchase price as supported by the vouchers plus ten per cent for profits and overheads unless the Engineer-in-Charge finds the purchase price unreasonable. In the latter

event the price shall be determined on the basis of market rate(s) prevailing during the fortnight following the date of the order plus ten per cent for profit and overhead.

(v) If the rate for any altered, additional or substituted item of work cannot be determined in the manner specified in Sub-paras (i) to (iv) above, the Contractor shall, within 15 days of the date of receipt of the order to carry out the said work, inform the Engineer-in-Charge of the rate which he proposes to claim for such item of work, supported by analysis of the rate claimed, and the Engineer-in-Charge shall within three months thereafter, after giving due consideration to the rate claimed by the Contractor, determine the rate on the basis of market rate(s). In the event of the Contractor failing to inform the Engineer-in-Charge within the stipulated period of time, the rate which he proposes to claim, the rate for such item shall be determined by the Engineer-in-Charge on the basis of market rate (s)only.

Clause -12.2 :: In the case of contract items, substituted items, contract cum substituted items or additional items which exceed the limits laid down in sub para (vi) of Condition 12.1 above, the contractor may, within fifteen days of receipt of order or occurrence of the excess claim revision of the rates, supported by proper analysis, for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the Schedule of Quantities. Engineer-in-charge shall, within sixty days of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined. In the event of the contractor failing to claim revision of rates within the stipulated period, or if the rates determined by the Engineer-in-charge, No claims shall be entertained after the claim of the finalbills.

Clause -12.3::The provisions of the preceding paragraph shall also apply to the decrease in the rates of items. for the work in excess of the limits laid down in sub para (vi) of Condition 12.1 in accordance with the provisions or sub-paras (i) to(iv)ofCondition12.1andtheEngineer-in-Chargemayaftergivingnoticeto the contractor within one month of the occurrence of the excess and after taking into consideration any reply received from him within fifteen days of receipt of the notice revise the rates for the work in question within **one month** of expiry of the said period of fifteen days having regard to the market rates.

Clause -12.4:: The contractor shall send to the Engineer-in-Charge once every three months an upto date account giving complete details of all claims for additional payments to which the contractor may consider himself entitled and of all additional work ordered by the Engineer-in-Charge which he has executed during the preceding quarter failing which the contractor shall be deemed to have waived his right and to have no claim in thematter.

Clause -12.5 :: No increase or decrease of rates under clause 12.1, 12.2 and 12.3 shall be

made unless within the stipulated period after the order of variation and before the commencement of such quantities a notice shall have been given in writing by the party claiming increase or decrease of rates.

Clause -13:: FORECLOSURE OF CONTRACT IN FULL OR IN PART

(i) The employer shall give notice in writing at any time after acceptance of the tender, if the Employer shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not require the whole or any part of the works to be carried out, to that effect to the Contractor and the contractor shall act accordingly in the matter and the Contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

(ii) The employer may pay to the Contractor at Contract rates full amount for works executed at Site and, in addition, a reasonable amount as certified by the Engineer-in-Charge for the Items hereunder mentioned which could not be utilised on the work to the full extent in view of the foreclosure and the contractor expressly agrees for such payment without demur.

(a) Any expenditure incurred on preliminary site work, e.g., temporary access roads, temporary labour huts, staff quarters and site office.

(b) Employer shall have the option to 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). For materials taken over or to be taken over by the Employer cost of such materials as detailed by Engineer-in-Charge shall be paid. The cost shall, however, take into account purchase price, cost of transportation and deterioration or damage which may have been caused to materials whilst in the custody of the Contractor.

(c) Reasonable compensation for transfer of T & P from Site to Contractor's permanent stores or to his other Works, whichever is less. If T & P are not transported to either of the said places, no cost of transportation shall be payable.

(d) Reasonable compensation for repatriation of Contractor's Site staff and imported labour to the extent necessary.

(e) The reasonable amount of items on (a), (c) and (d) above shall not be in excess of 2% of the cost of the work remaining incomplete on the date of closure, i.e., total stipulated cost of the work as per accepted tender less the cost of work actually executed under the contract and less the cost of contractor's materials at site taken over by the Employer as per item (b)above. Provided always that against any payments due to the contractor on this account or otherwise, the Employer shall be entitled to recover to be credited with any outstanding balances due from contractor for advances 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.

(iii) If any materials supplied by the Employer are rendered surplus, the same except normal wastage shall be returned by the Contractor to the Employer at the 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 the Employers stores, if so required by the Employer shall be paid.

(iv) THE Contractor shall, if required by the Employer/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.

Provided always that against any payments due to the contractor on this account or Otherwise, the Employer 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 Government from the contractor under the terms of the contract.

A compensation for such eventuality, on account of damages etc. shall be payable @ 0.5% of cost of work remaining incomplete on date of closure i.e. total stipulated cost of the work less the cost of work actually executed under the contract shall be payable.

Clause -14:: CANCELLATION OF CONTRACT IN FULL OR PART ::

i. > If contractor ::

(a) at any time makes default in proceeding with the works or any part of the work with due diligence or poor quality of work / workmanship or non compliance of contract specifications and continues to do so after a notice in writing of 7 days from the Employer and or Engineer-in-Charge; or

(b) 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 Employer and or Engineer-in-Charge; or

(c) fails to complete the works or items of work with individual dates of completion, on or before the date(s) of completion, and does not complete them within the period specified in a notice in writing is given to him in that behalf by the Employer and or Engineer-in-Charge; or

(d) shall offer or give or agree to give to any person in Bank service or to any other person on his behalf any gift or consideration of any as an inducement or

reward for doing or for bearing 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 the Employeror;

(e) shall enter into a Contract with the Bank in connection with which commission has been paid or agreed to be paid by him or his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Employer/Engineer-in-Charge; or

(f) shall obtain a Contract with the Employer as a result of wrong tendering or other non-bona-fide methods of competitive tendering;or

(g) being an individual, or in 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

(h) being a company, shall pass a resolution or the Court shall make an order for the winding up of the company or a receiver or manager on behalf of the debenture holders or others shall be appointed or circumstances shall arise which entitle the Court or debenture holders to appoint a receiver or manager;or

(i) shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days;or

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

(k) the Accepting Authority may, without prejudice to any other right or remedy which shall have accrued or shall accrue thereafter to the Employer, by a notice in writing cancel the contract as a whole or only such of items in default from the Contractor.

The Employer / Engineer-in-Charge shall on such cancellation by the accepting authority have powers to, for which the Contractor shall hereby unconditionally agree ::

(a) to take possession of the Site and any materials, constructional plant, implements, stores, etc., thereon; and/or

(b) to carry out the incomplete work by any means at the

risk and cost of the Contractor

- ii. > 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 or damage suffered by the Employer. In determining the amount, credit shall be given to the Contractor for the value of the work executed by him up to the time of cancellation, the value of Contractors' materials taken over and incorporated in the work and use of tackle and machinery belonging to the Contractor.
- iii. > Any excess expenditure incurred or to be incurred by the Employer in completing the Works or part of the Work or the excess, loss or damages suffered or may be suffered by the 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 30days.
- iv. > If the Contractor shall fail to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge with the approval of the Employer shall have the right to sell any or all of the Contractor's unused materials, constructional plant, implements, temporary buildings, etc. and adjust 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.
- v. > Any sums in excess of the amounts due to the Employer and unsold materials, constructional plant, etc., shall be returned to the Contractor, provided always that if cost or anticipated cost of completion by the 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.

In the event of above course being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the work or the performance of the contract.

Clause -15 :: SUSPENSION OF WORK ::

- a) The Contractor shall, on receipt of the order in writing of the Employer, whose decision shall be final and binding on the Contractor, suspend the progress of the Works or any part thereof for such time and in such manner as the Employer may consider necessary so as not to cause any damage or injury to the

work for any of the following reasons::

- (i) on account of any default on the part of the Contractor;
- (ii) for proper execution of the works or part thereof for reasons other than the default of the Contractor;or
- (iii) for safety of the Works or partthereof.

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.

b) If the suspension is ordered for reasons (ii) and (iii) in sub para (a)above.

- (i) the contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of work for which a separate period of completion is specified in the Contract and of which the suspended work forms a part ; and
- (ii) If the total period of all such suspensions in respect of an item or group of items of work for which a separate period of completion is specified in the Contract exceeds thirty days, the Contractor shall, in addition, be entitled to such compensation as the Employer/Engineer-in-Charge may consider reasonable, in respect of salaries and/or wages paid by the Contractor to his employees and labour at Site, remaining idle during the period of suspension, adding thereto the percentage mentioned in Schedule `F' to cover all other expenses including indirect expenses of the Contractor, provided the Contractor submits his claim supported by details to the Employer within fifteen days of the expiry of the period of 30days.

c) If the Works or part thereof is suspended on the orders of the Employer for more than three-months at a time, except when suspension is ordered for reason (i) in sub-para (a) above, the Contractor shall after receipt of such order serve a written notice on the Employer requiring permission within fifteen days from receipt by the Employer of the said notice, to proceed with the Works or part thereof in regard to which progress has been suspended. If such permission is not granted within that time, the Contractor, if he intends to treat the suspension, where it affects only a part of the works as an omission of such part by the Employer or where it affects whole of the Works, as an abandonment of the Works by the Employer shall within ten days of expiry of such period of 15 days give notice in writing of his intention to the Employer. In the event of the Contractor treating the suspension as an abandonment of the Contract by the Employer, he shall have no claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of the work in full but which he could not drivenconsequence of the abandonment. He shall, however, be entitled to such compensation, as the Engineer-in-Charge may consider reasonable, in respect of salaries and/or wages paid by him to his employees and labour

at Site, remaining idle in consequence and of materials collected which could not be utilised on the Works, adding to the total thereof the percentage mentioned in Schedule `F` to cover all other expenses including indirect expenses of the Contractor provided the contractor submits his claim supported by details to the Employer within 30 days of the expiry of the period of 3 months ; Provided, further, that the contractor shall not be entitled to claim any compensation from the Employer for the loss suffered by him on account of delay by the Employer in the supply of materials in Schedule `B` where such delay is covered by difficulties relating to the supply of wagons, force majeure including non- allotment of such materials by controlling authorities, acts of God, acts of enemies of the state/country or any reasonable cause beyond the control of the Employer.

Clause -16:: INSPECTION ::

(i) All works under or in course of execution or executed in pursuance of the Contract shall be at all times be open and accessible to the inspection and supervision of the Engineer-in-Charge and or Employer, his authorised subordinates in charge of the work and to all his superior officers of the Quality Control Organisation of the Employer or any Consultant of the Employer and of the Chief Technical Examiner's Office under Central VigilanceCommission.

(ii) 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 and inspections or have a responsible agent duly accredited in writing present for that purpose. Orders given to the contractor's agent shall be considered to have the same force as if they had been given to the Contractor himself.

IF it shall appear to the Engineer-in-Charge and or Employer or his authorised subordinates in-charge of the work or to the Engineer in charge of Quality Control or any Consultant of the Employer or to the Chief Technical Examiner, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing, which shall be made within twelve months of the completion of the work, from the Employer and or Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for, forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the contractor failing to do so within a period specified by the Employer / Engineer-in-Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under the clause 2 for non-completion of the work in time for this default.

IN such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the

Employer or the competent authority 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 without substantially affecting the utility of the item and the structure or he may reject the work 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 will be final and binding on the contractor.

Clause -17::

If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, curb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wires, trees, grass or grass land, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within twelve months after a certificate final or otherwise or its virtual completion shall have been given by the Employer/Engineer-in-Charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Employer/Engineer-in-Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be then or at any time thereafter may become due to the contractor, or from his security deposit, except for the portion pertaining to asphaltic work which is governed by sub-para (iii) of Clause 35 or the proceeds of sale thereof or of a sufficient portion thereof. **Fifty (50) percent** of the security deposit except the portion pertaining to **asphaltic work** which is governed by sub-para

(iii) of Clause 35, **water proofing work , anti-thermite work** which are governed by **clause 19 of special conditions** may be refunded after the expiry of six months (after the virtual completion of the work) or after the final bill has been prepared and passed whichever is later, and the **remaining fifty (50) percent** of the Security Deposit shall be refunded fourteen (14) days after the expiry of the defect liability period of twelve months after the completion of the work provided that all the works are carried out as per specifications and condition of contract and all the defect and damages are rectified satisfactorily to the satisfaction of the Employer/Engineer-in-Charge.

Clause -18::

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 by the Employer), plant, tools, appliances, implements, ladders, cordage, tackle, scaffolding and temporary works required for the proper execution of the work, whether original, altered or substituted and whether included in the specification or other documents forming part of the contract or referred to in these conditions or not, or which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-Charge as to any matter as to which under these conditions he is entitled to be satisfied, or which he is entitled to require together with carriage therefor to and from the work. The contractor shall also supply without charge the requisite number of persons with the means and materials, necessary for the purpose of setting out works, and counting,

weighing and assisting the measurement for examination at doing 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.

Clause -18 A::

In every case in which by virtue of the provisions sub-section of Section 12, of the Workmen's Compensation Act, 1923, Employer is obliged to pay compensation to a workman employed by the contractor, in execution of the works, Employer shall be entitled to recover from the contractor the amount of the compensation so paid; and, without prejudice to the rights of the Employer under sub-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 by the Employer to the contractor whether under this contract or otherwise. The Employer shall not be bound to contest any claim made against it under Section 12, of the said Act, except on the written request of the contractor and upon his giving to the Employer full security for all cost for which the Employee might become liable in consequence of contesting such claim.

Clause -18 B::

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, the 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 19H or under the Contractors' Labour Regulations, or under the Rules framed by the State or Central Employer from time to time for the protection of health and sanitary arrangements for workers employed by the Contractors, the Employer shall be entitled to 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 sub-Section (2) of Section 20, and sub- Section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, the 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 the Employer to the contractor whether under this contract or otherwise. The Employer shall not be bound to contest any claim made against it under sub- Section (1) Section 20 and sub-Section (4) of Section 21, or any other provisions 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 the Employer might become liable in contesting such claim.

Clause -19::

The contractor shall obtain a valid licence under the Contract Labour (R&A) 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.

The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.

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

Clause -19 A::

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

Clause -19 B:: PAYMENT OF WAGES ::

a) The contractor shall pay to labour employed by him either directly or through sub-contractors, wages not less than fair wages as defined 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. Such wages paid shall not less than the wages fixed by the state and/or Central Employer under the Minimum Wages Act applicable to the work.

b) 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.

c) In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with the Contractor's Labour Regulations made by Employer and or the Employer (State and Central) from time to time in regard to payment of wages, wage period, deductions from wages, recovery of wages not paid and deductions unauthorisedly 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.

d) (i) The Employer and/or his 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.

(ii) Under the provision of Minimum Wages (Central) Rules 1950, the contractor is bound to allow to the labour 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 Employer and or Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labour and pay the same to the persons entitled thereto from any money due to the contractor by the Employer.

In cases where the state Government or Government of the Union of India where all inclusive minimum daily wages are fixed and such wages are inclusive of wages for the weekly day of rest, the question of extra payment for weekly holiday would not arise.

e) The contractor shall comply with the provisions of the payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractors Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made thereunder from time to time.

f) The contractor shall indemnify and keep indemnified the Employer against payments to be made under and for the observance of the laws aforesaid and the Contractors' Labour Regulations without prejudice to his right to claim indemnify from his sub-contractors.

g) 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.

a) 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.

The Contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the Jamadar from the wage of workmen.

Clause -19 C::

IN respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this contract, the contractor shall at his own expense arrange for the safety provisions as per Government and 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 a penalty of Rs.200/- for each default and in addition the Engineer-in-Charge shall be at liberty to make arrangement and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

Clause -19 D::

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

(1) the number of labourers employed by him on the work.

(2) their working hours,

- (3) the wages paid to them,
- (4) the accidents that occurred during the said fortnight showing the circumstances.
- (5) the number of female workers who have been allowed Maternity Benefit according to Clause 19F and the amount paid to them.

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

Clause -19 E::

The contractor shall comply with or cause to be complied with all the rules framed by the State and or Central Government from time to time for the protection of health and sanitary arrangements for workers employed, in respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this contract.

Clause -19 F::

The Contractor shall maintain appropriate records for LEAVE and pay during leave and the same shall be regulated as per relevant/latest labour laws.

Clause -19 G :: DEFAULT AS TO REGULATIONS/RULES ::

(i) IN the event of the contractor(s) committing a default or breach of any of the provisions of Contractors' about 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 filling any statement under the provisions of the above Regulations and Rules which is materially incorrect, the contractor shall without prejudice to any other liability pay to the Employer a sum not exceeding Rs.100/- for every default, breach or furnishing, making, submitting, filing such materially incorrect statements and in the event of the contractor(s) defaulting continuously in this respect, the penalty may be enhanced to Rs.50/- per day for each day of default subject to a maximum of 5 percent of the estimated cost of the work put to tender. The decision of the Engineer-in-Charge / Employer shall be final and binding on the contractors.

(ii) Should it appear to the Engineer-in-Charge/ Employer that the contractor(s) is/are not properly observing and complying with the provisions of the Contractor's Labour Regulations and Model Rules and the provisions of the Contract Labour (Regulation and Abolition) Act 1970, and the Contract Labour (R & A) Central Rules 1971, for the protection of health and sanitary arrangements for work-people the Engineer-in-Charge/ Employer shall have power to give notice in writing to the contractor(s) 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(s) 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(s). The contractor(s) shall erect, make and maintain at his/their own expenses and approved standards all necessary huts and sanitary arrangements required for his/their work-people on the site in connection with the execution of the works, and if the same shall not have been erected or constructed, according to approved standards, the Engineer-in-Charge/ Employer shall have power to give notice in writing to the contractor(s) requiring that the said huts and sanitary arrangements be remodeled and/or reconstructed according to approved standards, and if the contractor(s) shall fail to remodel reconstruct such huts and sanitary arrangements according to approved standards within the period specified in the notice, the Engineer-in-Charge/ Employer shall have the power to remodel or reconstruct such huts and sanitary arrangements according to approved standards at the cost of the contractor(s).

Clause -19 H :: CAMP ::

Facility like toilets, water supply, rest rooms shall be provided for the labours as per labours regulations for similar works.

Clause -19 - I :: COMPLIANCE AS TO EMPLOYEES' SERVICE ::

THE Engineer-in-Charge/ Employer may require the contractor to dismiss or remove from the site of the work any person or persons in the contractors' employment who may be incompetent or misconduct himself or undesirable person and the contractor shall forthwith comply with such requirements.

Clause -19- K :: ILLEGAL OCCUPATION ::

The contractor shall undertake to see that the building under construction is not occupied by anybody unauthorisedly during construction, and is handed over to the Employer through his Engineer-in-Charge with vacant possession of complete building. If such building though completed is occupied illegally, then the Employer shall have the option to refuse to accept the said building/buildings in that position, and delay in acceptance on this account will be treated as delay in completion and for such delay a levy upto 5% of estimated cost put to tender may be imposed by the Employer whose decision shall be final both with regard to the justification and quantum and be binding on the Contractor.

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

Clause - 20 :: COMPLIANCE WITH STATUTE ::

THE Contractor shall comply with all the provisions of the Minimum Wages Act, 1948, Contract Labour (Regulation and Abolition) Act 1970, EPF & MP Act 1952, ESI Act and amendments from time to time and rules framed thereunder and other labour laws affecting contract labour that may be brought into force from time totime.

Clause - 21 :: ASSIGNMENT ::

The contract shall not be assigned or sublet without the written approval of the Employer. And if the contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor, or any of his servants or agent to any officer or person in the employ of the Employer in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Employer shall have power to adopt any of the courses specified in Clause 3 hereof as he may deem best suited to the interest of the Employer and in the event of any of these courses being adopted the consequences specified in the said Clause 3 shall ensue.

Clause - 22 :: REASONABLE COMPENSATION ::

All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of the Employer without reference to the actual loss or damage sustained.

Clause - 23 :: APPROVAL FOR CHANGE IN CONSTITUTION ::

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

Clause - 24 :: DIRECTIONS AS TO WORK ::

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

Clause - 25 :: SETTLEMENT OF DISPUTES AND ARBITRATION ::

- (i) It shall be accepted as an inseparable part of the contract that in matters regarding conditions & clauses of contract, quality of materials, workmanship, removal or rejection of improper work, interpretation of the drawings and specifications, measurements of materials and/or items of work, mode of procedure and carrying out of the work, the decision of the Employer which shall be given in writing, shall be final, conclusive and binding on the contractor.
- (ii) (A) If the contractor considers any work demanded of him to be

outside the requirements of the contract, or considers any drawings record or decision given in writing by the Engineer-in-Charge on any matter in connection with or arising out of the contract or carrying out of work, to be unacceptable, he shall promptly within 15 days request the Accepting Authority in writing for written instruction or decision. Thereon, the Accepting Authority shall give his written instructions or decision within a period of two months from the receipt of the contractor's letter.

(B) Upon receipt of such written instructions or decision the contractor shall promptly proceed without delay to comply with such instructions or decisions. If the Accepting Authority fails to give his instructions or decision in writing within a period of two months after being requested or if the contractor is dissatisfied with the instructions or decision of the Accepting Authority Employer, the Contractor may within 30 days appeal to the Appointing Authority who shall afford an opportunity to the contractor to be heard and to offer evidence in support of his appeal and give his decision in writing within a period of Thirty (30) days from the receipt of the contractor's request. If the contractor is dissatisfied with the decision of the appointing authority, then the contractor shall within a period of Thirty (30) days from receipt of the decision of the Appointing authority shall indicate his intention to refer the dispute to Arbitration, failing which the said decision of the Appointing authority shall be final and conclusive and not referable to adjudication by the Arbitrator.

(iii) All disputes or differences in respect of which decisions have not been final, binding and conclusive as above shall be referred for adjudication by the arbitration by a Sole Arbitrator appointed as follows:

Within Thirty (30) days of receipt of notice from any party to the contract for appointment of the Arbitrator the Appointing authority, in charge of the work (Schedule F) at the time of such appointment shall send to the contractor a panel of three names of persons who shall not presently be connected with the work.

The contractor shall within fifteen (15) days of receipt of this list select and communicate to the Appointing authority the name of one person from the list who shall then be appointed as the sole arbitrator by the Appointing authority.

If contractor fails to communicate his selection of name of the person, within Fifteen (15) days as stipulated, the Appointing authority shall without delay select one person from the list and appoint him as Sole Arbitrator.

If the Appointing authority fails to send such a list within Thirty (30) days as stipulated, the contractor shall send a similar list to the Appointing authority within fifteen (15) days. The Appointing authority shall then select one person from the list and appoint him as the Sole Arbitrator within Thirty (30) days of the receipt of the list. If the Appointing authority fails to do so then the contractor shall communicate to the Appointing authority the name of one person from the list who shall then be the Sole Arbitrator.

If the Arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another sole

Arbitrator shall be appointed in the manner aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

(iv) It is term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the Appointing authority of the appeal and a copy of his notice(s) of intention to refer the dispute to arbitration of such disputes as mentioned in Part (ii) above failing which the notice for appointment of the Arbitrator shall not be treated as notice for appointing the arbitrator.

(v) It is also a term of this contract that no person other than a person appointed by Appointing authority, in charge of the work as aforesaid should act as arbitrator and if for any reason that is not possible, the matter shall not be referred to arbitration at all.

(vi) It is also a term of the contract that if the contractor does not make any demand for appointment of arbitration in respect of any claims in writing as aforesaid within 90 days of receiving the intimation from the Appointing authority that the final bill is ready for payment, the claim of the contractor shall be deemed to have been waived and absolutely barred and the Employer shall be discharged and released of all liabilities under the contract in respect of these claims. No party shall be entitled to bring any claim to arbitration if the arbitrator has not been appointed before the expiry of sixty days after defect liability period.

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

(viii) The Arbitrator may from time to time with the consent of the parties enlarge the time for making and publishing the award.

(ix) It is also a term of this contract that the Arbitrator shall ad judicial on only such disputes as are referred to him by the appointing authority and give separate award against every dispute and claim referred to him and in all cases where the total amount of the claims byn any party exceed the amount specified in Schedule. `F ' the arbitrator shall give reasons for the award separately for every dispute.

(x) It is also a term of the contract that any fees, TA, DA and other charges are payable to the Arbitrator shall be paid by both the parties equally.

(xi) The venue of the arbitration shall be such a place as may be fixed by the Arbitrator in his sole discretion.

(xii) It is also a term of the contract that the Arbitrator shall be deemed to have entered on the reference on the date of first hearing. The fees, and charges of the Arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the Arbitrator) shall be in the discretion of the Arbitrator who may direct to and by whom and in what manner, such costs or any part thereof shall be paid and fix or settle the amount of costs to be so paid.

(xiii) The award of the Arbitrator shall be final and binding on both the parties.

Clause - 26:: INDEMNITY ::

The Contractor shall keep and hold the Employer indemnified and harmless from time to time and at all times against all actions, prosecutions proceedings, claims, suits, liabilities (including statutory liability), penalties, demands, charges, costs (including legal costs) and expenses, damages, losses and any other expenses which may be caused to or suffered by or made or taken against the Employer arising out of:

- i) The breach, default or non-performance of undertakings, warranties, covenants or obligations by the contractor, non-compliance of safety rules, regulations, instructions by the contractor and mishaps occurring at the site due to faulty work executed by the contractor.
- ii) Any contravention or Non compliance with any applicable laws, regulations, rules, statutory or legal requirements by the Bidder.

Further, the Contractor shall indemnify, protect and save the Employer against all claims, losses, costs, damages, expenses, action suits and other proceedings, resulting from infringement of any law pertaining to patent, trademarks, copyrights etc. or such other statutory infringements in respect of the services offered by the contractor.

All Indemnities shall survive notwithstanding expiry or termination of the contract and contractor shall continue to be liable under the indemnities.

There is no limit to claims made by the Employer / third parties in case of infringement of Intellectual property rights or for claims relating to the loss of damage to real property and tangible personal property and for bodily injury or death and in these cases the liability will be unlimited ”.

Indemnity format is enclosed as Annexure - 20. The same to be duly filled and submitted by the successful bidder in a non-judicial stamp paper of appropriate value.

Clause - 27:: ESTIMATE ::

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

Clause -28:: ACTION WHERE NO SPECIFICATIONS ARE SPECIFIED::

In the case of any class of work for which there is no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers' specifications, if not available then as per District Specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in- Charge.

Clause - 29:: LIEN ::

(a) 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 the security, if any deposited by the Contractor and for the purpose aforesaid, the Engineer-in-Charge or the Employer shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the Engineer-in-Charge or the Employer shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with the Employer pending finalization or adjudication of any such claim.

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

(c) It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or the Employer will be kept withheld or retained as such by the Engineer-in- Charge

or the Employer till the claim arising out of or under the contract is determined by the arbitrator (if the contracts 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.

Clause -29 A:: RIGHT TO AUDIT/TECHNICAL EXAMINATION ::

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 even after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for the Employer to recover the same from him in the manner prescribed in clause 29 or in any other manner legally permissible and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by the Employer to the contractor, without any interest thereon; Provided that the contractor shall not be entitled to payment of any sum paid short where such payment has been agreed upon between the Employer and Engineer-in-Charge on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the Employer and Engineer-in-Charge.

Clause - 30:: CONTROLLED AREA LABOUR ::

The contractor shall not employ coal mining or controlled area labour falling under any category whatsoever on or in connection with the work 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., depot imported labour or labour imported by contractors from area, from which import is permitted. 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.

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 Government a sum calculated at the rate of Rs.10/- per day per labourer. The certificate of the Engineer-in-Charge about the number of coal mining or controlled area labourer and the number of days for which they worked shall be final and binding upon all parties to this contract.

The aforesaid stipulation in this clause is one in which the public are interested within the meaning of the exception in Section 74 of Indian Contract Act, 1872.

Any area which may be declared a 'controlled Area' by or with the approval of the Central Government.

Clause - 31 :: WATER SUPPLY

The contractor(s) shall make his/their own arrangements for water required for the work and nothing extra will be paid for the same.

Clause - 32 :: ALTERNATE WATER SUPPLY ::

(i) Where there is no piped water supply arrangement and the water is taken by the contractor from the wells or hand pump constructed by the Employer, if any, **charge at 1 % (one percent) of the Gross value** of the work shall be recovered from the contractor on that account. The contractor shall, however, draw water at such hours of the day that it does not interfere with the normal use for which the hand pumps and wells are intended. He will also be responsible for all damage and abnormal repairs arising out of his use, the cost of which shall be recoverable from him. The Engineer-in-Charge shall be the final authority to determine the cost recoverable from the contractor on this account and his decision shall be binding on the contractor.

Clause - 33 :: TRUST ::

Notwithstanding anything contained to the contrary herein , where any material for the execution of the contract are procured with the assistance of the Employer either by issue from Employers stocks or purchase made under orders or permits or licences issued by the Employer or with the assistance of the Employer the contractor shall hold the said materials economically and solely for the purpose of the contract and not dispose of them without the written permission of the Employer and return, if required by the Engineer-in-Charge, all surplus or unserviceable materials that may be left with him after the completion of the contract or at its termination for any reason whatsoever on being paid or credited such price as the Engineer-in-Charge shall determine having due regard to the condition of the materials. The price allowed to the contractor however shall not exceed the amount charged to him excluding the element of storage charges. The decision of the Engineer-in-Charge shall be final and conclusive. In the event of breach of the aforesaid condition the contractor shall in addition to throwing himself open to action for contravention of the terms of the license or permit and/or for criminal breach of trust, be liable to the Employer for all moneys, advantages or profits resulting or which in the usual course would have resulted to him by reason of such breach.

Clause - 34 :: ARRANGEMENTS OF MACHINERY EQUIPMENT ::

The contractor shall arrange at his own expense all tools, plant, machinery and equipment required for execution of the work.

Clause - 35 :: UNDERTAKING BY THE CONTRACTOR & DLP::

(i) The contractor shall be responsible for rectifying defects noticed in the works within a year (i.e. one year) from the date of completion of the work. For specialized works the guarantee shall be for 10years.

Clause - 36:: CONTRACTORS SUPERINTENDENCE, SUPERVISION, TECHNICAL STAFF & EMPLOYEE ::

(i) The contractor shall provide all necessary superintendence during execution of the work and as long thereafter as may be necessary for proper fulfilling of the obligations under the contract.

The contractor shall immediately after receiving letter of acceptance of the tender and before commencement of the work, intimate in writing to the Employer 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 Schedule F. The Employer shall within 30 days of receipt of such communication intimate in writing his approval or otherwise of such a representative to the contractor. Any such approval may at any time be withdrawn and in case of such withdrawal the contractor shall appoint another such representative according to the provisions of this clause. Decision of the tender accepting authority shall be final and binding on the contractor in this respect. The work shall be started only after such a principal technical representative is appointed.

If the contractor (or any partner in case of firm/company) who himself has such qualifications, it will not be necessary for the said contractor to appoint such a principal technical representative but the contractor shall disengage and appoint a responsible agent to represent him to be present at the work whenever the Contractor is not in a position to be so present. All the provision applicable to the Principal Technical representative under this clause will also be applicable in the case of contractor or his responsible agent. The Principal Technical representative and/or the contractor shall on receiving reasonable notice from the Engineer-in-Charge or his designated representative(s) in charge of the work in writing or in person or otherwise, present himself to the Engineer-in-Charge and/or at the site of work, as required, to take instructions.

Instructions given to the principal technical representative or the responsible agent shall be deemed to have the same force as if these have been given to the contractor. The Principal Technical Representative and/or the contractor or his responsible authorised agent shall be actually available at site atleast on two working days every week, these days shall be determined in consultation with the Engineer-in-Charge as well as fully during important stages of execution of work, during recording of measurement of works and whenever so required by the Engineer-in-Charge by a notice as aforesaid and shall also note down instructions conveyed by the Engineer-in-Charge or his designated representative in the site order book and shall affix his signature in token of noting down the instructions and in token of acceptance of measurements. There shall be no objection if the representative/agent looks after more than one work and not more than three works in the same station provided these details are disclosed to the Engineer-in-Charge and he shall be satisfied that the provisions and the purpose of this clause are fulfilled satisfactorily.

If the Engineer-in-Charge, whose decision in this respect is final and binding on

the Contractor is convinced that no such technical representative or agent is effectively appointed or is effectively attending or fulfilling the provision of this clause, a recovery shall be effected from the Contractor as specified in Schedule 'F' and the of the Engineer-in-Charge as recorded in the site order book and measurements recorded in Measurement Books shall be final and binding on the contractor.

Further if the Contractor fails to appoint a suitable technical representative or responsible agent and if such appointed person(s) or not effectively present or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as a suitable agent is appointed and the Contractor shall be held responsible for the delay so caused to the work. Contractor shall submit a certificate of employment of the technical representative/responsible agent along with every on account bill/final bill and shall produce evidence if at any time so required by the Engineer-in-Charge.

(ii) 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, semi-skilled and unskilled labour as is necessary for proper and timely execution of the work.

The Engineer-in-Charge shall be at liberty to object to and require the contractor to remove from the works any person who in his opinion misconduct himself, or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the Engineer-in-Charge to be undesirable. Such person shall not be employed again at works site without the written permission of the Engineer-in-Charge and the persons so removed shall be replaced as soon as possible by competent substitutes.

Clause - 37:: TAXES ::

(i) Goods & Services Taxes, Entry Tax, Cess, Profession tax, Turnover tax or any other tax on materials and/or completed works unless otherwise specifically excluded in respect of this contract shall be payable by the contractor and Employer shall not entertain any claim whatsoever in this respect other than normal payment for completed item of work at the accepted rate.

(ii) Goods & Services Taxes (Item rates) on works contract on finished works wherever applicable shall be paid by Bank as per extant rules.

(iii) The contractor shall deposit royalty and obtain necessary permit for supply of the red bajri, stone, kankar etc. from local authorities. All the accepted rates for the work shall be deemed to include all such charges.

(iv) If pursuant to or under any law, notification or order any royalty, cess, fee or

the like becomes payable by the Employer and does not at any time become payable by the contractor to the State Government and/or the 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 the Employer will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from dues of the contractor.

Clause - 38:: TENDERED RATES ::

(i) All tendered rates shall be inclusive of all taxes, royalties, cess and levies etc as stated in clause-37.I and payable under respective statutes. However, pursuant to the Constitution (Forty Sixth amendment) Act, 1982, if any further new tax royalties cess or levy is imposed by Statute, after the date of receipt of tenders, and the contractor there upon necessarily and properly pays such taxes/levies the contractor shall be reimbursed the amount so paid, provided such payments, if any, is not, in the opinion of the Employer (whose decision shall be final and binding on the contractor) attributable to delay in execution of work within the control of the contractor.

(ii) The contractor shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorised representative of the Employer and/or the Engineer-in-Charge and further shall furnish such other information/document as the Engineer-in-Charge may require from time to time.

(iii) The contractor shall, within a period of 30 days of the imposition of any such further tax royalties, cess, or levy, pursuant to the constitution (Forty sixth Amendment) Act 1982, give a written notice thereof to the Employer and Engineer-in-Charge that the same is given pursuant to this condition, together with all necessary information relating thereto.

Clause - 39:: DEATH ::

Without prejudice to any of the rights or remedies under this contract if the contractor dies, the Employer shall have the option of terminating the contract without compensation to the contractor.

Clause - 40:: RELATIVES ::

The contractor shall not be permitted to tender for works in the Circle office of the Canara Bank (responsible for award of execution of contracts) in which his near relative is posted as an officer in any capacity between the grades of the General Manager and Manager (both inclusive) of premises and estate department. He shall also intimate the names of persons as per **Annexure 05** who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Officer in the Canara Bank or the Engineer in Charge employed by the Canara Bank for the work. Any breach of this condition by the Contractor would render him liable to be removed from the approved list of contractors of the Employer.

Note:-By the term "near relatives" is meant wife, husband, parents and grand parents, children and grand children, brothers and sisters, direct uncles and aunts and firstcousins.

Clause - 41:: EX-EMPLOYEES ::

No Engineer or other officer employed in the Canara Bank shall work as a contractor or employee of a contractor for a period of two years after his retirement from the Bank's service without the previous permission of the Employer. This contract is liable to be canceled if either the contractor or any of his employees is found at any time to be such person who had not obtained the permission of the Employer as aforesaid, before submission of the tender or engagement in the contractors' service, as the case may be. Names of such persons employed by the Contractor shall be informed as per **Annexure 18**.

Clause -42:: METHOD TO CALCULATE CONSUMPTION OF MATERIALS ::

(i) After completion of the work and also at any intermediate stage in the event of non-reconciliation of materials issued, consumed and in balance, theoretical quantity of materials issued by the Employer or the material brought by the contractor for use in the work shall be calculated on the basis and method given hereunder:-

a) Quantity of cement and Bitumen shall be calculated on the basis of quantity of cement and Bitumen required for different items of works shown in the Schedule of Rates mentioned in Schedule 'F'. In case any item is executed for which standard constants for the consumption of cement or bitumen are not available in the above mentioned schedule/statement or cannot be derived from the same shall be calculated on the basis of standard formula to be laid down by the Employer or Engineer-in-Charge.

b) Theoretical quantity of steel reinforcement or structural steel sections shall be taken as the quantity required as per design or as authorised by Engineer-in-Charge.

c) For any other material as per actual requirement and as approved by the Engineer-in-Charge.

(ii) Such theoretical consumption statements shall be prepared at every bill stage for the consumption of cement, steel (diameter wise and section wise) Bitumen and any other material specified by the Engineer-in-Charge in the same method and manner as in sub para (i) above even if such materials are procured by the contractor and not issued by the Employer.

(iii) Over the theoretical quantities of materials so computed a variation shall be allowed as specified in Schedule 'F'. The difference in the net quantities of material actually issued to or procured by the contractor and the theoretical quantities including such authorised variation, if not returned by the contractor (for materials issued by the Employer) or if not fully reconciled to the satisfaction

of the Engineer-in-Charge shall be recovered at the rates specified in Schedule 'F', without prejudice to the provision of the relevant conditions regarding return of materials governing the contract. In the case of materials procured by the contractor the cost of such material used less than the theoretical requirement shall be recovered at full market Rate plus the cartage cost to site.

(iv) The said action under this clause is without prejudice to the right of the Employer to take action against the contractor under any other conditions of the contract for not doing the work according to the prescribed specifications.

Clause - 43::

The work (whether fully constructed or not) and all materials, machines, tools and plants, scaffolding, temporary buildings and other things connected therewith shall be at the risk of the contractor until the work has been delivered to the Employer and a certificate from Engineer in charge to that effect obtained. In the event of the work or any materials properly brought to the site for incorporation in the work being damaged or destroyed in consequence of hostilities or warlike operation, the contractor shall when ordered (in writing) by the Engineer-in-Charge to remove any debris from the site, collect and properly stack or remove in store all serviceable materials salvaged from the damaged work and shall be paid at the contract rates in accordance with the provision of this agreement for the work of clearing the site of debris, stacking or removal of serviceable material and for reconstruction of all works ordered by the Engineer-in-Charge, such payments being in addition to compensation upto the value of the work originally executed before being damaged or destroyed and not paid for. In case of works damaged or destroyed but not already measured and paid for, the compensation shall be assessed by the Engineer-in-Charge upto Rs.5,000/- and by the Employer concerned for a higher amount. The contractor shall be paid for the damages/destruction suffered and for the restoring the material at the rate based on analysis of rates tendered for in accordance with the provision of the contract. The certificate of the Engineer-in-Charge regarding the quality and quantity of materials and the purpose for which they were collected shall be final and binding on the contractor.

Provided always that no compensation shall be payable for any loss in consequence of hostilities or war-like operations (a) unless the contractor had taken all such precautions against air raid as are deemed necessary by the Engineer-in-Charge (b) for any material etc. not on the site of the work or for any tools, plant, machinery, scaffolding, temporary building and other things not intended for the work.

IN the event of the contractor having to carry out reconstruction as aforesaid, he shall be allowed such extension of time for its completion as is considered reasonable by the employer.

Clause - 44 :: APPRENTICES ::

The contractor shall comply with the provisions of the Apprentices Act, 1961 and the rules and orders issued there under from time to time. 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.

Clause - 45 :: CLEARANCE CERTIFICATE ::

Security Deposit of the work shall not be refunded till the contractor produces a clearance certificate / NOC from the Authority . As soon as the work is virtually complete the contractor shall apply for the clearance certificate to the appropriate Authority under intimation to the Engineer-in-Charge.

Clause - 46:: DAMAGES & INSURANCE ::

The Contractor shall be responsible for all injury to the work or workmen to persons, animals or things and for all damages to the structural and/or decorative part of property which may arise from the operations or neglect of himself or of any sub-contractor or of any of his or a sub-contractors employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract. The clause shall be held to include interalia, any damages to buildings whether immediately adjacent or otherwise, and any damage to roads, streets, footpaths or ways as well as damages caused to the buildings and the works forming the subject if this contract by rain, wind or other inclemency of the weather. The contractor shall indemnify the employer and hold harmless in respect of all and any expenses arising from such injury or damages to persons or property as aforesaid and also in respect of any claim made in respect of injury or damage under any acts of compensation or damage consequent upon such claim.

The Contractor shall reinstate all damage of every sort mentioned in this clause, so as to deliver the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damages to the property or third parties. The contractor shall effect the insurance necessary and indemnify the employer entirely from all responsibility in this respect. The insurance must be placed with a company approved by the employer and must be effected jointly in the name of the contractor and the employer and the policy lodged with the latter. The scope of insurance is to include loss or damage to the work and workmen due to carelessness, accident including fire, earthquake, floods, etc., damage or loss to the contract itself till this is make over a complete state. Insurance is compulsory and must be effected from the very initial stage. The contractor shall also be responsible for anything which may be excluded from damage to any property arising out of incidents, negligence or defective carrying out of this contract.

The employer shall be at liberty and is hereby empowered to deduct the amount of any damages, compensations, costs, charges and expenses arising or occurring from or in respect of any such claim or damages from any sums due or to become due to the contractor.

Clause - 47:: INSURANCE ::

The contractor shall insure the works and keep them insured until the virtual completion of the contract against loss or damages by fire and/or earthquake, flood. The insurance must be placed with a company approved by the Employer, in the joint names of the employer and the contractor for such amount and for any further sum if called to do so by the employer and lodge receipts of premiums paid with the employer within 21 days from the date of issue of letter of acceptance unless otherwise instructed. In default of the contract insuring as provided above, the employer on his behalf may so insure and deduct the premiums paid from any money due or which may become due to the contractor. The contractor shall as soon as the claim under the policy is settled or the work reinstated by the insurance company should they elect to do so, proceed with due diligence will the completion of the works in the same manner as though the damages has not occurred and in all respects under the conditions of the contract. The contractor in case of rebuilding or reinstatement after fire shall be entitled to extension of time for completion as the employer/architect may deem fit.



SPECIAL CONDITIONS

1. Scope:

The works to be governed by this contract shall cover Fire fighting Hydrant System works as specified in the **schedule A & E** along with all services, including all materials, labour, delivery and transportation up to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works.

The Contractor shall bear any incidental expenses. Any statutory payments, deposits, fee made to the appropriate authorities for permanent services connections shall be reimbursed by the Employer provided the receipts/ deposits are in the name of the Canara Bank.

The works to be undertaken by the contractor at their own cost shall inter alia include the following:

- i. Preparation of detailed drawings and AS BUILT drawings wherever applicable.
- ii. Obtaining of Statutory permissions where-ever applicable and required.
- iii. Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
- iv. Warranty obligation for the equipment and/or fittings/fixtures supplied by the contractor.
- v. Liaisoning with the Fire authorities, BDA or local authorities including completion of work to the satisfaction of these authorities and to obtain NOC from Fire Department as per requirement of the Bank . Co-ordination with various stakeholders / agencies for resolution of issues/problems etc. (The supporting documents and GOVT fee will be provided by the Bank). Final payment to the contractor will be made after getting NOC from competent Authorities .
- vi. Removing, demolishing and cutting existing partition, glass, ceiling etc as per requirement in phase manner to not affecting the working condition of the office .It also include making the same repaired as per direction of Bank . Complete the job in all respect i.e cleaning, removing the damaged material outside the premises as per instruction, including all labour.

All the hidden items such as reinforcement steel, electrical conduits, water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested as per the design conditions before covering and their measurements in measurement book duly test checked shall be deposited with Engineer in charge or his authorized representative, prior to hiding these items.

2. Precautionary measures:

Temporary barricading shall be provided at site by the contractor at his own cost. The barricading physically define the boundaries of the plot for restricted entry to only those involved in the work and also to prevent any accident and also not causing any inconvenience to the traffic. Any further barricading as required for basement excavation at Site shall be provided by the contractor at his own cost. The barricading should be made in suitable size, shapes and number as directed by Engineer-in-charge without any extra cost. It shall be dismantled and taken away by the contractor after completion of the work at his own cost with the approval of Engineer-in- charge.

Contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost.

The contractor shall take all precautions to prevent his workmen and employees from removing and damaging any Flora (tree/plant/vegetation) from

the site.

The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused to work due to negligence on his part. No hindrances shall be caused to traffic, during the execution of the work. In case of any accident of the labourers / contractual staff, the entire responsibility will rest on the contractor and any compensation under such circumstances, if becomes payable, shall be entirely borne by the contractor.

The contractor, his authorized representative, workmen etc. shall strictly observe orders pertaining to fire precautions prevailing in the area.

The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general .The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The Contractor shall use such methodology and equipments for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer in Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the Contractor shall take all precautions to prevent any pollution of streams and waterways. All waste or superfluous materials shall be carted away by the Contractor, entirely to the satisfaction of the Engineer-in-Charge. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Contractors are advised to visit site and get first hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

3. General cleanliness of the Site and Stacking & Storage of Materials:

The site of work shall be always kept clean in general strictly adhering to approved job layout/specifications. The Contractor shall take all care to prevent any water-logging at site. The waste water shall not be allowed to be collected at site. It may be directly pumped into the public drainage system with prior approval of the concerned authorities. For discharge into public drainage system, necessary permission shall be obtained from relevant authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried

out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.

The contractor shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, compound wall, services etc are to be constructed. The stacking shall be done as per stacking plan. However, if any change is required, the same shall be done with the approval of Engineer-in-Charge.

For construction works which are likely to generate malba / rubbish, contractor shall dispose of malba, rubbish & other unserviceable materials and wastes at his own cost to the dumping ground notified by local authorities and under no circumstances these shall be stacked / dumped even temporarily, outside the premises.

The contractor shall not stack material / malba on the road or on the land owned by any other authority, as the case may be. In case, the Contractor is found stacking the material / malba as stated above, he shall be liable to pay the stacking charges as may be levied by local body or authority and also to face penal action as per the rules, regulations and bye-laws of the said body or authority. The Engineer-in-Charge shall be at liberty to recover the sums due but not paid to the concerned authorities on the above counts from any sums due to the contractor including amount of the Security Deposit or Retention Money in respect of this contract or any other contract.

The contractor shall construct suitable godowns, yard at the site of work for storing all other materials so as to be safe against damage by sun, rain, damages, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost.

4. Laboratory Equipment:

The contractor shall provide at his own cost suitable measuring tapes, weighing, surveying and leveling and measuring arrangements as may be necessary at site for checking. All such equipments shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account. Minimum equipments as required for field tests shall be provided at site without any extra cost to the Employer.

5. Setting Out of works

The contractor shall establish, maintain and assume responsibility for grades, lines, levels and bench marks. Contractor shall report any errors or inconsistencies regarding grades, lines, levels, dimensions to the Engineer-in-

Charge before commencing work. Commencement of work shall be regarded as the contractor's acceptance of such grades, lines, levels and dimensions and no claim shall be entertained at a later date for any errors found.

If at any time, any error in the respect of setting out appears during the progress of the work, the contractor shall, at his own expense rectify such error if so required, to the satisfaction of the Engineer-in-Charge.

a) The contractor shall provide, protect and maintain temporary / permanent benchmarks at the site of work throughout the execution of the work. These bench marks shall be got checked by the Engineer-in- Charge or his authorized representatives. The work at different stages shall be checked with reference to bench marksmaintained for the said purpose. All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings. Nothing extra shall be payable on this account.

b) The approval by the Engineer-in-Charge, of the setting out by the contractor, shall not relieve the contractor of any of his responsibilities and obligation to rectify the errors/defects, if any, which may be found at any stage during the progress of the work or after the completion of the work.

The contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the contractor at his own cost to the instructions and satisfaction of the Engineer-in-charge.

The Contractor shall carry out survey of the work area, at his own cost, setting out the layout of building in consultation with the Engineer-in-Charge & proceed further. Any discrepancy between the architectural drawings and actual layout at site shall be brought to the notice of the Engineer-in-charge. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Nothing extra shall be payable on this account.

6. Architectural, structural and integrated servicedrawings:

The working & detailed architectural drawings and Fire drawings shall be issued as and when required according to the programme chart submitted by the contractor. It is the duty of the contractor to intimate the requirement of drawings reasonably well in advance and no hindrance shall be allowed on this account.

The work shall be carried out in accordance with the Architectural drawings and Fire drawings, to be issued from time to time, by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and Fire drawings issued for the work, nomenclature of

items, specifications etc. and satisfy himself that the information available there from is complete and unambiguous. The figures & the written dimensions of the drawing shall supersede the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-Charge for immediate decision before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and/ or incomplete information and no claim, whatsoever shall be entertained on this account. The delay caused on account of non- timely action by the contractor in resolution of the differences whatsoever shall not be considered as valid ground for extension of time unless otherwise accepted by Engineer incharge.

The information and site data shown in the drawings and mentioned herein and also elsewhere in the tender documents are being furnished for general information and guidance only. The Engineer-in Charge/ Employer shall not bear responsibility for lack of such knowledge and also the consequences thereof. The Engineer-in-charge/ Employer in no case shall be held responsible for the accuracy thereof or any interpretation/ or conclusions drawn there from by the contractor.

Before taking up the work, the contractor shall be provided with working drawings for various civil and electrical services showing details of lay out plan including sectional elevations and the contractor shall plan and mobilize his resources as per the working drawings and as per the site conditions to facilitate convenient execution, installation as well as maintenance of these services. Nothing extra shall be payable on this account.

7. Scaffolding & Staging:

Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the contractor. The scaffolding shall be provided strictly with steel double scaffolding system, suitably braced for stability, with all the accessories, gangways, etc with adjustable suitable working platforms to access the areas with ease for working and inspection. Single scaffolding system is strictly prohibited and shall invite necessary action. It shall be designed to take all incidental loads. It should cater to the safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding.

8. Procurement of materials and Basic rate:

All material shall only be brought at site as per program finalized with the Engineer-in-Charge. Any pre-delivery of the material not required for immediate consumption shall not be accepted and thus not paid for.

The contractor shall procure the required materials in advance so that there is sufficient time for testing of the materials and approval of the same before use in the work.

9. Quoted Rates and other conditions for payment:

The rates quoted by the Contractor for the descriptions given in the Schedule of quantities (SOQ) are deemed to be inclusive of the following apart from other inclusions elsewhere stipulated in these documents:

Site clearance, setting out work, profile, establishment of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, barricading, signage, labour safety, welfare, preparatory works, working during monsoon, working at all depths, height, lead, lift and location etc until / unless specified otherwise, and any other incidental works required to complete this work. Nothing extra shall be payable on this account.

For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of water is required the contractor shall do it and nothing extra shall be paid except otherwise provided in the items of Schedule of quantities.

Any legal or financial implications resulting out of disposal of earth shall be sole responsibility of the contractor. Nothing extra over the schedule shall be paid on this account.

All labour, material, tools and plants, temporary water, sewerage, electricity connection charges & works and other inputs involved/ required in the execution of the item.

Conducting Tests materials and works wherever stipulated Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items.

For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.

The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and obtain all requisite licenses wherever required and shall pay to such authority all the fees that is required to be paid for the execution of work. Nothing extra shall be payable on these accounts.

All ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at the basement level, temporary structure for plants and machineries, water storage tanks, installation

and consumption charges of temporary electricity, telephone, water etc. required for execution of the work, liaison with municipal / statutory authorities etc., protection works, barricading, testing facilities / laboratory at site of work, facilities for all field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in Charge), shall be deemed to be included in rates quoted by the Contractor for various items in the Schedule of quantities. Nothing extra shall be payable on these accounts.

Final testing of the installation:

The Contractor shall demonstrate trouble free functioning of the Fire Fighting System and services. Any defect(s) noticed during demonstration shall be rectified by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge. Nothing extra shall be payable on this account.

Contributions towards the EPF & ESI for the labour, employees engaged by the contractor wherever applicable shall be paid by the Contractor, Nothing extra shall be payable on this account.

10. Local laws:

The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by Collector / Municipal authorities etc. and any other statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities.

The contractor shall ensure that applicable permits mandated by the local bodies and in case warranted for this work are obtained as required under the Applicable Laws.

The building work shall be carried out in the manner complying in all respects with the requirements of relevant bye-laws of the local body and sanctioned plans under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-Charge and nothing extra shall be paid on this account.

11. Water Supply & Sanitary Installations & Testing:

Not applicable.

12. Recording of Hindrances:-

Whenever any hindrance whether on part of Employer or on part of contractor, comes to the notice of the Engineer in charge, the contractor should at once make a note of such hindrance in the register kept at site, and immediately make a report to the Engineer in charge within a week.

Each hindrance should be entered in the Hindrance Register, (as per Annexure 14) which should be authenticated by the Engineer In charge and Contractor. The Employer shall review the Hindrance Register at least once in a month.

The hindrances on part of contractor are also to be entered in the Hindrance Register.

The hindrance register shall be submitted at the time of payment of each Running Account Bill.

13. Progress and monitoring of work:

The contractor shall submit the progress report for the work done during previous month to the Engineer-in charge on or before 5th day of each month. The progress report shall contain the following, apart from whatever else may be required as specified:-

(i) Construction schedule of the various components of the work through a bar chart for the next three months (or as may be specified), showing the inter milestones, targeted tasks and up to date progress. At least 3 digital photographs showing all the parts of the work in various stages during construction/repairs/restoration/concealed works in soft and hard copy have to be submitted in every monthly progress report.

(ii) Progress chart of the various components of the work that are planned and achieved, for the month as well as cumulative up to the month, with reason for deviations, if any in a tabular format.

(iii) The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion.

14. Project review meetings:

The contractor, immediately on award of work shall submit details of his key personnel to be engaged for the work at site. In addition, he shall furnish the Employer detailed organization involved with the work.

Monthly Review Meetings: Shall be attended by Contractor / their

representatives who can take independent decisions along with Engineer-in-charge and Bank's representatives.

15. Hardware and sanitary wares:

Engineer-in-Charge will take a decision regarding make of materials, model numbers of equivalent at the time of execution, in case the stipulated make or model mentioned, is not available. However, in case, the equivalent make or model so approved, is cheaper than the make or model already mentioned in Preferred makes list, the price adjustment will be made based on the difference in market rate.

16. Inspection & Audit of works:

In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by the Bank internal inspection and other Government authorities. The contractor shall at times during the usual working hours and at all times at which reasonable notices of the intention of the Engineer-in-charge/ Employer or other authorized officers as stated above to visit the works shall have been given to the contractor, either himself be present to receive the orders and instructions or have a responsible representative duly accredited in writing, to be present for that purpose.

Any instructions given by the above authorities shall be followed by the contractor. Further any recoveries ordered by the above authorities shall be made from the amount payable to the contractor or such amounts shall be paid by the contractor to the Bank.

17. Submission of Insurance policies:

No work shall be commenced by the Contractor unless he obtains the Insurance Policies as mentioned under Clauses of contract. Also, no payment shall be made to the Contractor / no permission for continuation of works on expiry of insurance policies unless renewed by the Contractor. Nothing extra shall be payable on this account. No claim of hindrance (or any other claim) shall be entertained from the contractor on these accounts.

18. Chasing work:

The work should be planned in a systematic manner so that chase cuttings in the walls, ceilings and floors is minimized. Wherever absolutely essential, the chase shall be cut using chase cutting machines. Chases will not be allowed to be cut using hammer / chisel. The electrical boxes should be fixed in walls simultaneously while raising the brick work. The contractor shall ensure proper co-ordination of various disciplines viz. building works, sanitary & water supply & electrical installations etc.

19. Warranty or Guarantee period for specialized works:

Not applicable.

20. External Laboratory:

Wherever tests are stipulated for the Materials, concrete etc the same shall be tested at any government, semi government or NABL approved private laboratories.

21. Licensed agencies:

The contractor shall engage licensed plumbers, electricians of required class as per the statutory rules for the works related to plumbing, sanitary, electrical works. Prior approval of the Employer shall be obtained by producing the copy of the Licenses before commencing these works.

22. Maintenance of Registers

The Contractor will be required to maintain the following registers at site of work and should produce the same for inspection of the Bank/ Engineer in charge wherever desired by them.

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TECHNICAL SPECIFICATIONS – FIRE FIGHTING SYATEM HYDRANT WORKS

FIRE FIGHTING SYSTEM : (TO CONFORM TO ANY OF THE FOLLOWINGSTANDARDS)

- A) IS-2189:1988 - Code of practice for installation of automatic firealarm system
- B) IS-11306:1985- Specification of smoke detector.
- C) IS-694:1990 - Specification of copper conductor PVC cables.
- D) FOC - Fire office committee, UK
- E) UL - Under writers lab, USA
- F) NEC - National electrical code

The following types of detectors are to be used depending upon the site conditions:

- Ionization Smoke Detectors.

- Heat Detectors - Is 2175:1988
- Armored PVC/Rubber Insulated Cables {Is-1554(Part-I):1976}

TECHNICAL SPECIFICATION FIRE FIGHTING WORKS

<u>1.0</u>	<u>FIFIRE FIGHTING</u>
1.1	<p>MATERIALS:</p> <p>The pipes shall be M.S `C' class (Heavy Grade) Factory welded pipes and seamless screwed and socket tubes' conforming to the requirement of IS 1239-1964 for medium grade. They shall be of the Dai. (Nominal bore) specified in the description of the item. The representative nominal bores of the pipes for which they are intended shall designate the socket.</p> <p>The pipes and sockets shall be clearly finished, well in and out and free from cracks, surface flows, laminations and other defects. All screw threads shall be clean and well cut. The ends shall be cut cleanly and square with axis of the tube.</p> <p>All screw tubes & sockets shall have pipe threads conforming to the requirement of IS 544-1955 (or revised) screwed tubes shall have threads while the sockets shall have parallel threads.</p>
1.2	<p>PIPE FITTINGS:</p> <p>The fitting shall be of malleable cast iron or MS. tubes complying with all the appropriate requirements given in Para 1.1.1 or as specified. The respective nominal bore of the pipes for which they are intended shall designate the fittings.</p> <p>The fittings shall have screw threads at the ends conforming to the requirements of IS 544-1955 (or revised). Female threads on fitting shall be parallel & male threads (except on running nipples & collars of unions) shall be taper.</p> <p>The pipes shall be cleaned & cleared of all foreign matter before being laid. In jointing the pipes, the inside of the socket & the screwed end of the pipes shall be oiled & rubbed over with white lead & a few turns of spun yarn wrapped round the screwed end of the pipe. The end shall then be screwed in the socket, Care should be taken that all pipes & fitting are properly jointed so as to make the joints completely water tight & pipes are kept at all time free form dust & dirt during the fixing. Burr from the joint shall be removed after laying, the open ends of the pipes shall be temporarily plugged to prevent access of water, solid or any other foreign matter.</p> <p>All pipes & fittings shall be fixed truly vertical & horizontal unless unavoidable. The pipes shall be fixed to walls with standard pattern holder bat clamps of required shapes & size so as to fit tightly on the pipes when tightened with screwed bolts. These clamps shall be embedded in brickwork in cement mortar 1:3 (1 cement3 coarse sand) & shall be spaced at regular intervals in straight lengths as shown in the table given below.</p>

1.3	Concrete walls / floors at no time shall be chiseled out for fixing the pipes. The contractor shall use masonry drill to drill the hole and use anchor bolts to fix the pipe.
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SIZE OF mm.		LENGTHS	
		HORIZONTAL RUNS Meters	VERTICAL RUNS meters
15	2	2.5
20	2.5	3
25	.....	2.5	3
32	.....	2.5	3
40	.....	3	3.5
50	.....	3	3.5
65	.....	3.5	5
75	.....	3.5	5

	<p>The clamps shall be fixed at shorter lengths near the fittings as directed by the Engineer-in-charge.</p> <p>For GI pipes 15mm to 25 mm Dia. the holes in the walls & floors shall be made by drilling with drill bits & not by dismantling the brick work or concrete. However, for bigger diameter pipes the holes shall be carefully made of the smallest size as directed by the Engineer-in-charge. After fixing the pipes the holes shall be made good with cement mortar 1:3 (1 cement: 3 coarse sand) & properly finished to match the adjacent surface.</p>
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1.4	<p>EXTERNAL WORK: The galvanized iron pipes & fittings shall be laid in trenches. The widths & depths of the trenches for different diameters of the pipes shall be as in the table given below:</p> <table border="1" data-bbox="272 310 1068 447"> <thead> <tr> <th>DIA. OF PIPE</th> <th>WIDTH OF TRENCH</th> <th>DEPTH OF TRENCH</th> </tr> </thead> <tbody> <tr> <td>15 mm TO 50 mm</td> <td>300mm</td> <td>60 cm</td> </tr> <tr> <td>65 mm TO 100mm</td> <td>450mm</td> <td>75 cm</td> </tr> <tr> <td>150 mm TO 300mm</td> <td>600mm</td> <td>100cm</td> </tr> </tbody> </table> <p>At joints the trench width shall be widened wherever necessary. The work of excavation & refilling shall be done true to line & gradient. The pipes shall be painted with two coats of Anti-corrosive bit mastic paint of approved quality. The pipe shall be laid on a layer of 7.5cm sand & filled with sand upto 15 cm above the pipes. The remaining portion of the trench shall then be filled with excavated earth. The surplus earth shall be disposed off as directed. In case of bigger diameter (65mm & above) pipes where the pressure is very high, thrust blocks of cement concrete 1:2:4: (1 cement: 2 coarse sand: 4 grade stone aggregate of 20 mm nominal size) shall be constructed on all bends to transmit the hydraulic thrust without impairing the ground & spreading it over a sufficient area.</p>	DIA. OF PIPE	WIDTH OF TRENCH	DEPTH OF TRENCH	15 mm TO 50 mm	300mm	60 cm	65 mm TO 100mm	450mm	75 cm	150 mm TO 300mm	600mm	100cm
DIA. OF PIPE	WIDTH OF TRENCH	DEPTH OF TRENCH											
15 mm TO 50 mm	300mm	60 cm											
65 mm TO 100mm	450mm	75 cm											
150 mm TO 300mm	600mm	100cm											
1.5	<p>TESTING THE JOINTS: After jointing, the pipes & the fittings shall be inspected under working conditions of pressure & flow. Any joint found leaking shall be redone & all leaking pipe removed & replaced without extra cost. The pipe & fittings after they are laid shall be tested to hydraulic pressure of 15 Kg/cm² (150 meter) The pipes shall be slowly & carefully charged with water allowing all air to escape & avoiding all shocks of water hammer. The draw of taps & stopcocks shall then be closed & specified hydraulic pressure shall be applicable gradually. Pressure gauge must be accurate & preferably should have been recalibrating before the test. The test pump having been stopped the test pressure should be maintained without loss for at least half an hour. The pipes & fitting shall be tested in sections as the work of laying proceeds, keeping the joints exposed for inspection during the testing.</p>												
1.6	<p>GI PIPES & FITTINGS: The pipes shall be of the class specified in the Schedule of Quantities & shall be of galvanized steel, welded or seamless, screwed & socketed shall conform to IS: 1239. A firm of repute shall manufacture them. All fittings shall be malleable iron galvanized fittings of approved best Indian make. The detail of the pipes regarding nominal bore thickness & weight are given below:</p>												

APP. OUTSIDE DIA	NOMINAL BORE		SCREWED & SOCKETED Wt/Mtr		SCREWED & SOCKETED METERS / 1000 KG.			
	MM	NEAREST inch	LIGHT Kg.	MEDIUM Kg.	HEAVY Kg.	HEAVY Kg.	MEDIUM Kg.	LIGHT Kg.
10.2	6	1/8	0.364	0.41	0.496	2747	2439	2016
13.5	8	¼	0.521	0.65	0.773	1919	1529	1294
17.2	10	3/8	0.680	0.85	1.030	1470	1166	971
17.3	15	½	0.961	1.23	1.460	1040	813	685
26.9	20	¾	1.42	1.59	1.910	704	629	524
33.7	25	1	2.03	2.46	2.990	493	407	334
42.4	32	1 ¼	2.61	3.17	3.870	383	316	258
48.3	40	1 ½	3.21	3.65	4.470	304	274	224
60.3	50	2	4.18	5.17	6.240	239	193	160
76.1	65	2 ½	5.92	6.63	8.020	169	151	125
88.1	75	3	6.98	8.64	10.300	143	116	98
101.6	90	3 ½	8.92	9.90	11.800	112	101	84.6
114.3	100	4	10.2	12.40	14.700	98	80.6	68

139.7	125	5	-	16.70	18.300	-	59.9	54.6
165.1	150	6	-	19.80	21.800	-	50.5	45.9

NOTE: The above weights are for black pipes & theoretical weights of galvanized pipes are 6% higher.

1.7	WATER PRESSURE MAINS: Shall conform to IS: 1536-11967 Class LA as specified in the schedule. They shall be laid, jointed & tested along with the C.I pipes as described in the specification for C.I.S/S pipes.
1.8	<p>FLANGED PRESSURE MAINS: Flanged joints to be made by painting the face of the flanged with red lead freely & bolting up evenly on all sides.</p> <p>a) A thin fiber of lead wool shall be used in making the joints water tight where facing of the pipes is not true.</p> <p>b) Where packing may be used, it shall be of rubber insertion cloth three ply & of approved thickness. The packing should be of full diameter of the flange with proper pipe hole &bolthole, neat & even at both the inner &outeredges.</p> <p>c) Where the flange is not fully faced, the packing may be of the dimension of the facing strip only. Its proper placing should be tested before another pipe is jointed on.</p> <p>d) TESTING: After each section of the pipeline has been completed it shall be tested for water tightness before being covered in. This can be done by closing ends & by means of a valve, blank flange, cap or plug & filling the pipe with water. The pressure should be raised by means of a small hand operated pump till it registers 50% above the highest working pressure in the section & the test pressure should be ascertained by means of a reliable gauge. When the pipe is laid on any appreciable gradient, the test should be carried out at the lower end of the section. Any leaking joints should be made good & the above test reapplied until no further leaks are apparent.</p>

1.9	<p>FITTINGS: General - The brass or gunmetal fittings shall be heavy quality & approved manufacturer & pattern with screwed or flanged ends as specified. The fittings shall in all respects comply with the Indian standard Specifications NO.IS: 778-1957 & IS.781- 1959. The nominal bore of the pipe outlet to which the fittings are attached shall designate the standard size of brass gunmetal fittings. A sample of each kind of fittings shall be got approved from the Engineer-in-charge & all supplies made according to the approved samples.</p> <p>All cast fittings shall be sound & free from laps, blowholes & fittings; both internal & external surfaces shall be clean, smooth & free from sand etc. Burning plugging, stopping or patching of the casting shall not be permissible. The bonnets, spindles & other parts shall be truly machined so that when assembled the parts shall be axial, parallel & cylindrical with surface smoothly finished.</p> <p>The area of the waterway of the fittings shall not be less than the area of nominal bore. The fittings shall be fully examined & cleared of all foreign matter before being fixed. The fittings shall be fixed in the line in a workman like manner. The joints between fittings & pipes shall be made leak proof. The joints & fittings shall be leak proof when tested to a pressure of 15KG/CM² as described in Para 1.1.5 - the defective fittings & joints shall be replaced or redone.</p>
1.10	<p>BRASS FULL WAY VALVES: Full way valve is a valve with suitable means of connection for insertion in pipeline for controlling or stopping the flow. The valve shall be of brass fitted with a cast iron wheel & shall be of gate valve type opening full way of the size as specified.</p> <p>The valve shall be of best quality specified in makes approved by the Engineer-in-charge & shall have the following approximate weight with a tolerance of 5%.</p>

Mm	Flanged ends Kg	Screwed ends Kg
15	1.021 (Provisional)	0.567(Provisional)
20	1.503 (, ,)	0.680(, ,)
24	2.645 (, ,)	1.077(, ,)
32	3.232 (, ,)	1.559(, ,)
40	4.082 (, ,)	2.268(, ,)
50	6.691 (, ,)	3.232(, ,)
65	10.149(, ,)	6.804(, ,)
75	13.381(, ,)	8.845(, ,)

1.11	GUN METAL FULL WAY VALVE WITH WHEEL: These shall be of the Gun metal fitted with wheel & shall be of Gate valve type opening full way & of the size as specified. These shall generally conform to IS.778-1957 & their approximate weights shall be given in Para 1.2.
1.12	Ball valve: The ball valve shall be of high pressure class & shall be of sizes as specified. The nominal size of a ball valve shall be that corresponding to the size of the pipe to which it is fixed. The ball shall be of brass or Gun metal as specified, & the float of copper sheet. The minimum gauge of copper sheet used for making the float shall be 45 for float up to 115 mm Dai. & 55 for float exceeding 115mm Dai. This shall be spherical in shape. The jointing of the float shall be made by efficiently burnished, lapped & soldered seam or by brazing. Plastic float may also be used if specified. The body of ball valve when assembled in working conditions with the float immersed to not more than half of its volume shall remain closed against a test pressure of 10.5Kg/sq. Cm. & low pressure shall against a test pressure of 3.5Kg/sq.cm. The ball valve shall generally conform to IS specifications No. 1703-1962. The weight of ball cock & the size of ball shall be as per table givenbelow.
1.13	CAST IRON & SPUN IRON PIPES & FITTINGS:
1.13.1	MATERIALS: Pipes & specials: The cast iron pipes shall conform to IS: 1537-1960 while spun iron pipes shall conform to IS 1536-1960. They shall be either with spigot & socket ends or flanged ends. The cast iron pipes shall be vertically cast either class A or B as specified. The spun iron pipes shall be of the cast iron casted centrifugally & shall be of class A, B as specified in the item. These pipes & specials shall be used for water pressure up to half of the hydraulic test pressure of various pipes as given below:

HYDRAULIC TEST PRESSURE FOR VERTICALLY CAST IRON PIPES				
Test Pressure in Kg/sq. cm (meter head)				
Nominal Dia.	Socket & spigot pipes		Flanged Pipes	
	Class A	Class B	Class A	Class B
Upto & including 300 mm.	20(200)	25(250)	20(200)	25(250)
Over 300 mm to 600 mm.	20(200)	25(250)	20(200)	25(250)

	HYDRAULIC TEST PRESSURE FOR CENTRIFUGALLY CAST IRON PIPES:
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Nominal Dia.	Test Pressure in Kg/sq. cm (meter head)				
	Class LA.	Socket & spigot pipes		anged Pipes	
		Class A	Class B	Class A	Class B
Upton & including 300 mm.	20(200)	25(250)	30(300)	20(200)	25(250)
Over 300 mm to 600 mm.	20(200)	25(250)	30(300)	-	-

Specials: The specials shall conform to IS. 1538-1960 & shall be of medium or heavy class depending on their thickness. The hydraulic test pressure of each class shall be as follows

Nominal Dia.	Test Pressure in Kg/sq. cm (meter head)			
	Specials without branches or with branches. Not greater than half the principal diameter.		Specials with branches greater than half the principal diameter.	
	Medium	Heavy	Medium	Heavy
Up to & including 300 mm.	20(200)	25(250)	20(200)	20(200)
Over 300 mm to 600 mm.	15(150)	20(200)	15(150)	20(200)

All the cast iron pipes shall be capable of easily working with a drill or file. Pipes & specials should be sound with smooth inner & outer surface, neatly dressed & carefully fitted free from laps Pinholes, & other imperfections & shall ring clearly when struck with a light hammer. The end of the pipes & the specials shall be reasonably square to their axis.

All pipes & specials before they are affected by rust shall have been coated with an approved anti-corrosive treatment or by heating & dipping in Dr.Agnus Smith's solution at the factory.

1.13.2	<p>Stacking: The pipes & specials shall be handled with sufficient care to avoid damage to them. These shall be lined up on one side of the alignment of the trench, socket facing uphill or in the direction of flow of water.</p>
1.13.3	<p>If the rock is met with, it shall be removed to 15 cm. below the level of the pipe & the trench will be refilled with excavated materials & consolidated. The excavated materials shall not be stacked within 1meter or half of the trench width whichever is greater from edge of the trench. The materials excavated shall be separated & stacked so that in refilling they may be re-laid & compacted in the same order to the satisfaction of the Engineer-in-charge. The trench shall be kept free from water. Shoring & timbering shall be provided wherever required. Excavation below water table shall be done after dewatering the trenches. After the excavation of the trench is completed, hollows shall be cut at the required positions to receive the socket of the pipes & these hollows shall be sufficient depth to ensure that the barrels of the pipes shall rest throughout their entire length on the solid ground & that sufficient space left for jointing the underside of the pipe joint. These socket holes shall be refilled with sand after jointing the pipe.</p> <p>There the pipeline or drain crosses an existing road, the road crossing shall be excavated at a time, the second half being commenced after the pipes have been laid in the first half & the trench refilled. Necessary safety measure for traffic as directed shall be adopted. All type of pipes, water mains, cables etc. met within the course of excavation shall be carefully protected & supported. Care shall be taken not to disturb the electrical & communication cable removal of which, if necessary shall be arranged by the Engineer-in-charge.</p>
1.13.4	<p>LAYING OF PIPES & SPECIALS: Before being laid the pipes shall be examined to see that there are no cracks or defects as described in Para 1.5.1. Above. Subjected to the approval of the Engineer-in-charge, the damaged portion of the cracked pipe may be cut at a point not less than 15 cm. beyond the visible extremity of the crack. The pipes shall be thoroughly cleaned of all dust & dirt & special care shall be taken to clean the inside of the socket & outside of the spigots.</p> <p>The pipes shall be lowered into the trench by means of suitable pulley blocks, sheer ropes etc. In no case the pipe shall be rolled & dropped into the trench. After lowering the pipes shall be arranged so that the spigot of one pipe shall be carefully centered into the socket of the next pipe & pushed to the full distance that it can go. The pipe shall be laid to the levels required. Specials shall also be laid in their proper positions as stated above.</p> <p>Where so directed, the pipes & specials may be laid on masonry or concrete pillars. The pipe laid on the level ground shall be laid with socket facing the direction of water. In all other cases, the socket shall be laid facing up hill.</p> <p>Any deviation either in plan or elevation less than 11% shall be effected by laying the straight pipes, round a flat curve, of such radius that minimum thickness of lead at the face of the socket shall not be reduced below 6mm or the opening between spigot & socket increased beyond 12mm at any point. A deviation of about 2% can be effected at each joint in this way. At end of each</p>

	<p>days work, the last pipe laid shall have its open last ends securely closed with a wooden plug to prevent entry of water, soil, rats and any other foreign matter into the pipe. Cement concrete thrust blocks of suitable design as approval by the Engineer- in-charge shall be provided at 45 & 90 deg. bends of the pipes & also at places where there is like likelihood of thrust so as to withstand the dynamic & static forces developed due to water in the pipe line. The thrust blocks shall be made after the joints have been caulked with lead.</p>
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	LEAD CAULKED JOINTS:									
1.14.1	<p>Lead caulked joints with molten lead: This type of lead caulked is generally done in providing joints in water lines wherever it is particle to use cast lead caulking, but not in case of wet conditions.</p> <p>a) Materials: Pig lead & spun yarn. Pig lead shall be of uniform quality, clean & free from foreign materials. It shall be of uniform softness & capable of being easily caulked or driven. It shall conform to IS. 782-1962 for caulking lead. Spun yarn shall be of clean hemp & of good quality. It shall be soaked in hot coal cooled before use or bitumen. The approximate depth of pig lead for various diameters of CI pipes & specials shall be as given below with a tolerance of +5%.</p> <table border="0"> <tr> <td>Diameter of pipe</td> <td>Depth of lead</td> <td></td> </tr> <tr> <td>75 mm to 250mm</td> <td></td> <td>45 mm</td> </tr> <tr> <td>300 mm to 1000mm</td> <td>50mm</td> <td></td> </tr> </table>	Diameter of pipe	Depth of lead		75 mm to 250mm		45 mm	300 mm to 1000mm	50mm	
Diameter of pipe	Depth of lead									
75 mm to 250mm		45 mm								
300 mm to 1000mm	50mm									

	<p>Just sufficient quantity of spun yarn shall be put so as to give the specified depth of lead.</p> <p>b) Jointing:</p> <p>1) The interior of the socket & exterior of the spigots shall be thoroughly cleaned & dried. The spigot end shall be inserted into the socket right up to the back of the socket & carefully centered by two or three laps of treated spun yarn, twisted into the ropes of uniform thickness well caulked into the back of the socket. No piece of yarn shall be shorter than the circumference of the pipe. The jointed pipe line shall being required levels, and the directions.</p> <p>2) The leading of pipes shall be made by means of ropes covered with clay or by using special leading rings. The lead shall be melted so as to be thoroughly fluid & each joint shall be filled in onepouring. The following precautions shall be taken for melting lead:</p> <p>a) The pot & the ladle in which lead is put shall be clean & dry.</p> <p>b) Sufficient quantity of lead shall be melted.</p> <p>c) Any spun or dress which may appear on the surface of the lead during melting shall be skimmed off.</p> <p>d) Lead shall not be over heated, as it is not desirable to overheat it.</p> <p>3) CAULKING: After the lead has been run into the joint the lead shall be thoroughly caulked. Caulking of joints shall be done after a convenient length of the pipes has been laid & leaded. The leading ring shall first be removed & any lead outside the socket shall be removed with a flat chisel & the joint caulked round three times with caulking tools of increasing thickness & hammer 2 to 3 Kg. weights. The joints shall not be covered till the pipeline has been tested under pressure thoroughly. The rest of the pipeline should be covered up to prevent expansion & contraction due to variation in temperature.</p>
1.14.2	<p>Lead caulked joints with lead wool yarn:</p> <p>This type of lead caulking is generally done when it is inconvenient or dangerous to use molten lead for joints, for example, in case such as inverted joints or in wet trenches or in exceptional cases. In such cases the joints shall be made with lead wool or yarn. Caulking with a lead wool yarn shall however be not carried out without the prior permission of Engineer-in-charge.</p> <p>1) Materials: Lead wool or yarn & spun yarn.</p> <p>Sub Para (a) materials of Para 1.7.1 shall apply except that the approximate weights & depths of lead wool or lead yarn required for each joints of various dia. of C.I. pipes & specials shall be as given in the following table. Just sufficient quantity of spun yarn shall be put so as to give specified depth of lead wool.</p>

	<p>Diameter of the Wt. of lead wool Depth of lead wool Pipeline. Or lead yarn in KG. Or lead yarn in KG.</p> <p>75 0.80 19 100 0.90 19 125 1.25 20 150 1.60 23 200 2.05 23 250 2.95 25 300 3.50 25</p>
	<p>An allowance of five percent variation in the specified weights & depths shall be permissible.</p> <p>2) Jointing: The spun yarn shall first be inserted & caulked into the socket as described under section jointing with 'Pig lead'. Lead wool or yarn shall then be introduced in the strains not less than 6mm thick & the caulking shall be repeated with each turn of lead wool or yarn. The whole of the lead wool or yarn shall be compressed into a dense mass. The joint shall then be finally finished flush with face of the socket.</p>
1.14.3	<p>Refilling of excavated earth in trenches: The excavated earth shall be spread in the layer of 250-mm. Thickness and compacted by proper watering. This filling shall be done such that the joints remain open for working. Rest of the filling shall be done in the manner after the line is tested. The excavated material such as brickbats, asphalt cakes, shall be spread in the top most layers of 23cm & shall be consolidated thoroughly. The material shall be spread over the surrounding ground, in the radius of 50M from the excavation. If extra earth for complete filling will be necessary the contractor at his own cost shall bring the same from other places, & the same shall be filled up into the trench as shown above.</p> <p>Excavation, refilling, shoring and timbering in trenches, masonry or concrete blocks wherever required shall be measured separately under relevant items of work and as per mode of measurement.</p>

1.15.1	<p>SLUICE VALVE & FIRE HYDRANTS:</p> <p>Sluice valves: The sluice valves are used in a pipeline for controlling or stopping flow of water. These shall be of specified size and class and shall be of non-rising screwed type with either double flange or double socket ends & cap or hand wheel. These shall, in all respects, comply with the Indian standard specifications IS.780-1963 for valves up to & including 300 mm. sizes. Class-1 sluice valve are used for maximum working pressure of 10Kg/cm (100 meter head) & Class 2 sluice valve for 15Kg/cm (150 meter head).</p> <p>The body, domes, covers, wedge gate stuffing box shall be of good quality cast iron, the spindle of bronze, nut & valve seats leaded tin bronze. The bodies spindle & other parts shall be truly machined with surface smoothly finished. The area of the waterway of the fittings shall be not less than the area equal to the nominal bore of the pipe.</p> <p>The valves shall be marked with an arrow to show the direction of turn for closing of the valve.</p> <p>The valve shall be fully examined & cleared of all foreign matter before being fixed. The fixing of the valve shall be done by means of bolts, nuts & 3mm rubber insertion of chemically treated compressed fiber board. 1.5mm minimum thickness & of weight less than 0.183 gm/sq. cm with flanges of spigot & docketed tail pieces drilled to the same, specification in case of S & S pipes & with flanges in case of flanged pipes. The tailpieces shall conform to IS. 1938- 1960. These shall be jointed to the pipe line by means of lead caulked joints.</p>
1.15.2	<p>Fire Hydrant: The hydrants shall be of spindle type with 65mm outlet combined with sluice valve unless otherwise specified. The hydrant shall confirm to IS.909-1958 & shall consist of the following components:</p> <ol style="list-style-type: none">One sluice valve class 1 type confirms to IS.780-1963.One duck foot bends.One 65mm male coupling instantaneous pattern and.One Cast iron cap permanently secured to the duck foot bend by means of a chain. Where the fire services requirement of coupling differs from the above, the requisite coupling shall be provided at no extra cost. <p>The body & cover shall be of good quality cast iron spindle & bronze & the nut & the valve seat of leaded in tin bronze. The bodies, spindles & other parts shall be truly machined with surface smoothly finished.</p> <ol style="list-style-type: none">The hydrant shall be fully examined and cleared of all foreign matter before being fixed. The fixing shall be done on the water main, which shall be of minimum 75mm dia. The flanged end of the hydrants shall be fixed to the flanged outlet of a tee in the water main by means of bolts, nuts & 3mm rubber insertion or chemically treated compressed fiber bore 1.5 mm minimum thickness & of weight not less than 0.183 gm. per sq.cm. This can also be fixed by means of flanged tailpiece, which may be connected to the water main by C.I. specials.

1.15.3	<p>Appurtenances:- The other appurtenances of pipe line are mentioned below:-</p> <p>1) Air Vents: These are placed at every summit in the pipeline to permit the escape of air when the main is filled, & afterwards if any air is carried into the mains. These are also placed on long stretches of nearly levelmain.</p> <p>2) Scour Valves: These are placed at bottom of the all depressions of pipes for emptying the main or letting out the sediment.</p> <p>3) Reflux Valves: These are fixed so as to open in the direction of flow but automatically to close if the water flows back. They are used to diminish the damage done by the escape of water due to a burst or to prevent damage to impellers of Pump.</p> <p>4) Safety or Relief Valves: These are fixed at the down stream ends of long lengths of main or where water hammer may take so as to reduce from any excessive pressure to the nominal if it occurs.</p>
1.16	MASONRY CHAMBERS:
1.16.1	General: All masonry chambers for stop cocks, sluice valves, fire hydrants & meter etc. shall be built as per supplied drawings.
1.16.2	Excavation: The excavation for chambers shall be done true to dimension & level indicated on plans or as directed by the Engineer-in-charge
1.16.3	Bed concrete: This shall be of cement concrete 1:3:6 (1 cement: 3 fine sand: 6 graded stone aggregate 40mm nominal size).
1.16.4	Brick work: This shall be in 2nd class bricks in cement mortar 1:5 (1 cement : 5 fine sand)
1.16.5	Plastering: Plastering not less than 12mm thick shall be done in cement mortar 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat
1.16.6	<p>Surface Box: This shall be of cast iron, well made & free from casting & other defects. All sharp edges shall be removed & finished smooth. The clear of dimensions for surface boxes for stop cocks sluice valves, fire hydrants, water meters, etc. shall be given in drawing.</p> <p>C.I. surface boxes shall be coated with black bituminous composition except in the case of fire hydrants where the cover of the surface box shall be painted with two coats of rust resisting bright luminous yellow paint for clear visibility during night.</p> <p>The C.I. surface box shall be fixed on the top of the masonry chamber and provided with plain or reinforced cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size.)</p>
2.0	<u>HANGERS & SUPPORTS :</u>
2.1	GENERAL: Provide proper solid angle iron channel section, supports for all pipes complete with clamps. Wherever insulation cores, to provide wooden guide to support pipe on the angle iron hangers/supports. For attachment in concrete, use "Dash" fasteners or anchor plug type inserts or equivalents. Provide hangers within 0.9 meter of all hangers in direction of mains & a minimum of three hangers per expansion bend wherever shown in drawing. Provide all additional structural steel angles, channels or other members not specifically shown but are required for proper support. At no time concrete reinforcement should be allowed to drill exposed & hangers hang on them.
2.2	Where necessary additional hangers to be provided to arrest water hammers or hydraulic resonance with proper rubber padding.

2.3	<p>Space hangers, as noted below, except on all soil pipe which shall have a hanger or multiple fittings, sufficient hangers shall be provided to maintain proper slope without sagging, in case of angle suspended line, the following is suggested.</p> <table border="0" style="margin-left: 40px;"> <tr> <td style="padding-right: 20px;">Pipe Sizes</td> <td>Hanger Rod Dia.</td> </tr> <tr> <td>20 mm through 50mm</td> <td>9 mm.</td> </tr> <tr> <td>65 mm through 125 mm</td> <td>12 mm.</td> </tr> <tr> <td>150 mm and over</td> <td>16mm.</td> </tr> </table> <table border="0" style="margin-left: 40px;"> <tr> <td style="padding-right: 20px;">Pipe Sizes</td> <td>Spacing of Supports</td> </tr> <tr> <td>12 mm to 20 mm</td> <td>1.5 M apart</td> </tr> <tr> <td>25 mm to 40mm</td> <td>1.8 M apart</td> </tr> <tr> <td>50 mm & above</td> <td>1.8 M apart or as per IS</td> </tr> </table>	Pipe Sizes	Hanger Rod Dia.	20 mm through 50mm	9 mm.	65 mm through 125 mm	12 mm.	150 mm and over	16mm.	Pipe Sizes	Spacing of Supports	12 mm to 20 mm	1.5 M apart	25 mm to 40mm	1.8 M apart	50 mm & above	1.8 M apart or as per IS
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2.4	<p>Provide floor stands, wall brackets of masonry piers, etc., for all lines running near the floor or near walls for those lines can be properly supported from the walls or floors. Pipeline near concrete or masonry walls may be hung also by hangers carried from wall brackets at a higher level than pipes. Hanging of any pipe from another way is prohibited.</p>																
	<p>HANGERS: Cleaves or band type hangers shall be provided. Hot water piping is to be provided with suspended supports as far as possible. Note that Strap hangers are not permitted & clamps should be of removable type.</p>																
3.0	<u>VALVES & PRESSURE GAUGES :</u>																
3.1	<p>Pressure gauges shall have not less than 112mm dia. brass body syphon & gauge cock of 9mm size. Dial range shall be adequate for the pressure encountered & as specified.</p>																
3.2	<p>Provide valves on branch pipe connection to mains & at connection to equipment where indicated. All valves are to be located for easy access & are to be full bore of pipe connected together. Support all valves wherever necessary. Valves are to be as per IS. 780 (class 1) for GI sluice valve & to IS. 778 for valves & tested & approved.</p>																

3.3	VALVE SCHEDULES :				
SERVICE	TYPE	SIZE	RATING	ENDS	MATERIALS
Water, Oil, air steam (low pressure)	Gate	65 mm & under	300 psi/20 Kg./sq.cm.	screwed	Bronze
Water	Gate	75 mm & over	300 psi WOG	flanged	CI body bronze trim
Gas	Gate	65 mm &	600 psi	flanged	Bronze/SS spindle & trim

Water, Oil, air, Gas, steam (low pressure)	Globe & angle	65 mm & under	300 psi.	Screwed	Bronze
Water	Globe & Angle	65 mm & under	300 psi. water	Screwed	Bronze
Water	Globe & Angle	65 mm & over	300 psi.	Flanged	Iron body bronze trim
Water	Horizontal & vertical check	65 mm & under	300 psi.	Screwed	Bronze
Water	Horizontal & vertical check	65 mm & over	300 psi.	Flanged	Iron body bronze trim

3.4	All globe & check valve shall have working parts suitable for hot & cold water, oil or gas as required. Valves shall be tagged with permanent label under band wheel indicating type of duty.
4.0	GENERAL SPECIFICATION:
4.1	Unless specifically mentioned otherwise, all the applicable codes & standards published by the Indian standard's Institution and its subsequent revision & all other standards which may be published by them before construction work starts, shall apply in respect of design workmanship, quality and properties of materials & method of testing. Some of this available standards are listed below :-
IS: 27-1965	Pig Lead
IS: 651-1971	Specification for salt - glazed stoneware pipes & fittings
IS: 458-1971	Concrete pipes (with & without reinforcement)
IS: 778-1971	Specification for Gunmetal Gate, Globe & Check valves for water stem & oil only
IS: 779-1968	Water meter domestic type
IS: 780-1969	Specification for sluice valves for various purposes.
IS: 782-1966	Specification for caulking lead.
IS: 783-1959	Code of practice for laying of concrete pipes.
IS: 1172-1971	Basic requirement water supply drainage & sanitation
IS: 1536-1967	Specification for centrifugally cast (spun) iron pressure pipes & for water, gas & sewage.
IS: 1537-1960	Specification for vertically cast iron pressure pipes for water, gas & sewage.

IS: 1538-1969	Specification for cast iron fittings for pressure pipes for water, gas & sewage.
IS: 1703-1968	Specification for ball valves (horizontal plunger type) including floats for water supply purpose.
IS: 1726-1974 Part 1, 2, 3, 4 & 5.	Specification for cast iron manhole covers & frames intended for use in drainage work.
IS: 1729-1964	Specification for cast iron spigot & socket soil, waste & ventilating pipe's fittings, & accessories.
IS: 1742-1972	Code of Practice for building drainage.
IS: 1795-1974	Specification for pillar taps.
IS: 2064-1973	Code of practice for selection, installation & maintenance of sanitary appliances.
IS: 2065-1972	Code of practice for water supply in buildings.
IS: 2373-1973	Specification for water meters (bulk type)
IS: 5455-1969	Heavy C.I. steps for manhole.
IS: 5961-1971	C.I. grating for drainage
IS: 7181-1971	C.I. flanged pipes.
IS: 4985	PVC pipes
5.0	<u>WET RISER FIRE HYDRANT</u>
5.1	SCOPE OF WORK:
5.1.1	Work under this section shall consist of furnishing all labor, materials, Equipment & appliance necessary & required to install complete system as shown in the drawings & specified here in after or given in the schedule of Quantities.
5.1.2	The system shall consist of but will not be limited to the Followings: a) GI / black steel (cast iron) mains including valves, sprinkler head, hydrants & appurtenances. b) G.I./black steel fire risers. c) Landing valves, hose reels; hose cabinets, brigade connections to existing fire mains.
5.2	GENERAL REQUIRMENTS:
5.2.1	All materials shall be new & of the best quality conforming to specifications & subject to the approval of the Engineer-in - charge.
5.2.2	Pipes & fittings shall be fixed truly vertical horizontal to in slope as required in neat workmanlike manner.
5.2.3	Pipes fittings & Valves shall be fixed to provide easy accessibility for repair & maintenance & shall not cause obstruction in shafts, passages, etc.

5.2.4	Pipes shall be securely fixed to walls & ceilings by suitable clamps, hangers at intervals specified. Only approved type of Anchor fasteners shall be used for RCC ceiling & walls.
5.3	PIPES & FITTINGS: Pipes for wet risers shall be blacksteel tubes conforming to I.S.1239 (heavy class) 1979 withscrewed/weldedjoints as specified &directed by the Engineer - in - charge
5.4	JOINTING:
5.4.1	Joints for black steel pipes 50 mm Dia& below fitting shall be metal tapered threaded joints using red lead for rust prevention. Joints shall be welded for sizes 65mm Dai above as approved by the Engineer-in-charge. (Welding shall conform to relevant I.S.)
5.4.2	Joints between GI or black steel pipes & valves & other appurtenances shall be made with G.I or black steel flanges. Flanges joints shall be made with 3mm thick insertion rubber washer. Flanges shall be of Table E"andshallconformtoIS1538PartIVtoPartVIwhichshallbec utand drilled out of MS Plates. MS cut flanges shall be galvanized before welding to G.I Pipes.
5.5	SLUICE VALVES & NON RETURN VALVES: Sluice valves (80mm & above dia) shall be cast iron double flanged with non-rising spindle. Sluice valves below ground shall be provided with caps suitable for operations by a key. Sluice valves in exposed locations shall be provided with cast iron wheel. Sluice valves shall conform to IS 780(class I 1969) & tested to 20 kg/sq. cm pressure.
5.6	FIRE HYDRANTS:
5.6.1	Thecontractorshallprovideoneeachlanding&externallyas shown on drawing one (twin headed gun metal landing valve with 63mm dia outlet to & 100mm inlet) IS 5290 - 1969 with cast iron wheels. Landing valve shall have flanged inlet & suitable for fire brigade hoses 63mm Dai.
5.7	FIRE HOSE REELS:
5.7.1	The contractor shall provide standard fire hose reels with 20mm Dai high pressure Dunlop rubber hose 30 M long with gunmetal nozzles & control valve, shut off valves, all mounted on circular hose reel of heavy mild steel construction & cast iron bracket. Hose reel to be firex, minima or equivalent. Hose reel shall conform to I.S. 884 - 1969.
5.8	DRAIN VALVES:

5.8.1	Provide 50mm Dai black steel pipe to I.S. 1239 heavy class with 50mmgunmetal full way valve for draining any water in the system in low pockets.
	PIPE PROTECTION:
5.9.1	Paint all pipes above ground & in exposed location with one coat of red oxide primer & two or more coats of post office red paint of approved shade as approved by the Engineer - in - charge. (Buried pipe shall be covered by Hessian cloth dipped in coal tar, after a coat of bitumen on pipe).
5.10	PIPE SUPPORTS:
5.10.1	Support all pipes adequately from slabs or walls by a structural support fabricated from MS structural roads, channels, angles & flats. All clamps shall be painted with one coat of red oxide & two coats of post office red channel paint. (Buried pipes shall have 150mm deep PCC bed hunched to half the Dia. of pipe).
5.11	TESTING:
5.11.1	Test all piping in the system to a hydrostatic pressure of 16 KG./sq.cm without drop in pressure for atleast 2 hours.
5.11.2	Rectify all leakage's, make adjustment&re-test as Required & directed by the Engineer - in - charge.
6.0	<u>FIRE FIGHTING SYSTEM</u>
6.1	Scope of Work: The scope of work shall cover supply, installation, testing and commissioning of the Fire hydrant system covering the following: a) Fire pumps, electric or diesel driven as shown in the equipment schedule anddrawings. b) Jockey pumps, electric driven as shown in the equipment schedule anddrawings. c) Automatic fire pump panel with allaccessories. d) Hydrant mains, external ring and yard hydrants. e) Wet risers in the building as specified and shown ondrawings. f) Landing valves, hose reels, hose cabinetsetc. g) Fire brigade breaching, Siamese connections and connections to pumps andappliances.

6.2	<p>Standards: The fire hydrant installation shall conform to and meet with the requirements set out by the following:</p> <ol style="list-style-type: none"> 1) IS: 1648 - 1961 Code of practice for fire Safety of buildings (General) Fire Fighting Equipment and Its maintenance. 2) IS : 3844 - 1966 Code of practice for installation Of internal fire hydrants in Multistoried buildings.
	<ol style="list-style-type: none"> 3) Fire Insurance Association of India-Tariff Advisory Committee rules. 4) Compliance with the local fire brigade and the fire Enforcing authorities.
6.3	FIRE PUMP
6.3.1	<p>The fire pump shall be single or double suction centrifugal type with split casing and direct driven by electric motor or diesel engine as specified. The pump rating and performance shall conform to the Equipment Schedule and meet the TAC duty requirements. The electrical pump and diesel engine pump capacities are 2280 LPM and Jockey pump capacity is 180 LPM with 70Mtrs Head.</p>
6.3.2	<p>Pump casing shall be of close grained cast iron with bronze impeller. The shaft sleeve shall be brass or SS 304 and the trim shall be brass or bronze.</p>
6.3.3	<p>Pump shall be capable of delivering 150% of the rated capacity at 65% of the rated head and the No-delivery head shall be more than 140% of the rated delivery head. The pump casing shall withstand 1.5 times the no-delivery pressure or 2 times of the duty pressure whichever is higher.</p>
6.3.4	<p>The pump shall be either electricity driven or diesel driven with direct flexible coupling.</p>
6.3.5	<p>The electric drive motor shall be squirrel cage induction conforming to IS 325-1978 and rated for continuous duty (S1). Motor shall have not less than class B insulation and minimum enclosure of IP22. The starter shall be air-cooled fully automatic star delta or auto-transformer type. Starters shall conform to BE 8544 and rated for AC- 3 duty conditions.</p>
6.3.6	<p>Drive rating shall be based on the largest of the following :</p> <ol style="list-style-type: none"> 1) Rated pump discharge at rated head 2) 150% of rated discharge @ 65% of rated head 3) Maximum power absorbed by the pump in its operating Range i.e. no-delivery to free discharge.

6.3.7	The diesel engine shall be naturally aspirated (non- turbo charged) & electrically started. The engine shall have a speed governor to regulate the rated rpm within 5% of its rated speed. The engine shall be complete with starting batteries full-wave selenium rectifier charger, isolation leads, mounting frame etc. Engine rating shall be same as for theelectric motor.
6.4	Jockey Pump
6.4.1	The Jockey pump shall be similar to the fire pump but need not have a split casing.
6.5	Accessories
6.5.1	The fire and Jockey pumps shall be complete with the following accessories : 1) Suction and discharge eccentric reducers. 2) Pump coupling guard 3) Common base frame, fabricated mild steel or Cast iron.
6.5.2	Each pump including jockey pump shall have independent set of pressure switches. The pressure switch shall be snap action SP DT switch rated 10 A @ 220 V operated through a stainless steel diaphragm. The switch shall have a pointer for manual adjustment of set point, and all electrical connections shall be terminated in a screwed terminal connector. The entire unit shall be encased in a cold drawn steel enclosure. The diaphragm shall be designed for a maximum operating pressure of the system. Each pressure switch shall be provided with pressure gauges and pressure switches shall be mounted on the pipeline.
6.5.3	Flow switches shall be paddle type SPDT snap acting contacts rated 10 A @ 220 V. The paddle shall be made of either brass or phosphor bronze terminated in a screwed terminal connector. The entire unit shall be encased in cold drawn steel enclosure and the maximum operating pressure of the parts in contact with the liquid shall be consistent with the system pressure. 10 Kg/cm ² .
6.6	System Operation and Control Panels
6.6.1	The fire pump shall be started automatically on loss of pressure and the operation sequence of the jockey and fire pumps shall be as follows : 1) Jockey pump shall start when the system pressure drops by 0.35 Kg/Sq. cm and stop when the system pressure is reestablished. 2) The fire pump shall start when the system Pressure drops by 1.0 Kg/cm ² and shall continue to run till manually switched off.

	3) Jockey and fire pump starting shall be indicated on the panel with a red indicating lamp.It should also be indicated on the Main and Repeater Alarm Panels(MAP & RAP)
6.6.2	The electrical control panel shall be sheet steel enclosed dead front type with easy access to all parts and cable terminations. The panel drawings shall be got approved before fabrication. Panel shall be fabricated out of 14 SWG (2.0 mm) thick steel sheets duly rust inhibited through a process of degreasing and phosphate. The panel shall be complete with ON/OFF push buttons, ammeters, indicating lamps etc. The under voltage protections shall not be provided for fire pumps.
6.6.3	The motor starters (direct on line or star-delta or auto-transformer) shall consist of electrically actuated contractors. The starter shall be complete with ON-OFF push buttons, timers and auxiliary contracts and shall be fully automatic. There shall be an indicating lamp with each of the pumps and an ammeter and selector switch with the fire pumps. Fire pump starting shall be annunciated through an electric siren. Autotransformers shall be korndorfer type for smooth transition. The autotransformer shall be oil/air cooled and shall have separate compartment in the panel. In the case of combination fire hydrant and sprinkler systems, the control panel shall cover the sprinkler pump starter, control components etc. complete as for fire pumps.
6.6.4	All cabling, to and from the pumps to starters and control switches shall be carried out through armored PVC cables of approved makes. Cables shall be laid in accordance with section "M V CABLING". The pump motors and panels shall be double earthen in accordance with IS 3043-1956 or as shown on drawings.
6.7	Fire Hydrants, & hose reels:
6.7.1	Hydrants shall be provided internally and externally as shown on the drawings. Internal hydrants shall be provided at each landing of an escape staircase and additionally depending on the floor area as shown on drawings. Landing valves shall be single headed gun metal valve with 2-63 Mm dia outlets and 100 mm inlet conforming to IS 5290 - 1969. Landing valves shall have flanged inlet and instantaneous type outlets and mounted at 1.0 m above the floor level. Instantaneous outlets for fire hydrants shall be of standard pattern approved and suitable for 63-mm dia fire brigade hoses. Wherever necessary, pressure-reducing orifices shall be provided so as to limit the pressure to 3.5 Kg/sq. cm Or any other rating as required by the local fire brigade.

<p>6.7.2</p>	<p>Each landing valve shall have a hose reel cabinet of 1800 x 900-x 450-mm housing or as shown on drgs.</p> <ol style="list-style-type: none"> 1) Landing valve with twin 63-mm dia capped outlets and one 100-mm inlet. 2) First-aid hose reel with 30 m long 20 mm dia high pressure Dunlop hose & 20 mm diagate valve. 3) 2-7.5 m long 63-mm dia flax canvas controlled percolation hoses with instantaneous couplings. 4) One copper branch pipe with bronze rings to take the nozzle at one end and fit into the instantaneous coupling at the other. 5) One leaded-tin-bronze nozzle of 25 mmdia. <p>The first aid hose shall conform to IS 884-1969 and be wound on a heavy- duty circular hose reel with a cast iron bracket. The hose shall be permanently connected on one end to the standpipe through a 20-mm G.M valve with necessary hose adopter and a gunmetal nozzle at the other end. The reel shall swing out by 270 degree.</p> <p>Canvas hoses shall be in two lengths of 7.5 m each, of flax or controlled porcelain type with instantaneous couplings, neatly rolled into bundles and held in position with steel brackets. Canvas hoses shall be tested and certified by the manufacturers, to withstand an internal water pressure of not less than 35 Kg/sq. cm without bursting. The hose shall also withstand a working pressure of 7 Kg/sq. cm. without leakage or undue sweating.</p> <p>The hose cabinet shall be fabricated from 2-mm mild steel sheet duly rust inhibited through a process of degreasing and phosphating. The cabinet shall have double flap-hinged doors with 4mm clear glass and shall have necessary openings for riser main and brackets for all internals. The cabinet shall receive two coats of red oxide primer both inside and outside before two after coats of final paint of approved color shade.</p>
<p>6.7.3</p>	<p>External Hydrants shall be stand post types over ground unless shown otherwise. All external hydrants shall be 80-mm dia with instantaneous spring lock type and 80 mm C.I. Sluice valve. Hydrants shall be located at least 2 M away from and within 15 m from the building wall.</p> <p>Each hydrant shall be provided with a hose cabinet containing 2 x 15 m 63 mm dia flax or controlled percolation hoses with couplings. Wherever shown, the cabinet may contain a branch pipe and nozzle. The cabinet shall be 900 x 600 x 400 fabricated out of 2-mm mild steel sheet duly rust inhibited through a process of degreasing, phosphating etc. And fitted with 4 mm clear 400 x 400 glass window. The cabinet shall receive two coats of red oxide primer, inside and outside, before 2 coats of final painting of approved shade. The cabinet shall be wall- mounted or free</p>

	standing with its own steeleg depending on the site conditions and as shown on drawings.
6.7.4	The fire brigade connections shall consist of one or two twin-headed 63-mm dia gun metal outlets with built-in check valve and drain plugs connected to a 150 mm dia outlet connection to the water reservoir or to the hydrant main. The fire brigade collecting head shall conform to BE 904-1965.
6.7.5	Priming: A priming tank of the specified capacity shall be provided wherever shown on the drawings and schedule of work. The tank shall be fabricated out of 4-mm mild steel sheets and painted with epoxy based black paint. The tank shall be complete with 25 mm make up float valve with PVC ball, 25 mm over flow and drain connections, 25 mm drain valve, gauge glass, 450 mm manhole with malaria proof cover, 50 mm vent with cowl and mosquito netting.
6.8	Piping: All piping shall be as specified under "piping for Fire Fighting" and the schedule of work for piping.
6.9	Testing & Commissioning: All hydrant piping shall be tested for a hydrostatic test pressure of 30 Kg/sq. cm or 1.5 time the working pressure (whichever is less) for a period of 24 hours at the end of which there shall be no loss in pressure.
<u>7.0</u>	<u>SPRINKLER SYSTEM</u>
7.1	The scope of work shall cover supply, installation testing and commissioning of the sprinkler system covering the following: 1) Sprinkler pumps, electric or diesel driven as shown in the equipment schedule. 2) Installation valve/s with motor-gong. 3) Sprinklers 4) Sprinkler piping 5) Branch flow switches connected to the building fire alarm system.
7.2	Standards The sprinkler installation shall conform to and meet with the requirements set out by the following: 1) IS 1648 - 1961 Code of practice for fire Safety of buildings 2) Fire Insurance Association of India - Tariff Advisory Committee rules. 3) Local Fire Brigade and Fire Engineering Authorities

7.3	<p>Pumps</p> <p>The sprinkler pump shall be single or double suction centrifugal type with split casing and direct driven by electric motor or diesel engine as specified. The pump rating and performance shall conform to the Equipment Schedule and meet the Tariff Advisory Committee duty requirements.</p>
7.4	<p>Pump casing shall be close-grained cast iron with bronze impeller. The shaft sleeve shall be brass or SS 304 and the trim shall be brass or bronze.</p>
7.5	<p>Pump shall be capable of delivering 150% of the rated capacity at 65% of the rated head and the no-delivery head shall be more than 140% of the rated delivery head. The pump casing shall withstand 1.5 times the no-delivery pressure or 2 times of the duty pressure whichever is higher.</p>
7.6	<p>The pump shall be either electrically driven or diesel driven with direct flexible coupling</p>
7.7	<p>The electric drive motor shall be squirrel cage induction conforming to BE 325-1978 and rated for continuous duty (S1). Motor shall have not less than class B insulation and minimum enclosure of IP22. The starter shall be air-cooled fully automatic star delta or autotransformer type. Starters shall conform to BE 8544 and rated for AC- 3 duty conditions.</p>
7.8	<p>Drive rating shall be based on the largest of the following</p> <ol style="list-style-type: none"> 1) Rated pump discharge at rated head 2) 150% of rated discharge @ 65% of rated head 3) Maximum power absorbed by the pump in its Operating range i.e. no- delivery to free discharge.
7.9	<p>The diesel engine shall be naturally aspirated (non- turbo charged) and electrically started. The engine shall have a speed governor to regulate the rated rpm within 5% of its rated speed. The engine shall be complete with starting batteries full-wave selenium rectifier charger, isolator, leads, mounting frame etc. Engine rating shall be same as for the electric motors.</p>
7.10	<p>The sprinkler pump shall be complete with the following accessories :</p> <ol style="list-style-type: none"> 1) Suction and discharge eccentric reducers. 2) Pump coupling guard. 3) Common base frame fabricated mild steel or cast iron.
7.11	<p>Installation valve</p> <p>The sprinkler system shall incorporate one or more (as shown on drawings) installation valve assemblies comprising:</p> <ol style="list-style-type: none"> 1) A mains gate valve 2) In and Out pressure gauge

	<p>3) Test connection of adequate size with valve and orifice plate with pressure connections.</p> <p>4) Water meters and gongs with necessary piping, isolating valve and strainer and drain.</p> <p>The installation valve shall be straight through type suitable for wet pipe sprinkler systems. Valves shall be of cast iron with gunmetal internals and suitable for vertical or horizontal installation. The valve clack shall be of cast gun metal with neoprene seal and retaining ring and shall incorporate a suitable non- return device to compensate for pressure fluctuations which should not mal-operate the clack. The gun metal internals shall provide for smooth waterways for:</p> <p>1) Water valve through a retardchamber 2) Test connection and drain.</p>
7.12	There shall be two pressure gauges, one for the main side and another for the installation side. Each gauge shall have pressure damping brass piping with gunmetal gauge and drain.
7.13	A test connection of adequate size as shown on drawings or as approved shall be provided with a shut-off gate valve, an orifice plates with pressure connections. The discharge from the test connection outlet shall be led to the nearest sump or drain as shown on drawings or as directed.
7.14	The mains water motor and going shall preferably be of cast gun metal body and internals. The valve shall have an associated gunmetal gate valve, strainer preceding the water motor. The water motor and gong shall be located on the discharge lead as shown in drawings or as directed.
7.15	Flow switches shall be as specified under 'Fire Hydrant System'.
7.16	Sprinklers Head:
7.16.1	Sprinklers shall be thermo-sensitive glass-bulb actuated type and be standard products from an established firm of repute and standing and approved by an appropriate authority for firefighting duty. Sprinkler heads shall be pendent/recessed, pendent, concealed, or sideway type.
7.16.2	All sprinklers shall be brass castings polished chrome or white (polyester) unless stated otherwise and rated for 12.0 Kg/sq. cm WG and factory tested for 34.0 Kg/sq. cm. Sprinklers shall be pendant or sideway type as specified and shown on drawings. All sprinklers shall be provided with an adjustable escutcheon finished same as the sprinkler head. Wherever shown and specified, sprinklers shall be recessed type.
7.17	Temperature classification of sprinklers in each space shall be as shown on the drawings. Sprinklers shall be selected for the coverage shown on the drawings and ordinarily be 12/12 mm with K factor of 115 (metric). Wherever the specified sprinkler is not adequate, the tenderer may

	offer Appropriate size required.
7.18	Piping:
7.18.1	All piping shall be mild steel medium duty as specified under "Piping for Fire Fighting". Necessary line flushing valves shall be provided as shown on drawings or as required to.
7.19	Testing:
7.19.1	The entire sprinkler piping shall be tested, with the sprinklers in position, to a hydrostatic test pressure of 13.8 Kg/sq. cm for a period of 48 hours at the end of which there shall be no loss in pressure.
7.19.2	Test valves in each sprinkler installation shall be opened (with temporary drain connection) and the following observations recorded: 1) Start-up of sprinkler pump 2) Operation of water meter gong 3) Operation of flow switches in the appropriate branch. All branches shall be so tested and witnessed and attested by the Engineer-in-charge. All the operating tests shall be carried out in the presence of any local authority, Fire Brigade or Insurance Company.
8.0	<u>OPEN DRENCHER SYSTEM</u>
8.1	The scope of work shall cover supply, installation testing and commissioning of the Drenchers system covering the following: 1) By Pass connection with valves from electric or diesel driven both main fire pumps as shown in Diagram. 2) Sluice Valve, Drain Valves at bottom of riser. 3) Drenchers 4) Drencher piping
8.2	Standards The Drencher installation shall conform to and meet with the requirements set out by the following: 1) IS 1648 -1961 Code of practice for fire Safety of buildings 2) Fire Insurance Association of India - Tariff Advisory Committee rules. 3) Local Fire Brigade and Fire Engineering Authorities.
8.3	Source of water The installation shall be connected to the existing Fire Hydrant pumps, with Sluice valve at riser bottom & 50 mm (2") drain valve fully open between sluice valve & 1st drenchers.
8.4	Valve: The controlling valves shall be located in accessible positions. The Positions of each valve & the drenchers it controls must be clearly indicated by a well-written signboard. Painted in post office red paint.

8.5	Drencher Head:
8.5.1	Drenchers shall be standard products from an established firm of repute And standard and approved by an appropriate authority for firefighting duty.
8.5.2	All Drenchers shall be brass castings polished chrome or white (polyester) unless stated otherwise and rated for 12.0 Kg/sq. cm WG and factory tested for 34.0 Kg/sq. cm. Drenchers shall be walls or curtain drencher's type as specified and shown on drawings.
8.5.3	Spacing of Drencher heads: Drenchers shall be placed with maximum horizontal spacing of 2.5 meters C/C.
8.5.4	Piping All piping shall be mild steel medium duty as specified under "Piping for Fire Fighting". Necessary Valves & drain valves shall be provided as shown on drawings or as required to.
8.5.5	Operation: System shall be operated by the opening of main Sluice valve & closing of drain valve located at bottom of the riser.
8.5.6	Drainage: In open drencher system, the drain valve shall always be kept open except when the drenchers are in operation
8.5.7	Test Valve: A full way 50mm (2") dia. Valve and shall be provided below the controlling valves, so that the running pressure test can be carried out at any time.
9.0	<u>Mode of Measurement</u>
9.1	Sprinkler pump with mounting frame, vibration mounts excluding concrete foundation shall be measured per unit.
9.2	Pump starter panel pressure switches, pressure gauges, control water piping control cabling shall be measured as one unit. In the case of combined Hydrant and Sprinkler Systems, a composite panel with all control elements control cables, pump starters etc. shall be treated as one unit.
9.3	Flow switches shall be measured per unit and excludes wiring to the Fire Alarm panel, which shall from part of Fire Alarm wiring.
9.4	Sprinklers shall be identified as pendant, sideways, or recessed and paid for per unit.
9.5	Installation valve complete with test valve, orifice plate etc. Shall be regarded as one unit.
9.6	Hydrant pump with mounting frame, excluding concrete

	foundation shall be measured per unit.
9.7	Jockey pumps same as Hydrant Pump.
9.8	Sprinkler pumps same as Hydrant Pump.
9.9	Diesel Engine Driven pumps same as Hydrant Pump.
9.10	Pump starter panel necessary, control cabling shall be measured as one unit. In the case of combined Hydrant and Sprinkler Systems, a composite panel with all control elements, control cables, pumps starters etc. Shall be treated as one unit.
9.11	Instrument panel with pressure gauges, pressure switches, control-piping etc. shall be measured as one unit.
9.12	Landing valves with fire hose cabinet with hose reel, rubber line shoes, canvas hose, branch pipe, etc, nozzle etc. shall be measured per unit.
9.13	External hydrant stand post type with sluice valve with tailpieces, etc. shall be measured per unit.
9.14	Fire brigade inlet connection completes with 1 or 2 twin head inlets with non-return valve with 100 or 150 dia respectively of outlet pipe at least 1.5 m long shall be measured per unit.
9.15	Priming tank complete with manhole and other mountings shall be measured per unit.
9.16	External Hose reel boxes complete with hoses etc shall be measured per unit.
9.17	All cast iron & flanged pipe shall be measured in liner lengths along the centerline completed. The rate shall include clamps nuts & bolts joints etc. Completed as specified in the respective items.
9.18	Plane cement concrete for supports & for bedding etc. Shall be measured in Cum of the completed work carrying out as per instructions & shall be paid extra unless otherwise specified in respective items.
9.19	All GI, CI & MS pipes shall be measured in liner lengths along the centerline of the pipe including fittings. The rate for pipeline upped & including 50mm Dai shall be inclusive of all fitting, unless otherwise specified in the schedule of quantities. In the case of pipe line of dia above 50mm fittings will be measured in numbers & paid extra over the linear measurement. The rate shall include all work as specified in the respective items.
9.20	All peet valves, landing valves, ball valves, non-return valves, sluice valves, pressure reducing valves, etc Shall be measured in numbers extra over the linear measurement.
9.21	All main pipe brackets for suspending a battery of pipes shall be measured in numbers as per approximate weights given in schedule of quantities in respective items. (Approximate weight means equal & plus or minus 1/4 kilogram).
9.22	The diameters of pipes & fittings mentioned in the specifications are the inside diameter in all cases.
9.23	In the case of CI, GI, MS diameter of unequal bore; the largest bore shall be measured.

<u>10.0</u>	<u>Pump Pressure Details</u>
10.1	<p>The hydrant pump starting and stopping shall be tested by opening the test valve and record the following :</p> <p>1) Jockey pump start/stop System pressure atStartUp: Kg/sq.cm. Stop : Kg/sq. cm. Time elapsed from startStop : Seconds</p> <p>2) Hydrant PumpStart System pressure atstartup : Kg/sq.cm. Maintained system pressure while discharging the landing valve at the highest point. a) Pump end : Kg/sq.cm b) Highestoutlet : Kg/sq.cm.</p>
10.2	<p>All the operating tests shall be carried out in the presence of any local authority. Fire Brigade or Insurance Co.</p>

SAFETY CODE

i. > 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 handholds shall be provided on the ladder and the ladder shall be given an inclination not steeper than ¼ to 1 (¼ horizontal and 1vertical).

ii. > Scaffolding or staging more than 3.6 m (12 feet) above the ground or floor, swung or suspended from an overhead support or erected with stationary support shall have guard rail properly attached bolted, braced and otherwise secured at least 90 cm (3 feet) high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof 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.

iii. > Working platform, gangways, and stairways should be so constructed that they should not sag unduly or unequally, and if the height of the platform or the gangway or the stairway is more than 3.6m (12 feet) above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in (ii)above.

iv. > Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm (3feet).

v. > 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 9 m. (30 feet) in length while the width between side rails in rung ladder shall in no case be less than 29 cm (11 ½ ") for ladder upto and including 3 m (10 feet)in length. For longer ladders this width should be increased at least ¼" for each additional 30 cm (1 foot) of length. Uniform step spacing shall not exceed 30 cm (12"). Adequate precautions shall be taken to prevent danger from electrical equipment. No materials on any of the sites of 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 persons 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 compromise any claim by any such person.

vi. > Excavation and Trenching :: All trenches, 1.2 m (four feet) or more in depth, shall at all times be supplied with at least one ladder for each 30 m. (100 feet) in length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 90 cm (3 feet) above the surface of the ground. The side of the trenches which are 1.5m (5feet) 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 to collapse. The excavated material shall not be placed within 1.5m (5 feet) of the edges of the trench or half of the depth of the trench which ever is more. Cutting shall be done from top to bottom. Under no circumstances undermining or undercutting shall be done.

vii. >Demolition:: Before any demolition work is commenced and also during the process of the work:-

a) All roads and open areas adjacent to the work site shall either be closed or suitablyprotected.

b) No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electricallycharged.

c) 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 itunsafe.

viii. >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:-

- a. Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
- b. 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.
- c. Those engaged in welding works shall be provided with welder's protective eyeshields.
- d. Stone breakers shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- e. When workers are employed in sewers and manholes, which are in 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.
- f. When workers are employed in sewers and manholes, which are in active use, the contractor shall ensure that the following safety measures are adhered to:-

i) Entry for workers into the line shall not be allowed except under supervision of the Architect or any other higher officer.

ii) 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 Manholes for working inside.

iii) Before entry, presence of toxic gases should be tested by inserting wet lead acetate paper, which changes color in the presence of such gases and gives indication of their presence.

iv) 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.

v) 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.

vi) No smoking or open flames be allowed near the blocked manholes being cleaned.

vii) The Melba 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 melba.

viii) 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.

- ix) Gas masks with oxygen cylinder should be kept at site for use in emergency.
- x) 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 lowered side protected from wind so that they will not be source of friction on any inflammable gas that might be present.
- xi) The workers engaged for cleaning the manholes/sewers should be properly trained before allowing to work in the manhole.
- xii) The workers shall be provided with Gumboots or non-sparking shoes, bump helmets 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.
- xiii) Workmen descending a manhole shall try each ladder step or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole wall.
- xiv) 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.
- xv) The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer in charge regarding the steps in this regard to be taken in an individual case will be final".

g. The contractor shall not employ men below the age of 18 years and women 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 precautions should be taken::

- i) NO paint containing lead or lead products shall be used except in the form of paste or readymade paint.
- ii) 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 dry rubbed and scrapped.
- iii) Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.

Whenever men above the age of 18 are employed on the work of lead painting, the following principles must be observed for such use::

1. a. White lead, sulphate of lead, or products containing these pigments shall not be used in painting operation except in the form of paste or of paint ready for use.
- b. Measures shall be taken in order to prevent danger arising from the application of paint in the form of spray.
- c. Measures shall be taken, whenever practicable, to prevent danger arising from dust caused by dry rubbing down and scraping.

II a. Adequate facilities shall be provided to enable working painters to wash during and on cessation of work.

b. Overall shall be worn by all the working painters during the whole of the working period.

c. Suitable arrangements shall be made to prevent clothing put off during working hours being soiled by painting materials.

III .a. Cases of lead poisoning and of suspected lead poisoning shall be notified and subsequently verified by a medical man appointed by the competent authorities of the Employer.

b. The Employer may require, when necessary a medical examination of workers.

Instructions with regard to the special hygienic precautions to be taken if the painting work shall be distributed to working painters.

2. > When the work is done near any place where there is risk of drowning, all necessary equipment's should be provided and kept ready for use and all necessary steps taken for prompt rescue of the person in danger and adequate provision should be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

3. Use of hoisting machines and tackle including their attachments, anchorage and supports shall conform to the following standards or conditions::

1. a. These shall be of good mechanical construction, sound material and adequate strength and free from patent defects and shall be kept in good repair and in good working order.
- b. Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects.

2. 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.
 3. In case of every hoisting machine and of every chain ring hook, shackle swivel and pulley block used in hoisting or a means of suspension the safe workingload shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In case of a hoisting machine having a variable safe working load, each safe working load and the conditions 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.
 4. In case of Employer's 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.
- xvi) 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 employed on electrical installations which are already energised, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided. The workers should not wear any rings, watches and carry keys or other materials which are the good conductors of electricity.
- xvii) All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in safe conditions 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 or work.
- xviii) 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.
- xix) 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 of the Government, Engineer-in-Charge of the Employer or their representatives.

x) Notwithstanding the above clauses from (i) to (xiv) 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.



MODEL RULES FOR PROTECTION OF HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS EMPLOYED BY CONTRACTORS

1>. Application::

These rules shall apply to all building and construction works in which twenty or more workers are ordinarily employed or are proposed to be employed on any day during the period during which the contract work is in progress.

2>. Definition::

Work place means a place where twenty or more workers are ordinarily employed or are proposed to be employed in connection with construction work on any day during the period during which the contract work is in progress.

3>. First Aid facilities::

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

(2) The first-aid box shall be distinctly marked with a red cross on white ground and shall contain the following equipment,namely::-

a. > For work places in which the number of contract labour employed does not exceed 50-

Each first-aid box shall contain the following equipments::-

- i. 6 small sterilised dressings.
- ii. 3 medium size sterilized dressings.
- iii. 3 large size sterilised burn dressings.
- iv. 1 (30 ml.) bottle containing a two percent alcoholic solution of iodine.
- v. 1 (30 ml.) bottle containing Sal volatile having the dose and mode of administration indicated on the label.
- vi. 1 snake-bite lancet.

- vii. 1 (30 gms) bottle of potassium permanganate crystals.
- viii. 1 pair scissors.
- ix. 1 copy of the first aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
- x. 1 bottle containing 100 tablets (each of 5 grams) of aspirin.
- xi. Ointment for burns.
- xii. A bottle of suitable surgical antiseptic solution.

b. > For work places in which the number of contract

labour exceed 50 - Each first-aid box shall contain the

following equipment:-

- i. 12 small sterilized dressings.
- ii. 6 medium size sterilized dressings.
- iii. 6 large size sterilized dressings.
- iv. 6 large size sterilised burn dressings.
- v. 6 (15 gms) packets sterilised cotton wool.
- vi. 1 (60 ml.) bottle containing a two percent alcoholic solution iodine.
- vii. 1 (60 ml.) bottle containing sulvolatile having the dose and mode of administration indicated on the label.
- viii. 1 roll of adhesive plaster.
- ix. 1 snake bite lancet.
- x. 1 (30 gms.) bottle of potassium permanganate crystals.
- xi. 1 pair scissors.
- xii. 1 copy of the first-aid leaf-let issued by the Director General, Factory Advice Service and Labour Institutes, Government of India.
- xiii. A bottle containing 100 tablets (each of 5 grams) of aspirin.
- xiv. Ointment for burns.
- xv. A bottle of suitable surgical antiseptic solution.

(3) Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.

(4) Nothing except the prescribed contents shall be kept in the First- aid box.

(5) The first Aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of workplace.

(6) A person in charge of the First Aid box shall be a person trained in First-Aid treatment, in work places where the number of contract labour employed is 150 or more.

(7) In work places where the number of contract labour employed is 500 or more and hospital facilities are not available within easy distance of the works.

First/Aid posts shall be established and run by a trained compounder. The Compounder shall be on duty and shall be available at all hours when the workers are at work.

(8) Where work places are situated in places which are not towns or cities, a suitable motor transport shall be kept readily available to convey injured person or person suddenly taken ill to the nearest hospital.

4>.Drinking water::

(a) In every work place there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of cold water fit for drinking.

(b) Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.

(c) Every water supply of storage shall be at a distance of not less than 50 feet from any latrine, drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn. from it for drinking. All such wells shall be entirely closed in and be provided with a trap-door which shall be dust and water-proof.

(d) A reliable pump shall be fitted to each covered well, the trap-door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

5>. Washing facilities::

(i) In every work place adequate and suitable facilities for washing shall be provided and maintained for the use of contract labour employed therein.

(ii) Separate and adequate screening facilities shall be provided for the use of male and female workers.

(iii) Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition.

6>. Latrines and Urinals::

(i) Latrines shall be provided in every work place on the following scale, namely:-

- (a) Where females are employed there shall be at least one latrine for every 25 females.
- (b) Where males are employed, there shall be at least one latrine for every 25 males.

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

- (ii) Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have proper door and fastenings.
- (iii) Construction of latrines:: The inside walls shall be constructed of masonry or some suitable heat-resisting non-absorbent materials and shall be cement washed inside and outside at least once a year. Latrines shall not be of a standard lower than bore-holesystem.
- (iv) a. Where workers of both sexes are employed, there shall be displayed outside each block of latrine and urinal, a notice in the language understood by the majority of the workers "For Men only" or "For Women Only" as the case may be.
 - b. The notice shall also bear the figure of a man or of a woman as the case may be.
- (v) There shall be at least one urinal for male workers upto 50 and one for female workers upto fifty employed at a time. Provided that where the number of male or female workmen, as the case may be, exceeds 500, it shall be sufficient if there is one urinal for every 50 males or females upto the first 500 and one for every 100 or part thereof, thereafter.
- (vi) a. The latrines and urinals shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times.
 - b. Latrines and urinals other than those connected with a flush sewerage system shall comply with the requirements of the Public Health Authorities.
- (vii) Water shall be provided by means of a tap or otherwise so as to be conveniently accessible in or near the latrines and urinals.
- (viii) Disposal of excreta:: Unless otherwise arranged for by the local sanitary authority, arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator. Alternately excreta may be disposed of by putting a layer of night soil at the bottom of a pucca tank prepared for the purpose and covering it with a 15 cm layer of waste or refuse and then covering it with a layer of earth for a fortnight (when it will turn into manure).

- (ix) The contractor shall, at his own expense, carry out all instructions issued to him by the Engineer-in-Charge to effect proper disposal of soil and other conservancy work in respect of the contractors' workmen or employees on the site. The contractor shall be responsible for payment of any charges which may be levied by Municipal or Cantonment Authority for execution of such work on his behalf.

7>. Provision of shelter during rest::

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

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

8>. Creches::

(a) At every work place, at which 20 or more women worker are ordinarily employed, there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years one room shall be used as a play room for the children and the other as their bed-room. The rooms shall be constructed with the specification as similar to these given in para 2 (a) of clause 19H.

(b) The rooms shall be provided with suitable and sufficient openings for light and ventilation. There shall be adequate provision of sweepers to keep the places clean.

(c) The contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and bedding in the bedroom.

(d) The contractor shall provide one dais to look after the children in the creches when the number of women workers does not exceed 50 and two dais when the number of women workers exceed50.

(e) The use of the rooms earmarked as creches shall be restricted to children, their attendants and mothers of thechildren.

9>. Anti-Malarial precautions::

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



APPROVED BRANDS & MATERIALS

FIRE ALARM SYSTEM:

Fire Alarm Control Panel	Ravel/Edwards/Notifire
Repeater Control Panel	Ravel/Edwards/Notifire
Multi Sensor Detector optical type	Ravel/Edwards/Notifire
Smoke Detector optical type	Ravel/Edwards/Notifire
Heat Detector	Ravel/Edwards/Notifire
Duct Detector	Ravel/Edwards/Notifire
Hooter	Ravel/Edwards/Notifire
Response Indicator	Ravel/Edwards/Notifire
Manual Call Point	Ravel/Edwards/Notifire
Fault Isolator Module	Ravel/Edwards/Notifire
Siren	Bosch / Ahuja
2C x 1.5 Sq.mm & 4C x 2.5 Sq.mm Cable	Polycab/ Finolex/ Havells/ Universal
CO2 4.5 Kg Fire Extinguisher	Ceasefire/Safex/Kanex
Mechanical Foam 9 Ltrs Fire Extinguisher	Ceasefire/Safex/Kanex
Water CO2 9 Ltrs fire extinguisher	Ceasefire/Safex/Kanex
Dry chemical 10 Kg Extinguisher with trolley	Ceasefire/Safex/Kanex

FIRE FIGHTING SYSTEM:

<u>Equipment</u>	<u>Makes</u>
MS Pipes/Fittings	Jindal /Tata
MSForgedFittings	VS/JK
Sluice valves	Ka
rtar/ATASI/Newage / Intervalve Wrapping & Coating tape	IWL / Rustech
Paint	Berger / Shalimar / J&N /
Asian Hydrant valves & accessories	Newage / Minimax /Winco
Hosepipes	Newage / CRC /Jayashree
PipesM.S.	Zenith, Gujarat, Jindal,Prakash
Pressure Gauges	Fiebig /H.Guru
Paint	Asian /Berger
Hydrant Valves	Kartar/ ATASI/Newage /Shah
Bhogilal /Minimax	
Hose Reels	Kartar/ ATASI/Newage /Novadura
/Jayashree	
Pumps	Kirloskar / Grundfoss / Mather &Platt
C.I Strainers	Castle / NVR /Intervalve
Motors,	Siemens, Crompton
RubberHoses	Kartar/ATASI/Newage
CanVaS-Hoses	Jayashree / Newage /Minimax

Welding Electrodes	Advani, Philips
Anti-Corrosive pipe coat	(M/s Integrated
Water-proofings) & Rustech Unlined canvas	Nova Dura

NOTE: Any brands indicated under the items specifications in the bill of quantities will prevail over the above indicated makes. Apart from the above makes, any further equivalent make as approved by the Bank, can also be used with prior permission from the Bank and Architect.

Note:

Regarding selecting the make against each item among the preferred makes as specified above, decision of Employer shall be final.

If the makes as mentioned above are not available at the time of execution, the contractor shall get the make approved from the engineer-in-charge and employer before using the same in the work.

SIGNATURE OF THE TENDERER

T E N D E R F O R M

To,
Premises & Estate Section,
Circle office,
Jgamara,
Bhubaneswar.

Name of work: “ Supply,Installation and Erection Of Fire fighting
works at New Circle office building,
Jagamara,Bhubaneswar”

I/We have read and examined the notice inviting tender. Schedules A,B,C,D,E & F, specifications applicable, Drawings and Designs, General Rules and Directions, Conditions of Contract, clauses of contract, Special conditions, Schedule of Rate and all other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the Canara Bank within the time specified in Schedule 'F' at the rates specified in the attached Schedule 'A' viz., schedule of quantities and in accordance in all respects with the specifications, designs drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the conditions of contract and with such materials as are provided for, by, and in all respects in accordance with, such conditions so far as applicable.

I/We agree to keep the tender open for hundred and twenty days from the due date of submission thereof and not to make any modifications in its terms and conditions.

A sum of Rs.25,000/- is hereby forwarded in Demand Draft / BG of..... Bank as Earnest Money Deposit. If I/We, fail to commence the work specified I/We agree that the Bank shall without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely otherwise the said earnest money shall be retained by it towards security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, upto maximum of the percentage mentioned in Schedule 'F' and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clauses 12.2 and 12.3 of the tender form.

I/We hereby declare that I/We treat the tender documents, drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived therefrom to any persons other than a person to whom I/We am / are authorised to communicate the same or use the information in any manner prejudiced to the safety of the state.

I/We fully understand that you are not bound to accept the lowest or any tender you may receive.

Shri. __,Partner/Proprietor/____, is the person authorized to negotiate commercial and technical terms and conditions and sign on behalf of the firm any Agreement, Bills and receipts for this work.

I/We agree that should I/We fail to deposit the full amount of initial security deposit and/or fail to commence the work specified in the above memorandum, an amount equal to the amount of the earnest money mentioned in the form of invitation of tender shall be absolutely forfeited to the Canara Bank and the same, may at the option of the Canara Bank be recovered without prejudice to any other right or remedy available in law, out of the deposit in so far as the same may extend in terms of the said bond and in the event of deficiency out of any other money due to me/us under this contract or otherwise.

I/We agree that until a formal agreement on stamp paper is prepared and signed, this tender with your written acceptance thereof shall constitute a binding contract between us.

**Signature of Contractor Full
Postal Address
Pin Code No. & Telephone
No.**

Dated the: _____ day of _____ 2021

Witness:

Name:

Address:

Occupation:

◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆

ANNEXURE-1:
BIO DATA OF THE TENDERER

(a) Name of the
Tenderer: Address :

TelephoneNo.:
Office :
Residence :
Mobile :
Fax :
E-Mail :

(b) Address of office :

a) Status of the
Firm(Whether company/
Partnership / proprietary)
:

b) Name of the Proprietor/
Partners/ Directors (With
professional qualifications, if
any):

- I)
- II)
- III)

c) Year of establishment :

d) Whether registered with
Registrar of Companies/ firm.
If so, No.&Date :

e) Registration with Tax
Authorities :

a) Income-taxNo. PAN;
(Furnish copies of Income-tax returns)

b) GSTRegistrationNumber :
(Furnish the latest copies of the returns filed)

c) Electrical license number & name of: associate if available

d) Names of the Bankers with address :

I)

II)

e) Turnover of the Company/firm (Please attach copy of documents in support of the details)

Sl.No	Year	Turnover
1	2019-20	
2	2018-19	
3	2017-18	

f) Registration / Empanelment with Government / Public Sector / Banks / Corporate if any (Copy of valid registration / empanelment copy should be enclosed).

NAME OF THE ORGANISATION	NATURE OF WORKS	VALUE OF WORKS	DATE OF REGISTRATION

g) What are your fields of activities? Mention the fields on preference Basis

1)

2)

3)

4)

h) Details of the works executed during the last 7 years prior to 31.03.2020 to meet eligibility Criteria 04.

Sl.	Name of Work	Work executed for (name of the organization with address, concerned office and telephone number)	Nature of work (in brief)	Location of the work	Actual Value of the works	Date of commencement & Completion.

i) Key personnel permanently employed in your organization:

Sl. No	Name	Qualifications	Experience	Particulars of work done	Employed in your firm since	Any other

j) Furnish the names of three responsible clients / persons to whom the major works carried out by the applicant with address and telephone number who will be in a position to certify about the quality as well as past performance of your organization.

NAME OF THE OFFICIAL	ORGANISATION & ADDRESS	CONTACT NUMBERS

k) Furnish the details of AWARDS, CITATIONS, etc., received in recognition of your services in projects designed /associated:

YEAR	Name of the Awardwith details	Name of the organization from whom award was received	Name of the project for which such award was received

DECLARATION:

1. All the information furnished by me / us here above is correct to the best of my knowledge and belief.
2. I / we have no objection if enquiries are made about the work listed by me/ us in the accompanying sheets / annexure.
3. I / We agree that the decision of Bank in selection will be final and binding to me /us.

Place :

SIGNATURE

Date :
DESIGNATION

NAME &
SEAL OF ORGANISATION

ANNEXURE-2:

ACCEPTANCE

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

The letters referred to below shall also form part of this contract agreement:

- a)
- b)
- c)

For & on behalf of the
Canara Bank

Signature:

Designation:

Dated this _____ day of 2021.



ANNEXURE-3 CONTRACT AGREEMENT FORMAT

This agreement made on this day of the month of in the year two thousand twentyone (/ /2021) BETWEEN, Canara Bank a body corporate constituted under the Banking & Companies (Acquisition and Transfer of Undertakings) Act, 1970, having its Circle Office, Jagamara, Bhubaneswar-7510, its duly constituted attorney (hereinafter referred to as Bank) of the ONE PART;

AND

M/s. _____ duly represented by one of its Proprietor/Partner, aged _____ years, S/o Sri _____, residing at _____

_____ and _____ having their _____ office at _____ (hereinafter called the Contractor) of the other part.

WHEREAS THE Bank is desirous of undertaking the _____ and has accepted the tender opened on _____ 2021 submitted by the contractor & the contractor has agreed to perform as set out and subject to the terms & conditions set forth in the said documents mentioned herein under.

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this agreement words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to.
2. The following documents not inconsistent with these presents shall be deemed to form and be read and construed as part of this agreement viz.
 - a) Notice inviting Tender.
 - b) Scope of Works and eligibility Criteria.
 - c) General Rules and Instructions for the guidance of Tenderers.
 - d) General Conditions of contract.
 - e) Special Conditions of contract along with Annexure thereto.
 - f) Tender offer, Contract Agreement Format, Indemnity Bond format & Bank Guarantee format, if any, leading to and prior to acceptance letter.
 - g) Bill of quantities.
 - h) Price bid.

3. In consideration of the payments to be made by the Bank to the Contractor the Contractor hereby covenants and agrees with the Bank to construct, complete and perform the works in conformity in all respects and subject to all terms and conditions/rules as mentioned in the aforesaid documents which shall form part of this agreement.
4. In witness where of, the parties hereunto have set their respective hands and seals the day and year first above written.

For & on behalf of the
Contractor with seal

For& on behalf of the
Canara Bank with seal



ANNEXURE-4:

DETAILED LIST OF CONSTRUCTIONAL PLANTS AND EQUIPMENT AVAILABLE WITH THE CONTRACTOR FOR USE ON THIS WORK.

Sl. No	Name and Description of the Equipment's	Make & Year
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

**Signature of the
Contractor(with seal)**



ANNEXURE-5:

LIST OF RELATIVES EMPLOYED IN CANARA BANK AND WITH THE ARCHITECT FOR THIS WORK.

Sl. No	Name	Designation	Branch/ Office ofBank / Architect	Relationship with Contractor
1.				
2.				
3.				
4.				
5.				

**Signature of the
Contractor(with seal)**



ANNEXURE-8:

FORMAT OF MEASUREMENT BOOK

MEASUREMENT BOOK PAGES NOS. 1 TO

Tender Item No.	Description	Measurement details			Quantity	Remarks
		L	B	D/H		

Site Engineer

Architect

Contractor

Checking/Test checking Engineer Date of checking/Testchecking.

NOTE:

Checking and test checking pertains to items wherever initialled.

ANNEXURE-9:
FORMAT FOR RUNNING BILL

I. Running A/C Bill

- i) Name of Contractor / Agency:
- ii) Name of work:
- iii) Sl. No. of this bill:
- iv) No. and date of previous bill:
- v) Reference to Agreement No:
- vi) Date of written order to commence:
- vii) Date of completion as per agreement:

Sl. No.	Item Description	Unit	Rate (Rs.)	As per tender Qty, Amount (Rs.)
1.	2.	3.	4.	5.

Upto previous R/A Bill	Upto date (Gross)	Present Bill	Remark
Qty. Amount (Rs.)	Qty. Amount (Rs.)	Qty. Amount (Rs.)	
6.	7.	8.	9.

Note:

- 1) If part rate is allowed for any item, it should be _____ Indi cated with reasons for allowing such a rate. Net value since
- 2) If advance payment is made, it should be mentioned previous bill specifically.

II. ACCOUNT OF SECURED ADVANCE, IF ADMISSIBLE ON MATERIALS HELD AT SITE BY THE CONTRACTOR

No.	Item	Quantity	Unit	Amount	Remarks
1.	2.	3.	4.	5.	6

Total value of materials at site.

Secured Advance @ _____ % of above value B

CERTIFIED(i) that the materials mentioned above have actually been brought by the contractor to the site of the work and no advance on any quantity of any of this item is outstanding on their security (ii) that the materials are of imperishable nature and are all required by the contractor for use in the work in connection with the items for which rates of finished work have been agreed upon.

Dated signature of Site Engineer

Preparing the bill

Designation_____

Dated signature of Bank's Architects

(Name of the Architects)

Dated signature of Contractor

CERTIFICATE

The measurements on the basis of which the above entries for the Running Bill No. _____ were made have been taken jointly on _____ and are recorded at pages _____ to _____ of measurement bookNo._____.

The work recorded in the above mentioned measurements has been done at the site satisfactorily as per tender drawings, conditions and specifications.

Signature of Contractor or contractor's representative	Signature of Architect or Architect's representative
Date	Date
Seal	Seal

Test Check by Bank's authorized representative	
Signature of Bank Official	
Date	
Seal	

ANNEXURE-10:
FORMAT FOR RATE ANALYSIS OF ITEMS

- I. MATERIAL
1. Basic Costof Material Rs. _____
2. Wastage- 5% - Rs. _____
- II. Labour: Asper Standard - Rs. _____ Labour
output and labour input required for the Particular item
using quoted laborites.
- III. Machinery/ Tools - Rs. _____ Inputs of
Machinery / Tools requirements asper
the item and hire charges as per market.
- TOTAL (I) + (II)+(III)** Rs. _____
- IV. Tax Liability
[As per contractual clauses will be added]Rs. _____
- V. Add - ½ % for water charges Rs. _____
- ½ % for Electricity Rs. _____
- VI. Any other Expenditure(please specify) Rs. _____
- TOTAL**
Contractor Profit & OH-15% Rs. _____
- GRAND TOTAL** Rs. _____

TDS will be deducted as per standard norms and recovery shall be made for water and electricity as per tender conditions.

ANNEXURE-11
FORMAT OF CERTIFICATE OF PAYMENT

Certificate No. Interim /	Dated	
	Project No.	Air conditioning work
	Particulars:	
Contractor:	Contract / Letter No.	Dated:
	Contractor's Bill No.	Dated:
<p>This is to certify that the amount given below (*) is due to your Contractors for the work done by them and/or against materials delivered at site and/or for advance towards contract on the above referred project.</p> <p>Advance against contract Rs _____ Less: Advance adjusted to-date Rs. _____</p> <hr/> <p>Balance Advance Rs. Advance against material delivered at site Rs. Amount of work done to-date Rs. _____ Total Rs. _____ Less: Retention on work done Rs _____ _____ Less : previously certified upto Rs _____ _____ PRE SENT CERTIFICATE (*) Rs. _____ RUPEES.....</p> <p>The cost of cement or any other material supplied by you or payments made by you directly, if any and not covered herein above, should be adjusted before making the payment of the certificate amount (*).</p> <p>Necessary Deduction U/S194C of the income Tax 1961 and sales tax may be made before paying the above certified amount.</p> <p>By a copy of this letter, we are intimating the Contractors to call on you for the necessary payments.</p>		
Remarks if any:		
The details of Insurance policy are given in the next page.		
Signature of Architects		
Enclosures : Bill		

ANNEXURE-12
FORMAT OF SITE ORDER BOOK

**Name of the work :Fire fighting works at New Circle
office building,
Jagamara,Bhubaneswar.**

Date of Commencement_____

Sl. No	Remarks/ Instructions of the site Engineer/ Architect	Dated Initials of site Engineer/ Architect	Initials of the Contractor for having received the instructions	Action taken with date	Dated initials of the site Engineer	Remarks of the Architects PMC/C.C. Officials
1	2	3	4	5	6	7

ANNEXURE-13

FORMAT FOR APPLICATION BY CONTRACTOR FOR EXTENSION OF TIME

1	Name of the Contractor			
2	Name of the work as given in the Agreement			
3	Agreement WO			
4	Tender amount			
5	Date of commencement of work			
6	Period allowed for completion as per agreement			
7	Date of completion as per agreement			
8	Period for which extension of time has been given			
		<u>Date</u>	<u>Month</u>	<u>Year</u>
	a) 1 st extension vide Bank's Letter No.			
	b) 2 nd extension vide Bank's Letter No.			
	c) 3 rd extension vide Bank's Letter No.			
9	Reasons for which extensions have been previously given (copies of the previous applications should be attached)			
10	Period for which extension is applied for and the reasons thereof including hindrances, time for extra work assigned, if any etc.			

ANNEXURE-14
FORMAT OF HINDRANCE REGISTER

Name of Work		:		Date of start of work	:	
Name of Contractor		:		Period of completion	:	
Agreement No		:		Date of completion	:	
Sl. No	Nature of Hindrance	Date of occurrence of hindrance	Date of which hindrance was removed	Period of hindrance	Signature Site Engineer/ Project Engineer	Remarks
1	2	3	4	5	6	7

ANNEXURE-15

Bank Guarantee Format for Earnest Money Deposit

To
Deputy General Manager,
Canara Bank,
Circle Office,
Bhubaneswar.

WHEREAS _____(Name of Tenderer)
(hereinafter called "the Tenderer" has submitted its tender
dated _____(Date) for the execution of (Name of
Contract) _____
_____ (hereinafter called "the Tender") in favour of **CANARA
BANK,** _____ Here in after called the "Beneficiary";

KNOW ALL MEN by these presents that we, _____(name of the issuing Bank), a
body corporate constituted under the _____ having its Head
Office at _____ amongst others a branch /
office at _____ (hereinafter called "the Bank"
are bound unto the Beneficiary for the sum of Rs _____
(Rupees _____ only)
for which payment well and truly to be made to the said Beneficiary, the Bank binds
itself, its successors and assigns by these presents;

THE CONDITIONS of this obligation are:

- (a) If the Tenderer withdraws its Tender during the period of Tender validity specified
in the Tender; or
(b) If the Tenderer having been notified of the acceptance of his Tender by the
Beneficiary during the period of Tender validity;
(i) fails or refuses to execute the Agreement, if required; or
(ii) fails or refuses to furnish the performance security, in accordance with clause
_____ of conditions of Contract.

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

Notwithstanding anything contained herein

- i) Our liability under this Bank Guarantee shall not exceed
Rs. _____ (Rupees _____ only)
ii) This Bank Guarantee is valid upto _____ and
iii) We are liable to pay the guaranteed amount or any part thereof under this Bank
Guarantee only and only if you serve upon us a written claim or demand on or before
_____ (mention period of guarantee as found under clause (ii) above plus claim period)

Dated _____ day of _____ 2021
SIGNATURE & SEAL OF THE BANK

ANNEXURE-16

BANK GUARANTEE FORMAT FOR SECURITY DEPOSIT

Guarantee No _____
Amount of Guarantee Rs. _____
Guarantee cover from Dated: _____
To Dated: _____
Last Date for Lodgment of claim: _____

To:

Consideration of _____ (here in after called "Beneficiary") having agreed to exempt _____ Ltd., having its Registered Office situated at _____ (hereinafter called the "the obligator(s)") from the demand of security deposit of Rs _____ (Rupees _____ only) under the terms and conditions of an agreement dated _____ (hereinafter called the "said Agreement") for the due fulfillment by the said obligator of the terms and conditions contained in the said agreement , on production of the Bank Guarantee for Rs _____ (Rupees _____ only), at the request of the obligator _____ Bank, a body corporate constituted under the Banking Companies (Acquisition & Transfer of undertakings) Act, 1970 having its Head Office at _____ amongst others a branch at _____ (here in after referred to as "the Bank") has agreed to give following guarantee in favour of the beneficiary for an amount not exceeding Rs _____ (Rupees _____ only) against any loss or damage caused to or suffered or would be caused to or suffered by reason of any breach by the said Obligator(s) of any of the terms and conditions contained in the said agreement.

1. We, the Bank to hereby undertake to pay the amount payable under this guarantee without any demur merely on a demand from the beneficiary stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by reason or any breach of the terms and conditions contained in the said agreement or by reason of the obligator's failure to perform the said agreement. Any such demand in writing made on the Bank shall be conclusive as regards the amount due and payable by the Bank under the guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs _____.
2. We, the Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the beneficiary under or by virtue of the said agreement have been fully paid and its claims satisfied or till the beneficiary certifies that the terms and conditions of the said agreement have been fully discharged this guarantee. Unless a demand for claim under this guarantee is made on us in writing on or before _____ we shall be discharged from

all liabilities under this guarantee thereafter.

3. We, the Bank further agree that the beneficiary shall have the fullest liberty, without consent and without effecting in any manner or obligations hereunder, to extend time of performance the said obligator(s) from time to time or to postpone for any time any of the powers exercisable by the beneficiary against the said obligator(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved of our liability by reason of any extension being granted to the said obligator(s) for any forbearance, act or omission on the part of the beneficiary or any indulgence by the beneficiary to the said obligator(s) or by any such matter or thing whatsoever which under the law relating to sureties would not for this provision have effect of so relieving us.
4. We, the Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the beneficiary inwriting.
5. Notwithstanding anything contained herein:
 - (i) Our liability under this Bank Guarantee shall not exceed
Rs.....
(Rupees.....only)
 - (ii) This Bank Guarantee is valid uptoand
 - (iii) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before (mention period of the guarantee as found under clause (ii) above plus claim period)

PLACE:

DATE:

SIGNATURE

ANNEXURE-17

Name of work:

Details on List of Retired Government / PSU / Bank employees,
employed by the Tenderer:

NAME OF THE RETIRED OFFICIAL	DESIGNATION	NAME & ADDRESS OF THE PREVIOUS EMPLOYER

Name & Signature of Tenderer
(with seal)

ANNEXURE-18
Base Price of materials

Sl. No	Material	Basic Rate Including tax in Rs.
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

ANNEXURE-19
INDEMNITY FORMAT

THIS DEED OF INDEMNITY executed at _____ (Place) on this ____ day
Of _____ month of year two thousand and twenty one (2021) By
_____ (herein after called the contractor) duly represented
by proprietor/one of its partners/director Sri _____, aged ____ years, son
of Sri _____ residing at _____ in favour of
Canara Bank, a body corporate constituted under the Banking companies
(Acquisition and Transfer of undertakings) Act, 1970, having its Head Office, at
112, J.C.Road, Bangalore - 560002 & represented by its Circle Office
Bhubaneswar.

Whereas the contractor had applied for the tender _____

Whereas the tender submitted by the contractor for the above mentioned work
was accepted by Canara Bank and the work of _____
Has been awarded in favor of the contractor vide Ref No _____ And
whereas for undertaking the work awarded as per the above noted reference, the
contractor has entered into contract with Canara Bank on _____

Now this Deed Witnessed that in pursuance of the aforesaid contract ***dated***
_____ and in consideration of Canara Bank having agreed to make
payment on the bills claimed by the contractor herein based on the works
completed in respect of the above referred contract, the contractor hereby
indemnifies and keep harmless Canara Bank & its Architect/consultant and its
officials/staff from time to time and at all times against all actions, prosecutions
proceedings, claims, suits, liabilities (including statutory liability), penalties,
demands, charges, costs (including legal costs) and expenses, damages, losses
and any other expenses which may be caused to or suffered by or made or taken
against the Employer arising out of:

- i) The breach, default or non-performance of undertakings, warranties,
covenants or obligations by the contractor, non-compliance of safety rules,
regulations, instructions by the contractor and mishaps occurring at the site due
to faulty work executed by the contractor.
- ii) Any contravention or Non compliance with any applicable laws, regulations,
rules, statutory or legal requirements by the contractor.

Further, the Contractor indemnifies to protect and save Canara Bank & its

Architect/consultant and its officials / staff from against all claims, losses,
costs, damages, expenses, action suits and other proceedings, resulting from
infringement of any law pertaining to patent, trademarks, copyrights etc. or

such other statutory infringements in respect of the services offered by the contractor.

All Indemnities shall survive notwithstanding expiry or termination of the contract and contractor shall continue to be liable under the indemnities.

There is no limit to claims made by the Employer/third parties in case of infringement of Intellectual property rights or for claims relating to the loss of damage to real property and tangible personal property and for bodily injury or death and in these cases the liability will be unlimited ”.

Signature of Contractor with seal

ANNEXURE-20

SELF-DECLARATION OF MSEs and STARTUPS (TO BE PROVIDED ON LETTER HEAD)

To
The Dy General Manager,
Canara Bank,
Circle Office,
Jagamara,
Bhubaneswar.

SUB:

TENDER NO:

Dear Sir,

We declare that if we withdraw or modify our Bids during the period of validity, or if we are awarded the contract and we fail to sign the contract, or to submit a performance security before the deadline defined in the RFP, we note that we will be suspended for the period of three years from being eligible to submit Bids for contracts with Canara Bank.

Place:

Date:

[Signature of Authorised Signatory]

Name:

Designation:

Seal:

APPENDIX-1: TIME SCHEDULE

1.	Period of Completion	:	60 days INCLUDING HOLIDAYS, SUNDAYS FROM THE DATE OF ISSUE OF WORK ORDER
2.	Defects Liability Period (DLP)	:	12 (Twelve) months from the date of Completion of work.
3.	Date of Commencement	:	Within in 7 days from the date of issue of work order
4.	Liquidated Damages for Delay	:	1% per week up to a maximum of 10% of the project cost as mentioned in the Clause no.2 under Clauses of contract.
5.	Period of final measurement	:	30 (Thirty) days.
6.	Value of work for Interim Certificate	:	Minimum of Rs.10,00,000/- (Ten lakhs)
7.	Period of honoring interim Certificate	:	Total 30 working days. 15 working days for Architect to certify and another 15 working days for Bank to make payment.
8.	Period of honoring Final Certificate	:	30 (Thirty) working Days.
9.	Retention Money	:	3% of Interim Bill amount subject to the ceiling of the total security deposit.
10.	Total Security Deposit (Maximum)	:	As per clause no. 14 of general conditions of contract.
11.	Earnest Money	:	Rs.24,000/-
12.	Cost of Tender Documents	:	Rs.2,000/-

**SIGNATURE OF THE CONTRACTOR
WITH SEAL**

Signature of Tenderer with seal

PRICE BID

(To be submitted in sealed envelope marked “Envelope No. 2- Price Bid”)

TERMS OF PRICE BID

- 1) Prices quoted must be firm for the period /extended period of contract. No escalation shall be admissible in respect of any item of the contract.
- 2) Price quoted must be inclusive of all items required for the entire job of design, manufacture, supply to site, erection, testing, commissioning, and handing over of the equipment's, nothing extra shall be paid. The price quoted shall be exclusive of GST and inclusive of all other taxes & costs incurred.
- 3) All materials shall be insured against theft, damage, etc., from the time they are transported from the factory up to the time of handing over to the owner. No claim in respect of any damage/ loss shall be entertained.
- 4) Watch and ward responsibility at site shall be the responsibility of the firm.

SIGNATURE OF THE TENDERER
WITH SEAL

S.O.Q FOR FIRE FIGHTING WORK FOR CANARA BANK AT PHOKHARIPUT.					
SL.	DESCRIPTION	UNIT	QUANTITY	RATE	Total Amount Including Installation
A.	FIRE HYDRANT , WET RISER & SPRINKLER SYSTEM				
1	Providing & fixing MS Black steel pipe B class conforming to IS : 1239/3589 including all fittings viz. elbows, tees, flanges, e.t.c. reduces, clamps, MS support dash fasteners etc. including painting the pipe with one coat of approved red oxide primer and two coats of approved red enamel paint and welded joints complete with cutting and making good the walls, floors or any other surface. (Jindal)				
	a) 200 mm dia JINDAL Heavy CLASS	Metre	6.00		
	<i>Rate in words:-</i>				
	b) 150 mm dia	Metre	12.00		
	<i>Rate in words:-</i>				
	c) 100 mm dia	Metre	135.00		
	<i>Rate in words:-</i>				
	d) 80 mm dia	Metre	102.00		
	<i>Rate in words:-</i>				
	e) 65 mm dia	Metre	80.00		
	<i>Rate in words:-</i>				
	f) 50 mm dia	Metre	80.00		
	<i>Rate in words:-</i>				
	g) 40 mm dia	Metre	220.00		
	<i>Rate in words:-</i>				
	h) 25 mm dia	Metre	280.00		
	<i>Rate in words:-</i>				
	(i)accessories fittings	lot	1.00		
	<i>Rate in words:-</i>				
2	Providing & fixing swinging type CI Non return Valve with flap and SS hinges complete including matching flanges, nuts & bolts conforming to IS 5312 (Kartar/ATASI/ New Age Or Eqvt)				
	a) 150 mm dia	Set	1.00		
	<i>Rate in words:-</i>				
	b) 100 mm dia	Set	3.00		
	<i>Rate in words:-</i>				
	b) 80 mm dia	Set	1.00		
	<i>Rate in words:-</i>				
3	Providing , fixing CI butterfly valve including counter flange & nut, bolts (Kartar/ATASI/ New Age Or Eqvt)				
	a) 150 mm dia	Each	1.00		
	<i>Rate in words:-</i>				

	b) 100 mm dia	Each	5.00		
	Rate in words:-				
	d) 80 mm dia	Each	2.00		
	Rate in words:-				
4	Providing & fixing GM oblique type hydrant valve with 63 mm outlet instantaneous female coupling with rubber cap and chain conforming to IS ; 5290 including matching flange, gasket, nuts and bolts complete. (Kartar/ATASI/ New Age Or Eqvt)				
	a) Single headed	Each	10.00		
	Rate in words:-				
5	Providing and Fixing 63 mm dia rubberized reinforced rubber line hose pipe in 15 m length conforming to IS : 636 Type A ISI marked with SS male and female instantaneous coupling conforming to IS 903 wounded with 18 SWG copper wire complete (Kartar/ATASI/ New Age Or Eqvt)	Each	20.00		
	Rate in words:-				
6	Providing and Fixing SS branch pipe with 20 mm nozzle conforming to Is 903 complete. (Kartar/ATASI/ New Age Or Eqvt)	Each	10.00		
	Rate in words:-				
7	Providing & fixing swinging type hose reel drum fabricated from 16 SWG MS sheets painted with red colour stove paint 2 coats over 1 coat of primer with 30 m long 20 mm dia rubber hose pipe with 10kg / sqcm working pressure with ABS shut – off nozzle of 5 mm outlet fixed on wall with dash fasteners, 25 mm dia valve etc.as required (Kartar/ATASI/ New Age Or Eqvt)	Each	10.00		
	Rate in words:-				
8	Providing and Fixing M.S. hose box with lockable arrangements to accommodate 2 CP hose of 15 m length and one branch pipe painted white inside and red outside with one key(Kartar/ATASI/ New Age Or Eqvt)	Each	10.00		
	Rate in words:-				
9	Providing and fixing Fire pump with CI body, bronze impeller, C 40 shaft coupled by means of flexible coupling with electric motor, Antivibration pads, coupling guard , baseplate etc. (Kirloskar)				
	A.Electric Motor Driven Fire pump.				
A	30KW/40HP, 2950 RPM Discharge 97m ³ /hr , 1620 LPM at the head of 56mtr SUGGESTED	Each	1.00		
	Rate in words:-				
B	B. Electric Motor Driven Standby Fire Pump(Kirloskar)	Each	1.00		

	42HP,1800 RPM, radiator cooled the diesel engineDischarge 97m3/hr at the head. 1620 LPMof 56mtr SUGGESTED Include the 200 Ltr Diesel Tank With diesel and Battery				
	Rate in words:-				
C	C. Electric Motor Driven Jockey Pump (Kirloskar)				
	Capacity of Pump = 180 LPM 2900 RPM				
	Head = 56 Meters	Set	1.00		
	Rate in words:-				
D	450 LPM Terresh Pump(Kirloskar)	Set	1.00		
	Rate in words:-				
10	Providing & fixing dust and vermin proof cubicle type motor control centre fabricated from 16 SWG MS sheet with powder coated finish and comprising of required incomer, outgoing TPN SFU, meters & other accessories, for above pump set under serial No. 10 (As per specification of fire service) Make-L&T / Eqvt.	Set	1.00		
	Rate in words:-				
11	Providing and Fixing heavy duty PVC insulated, PVC armoured aluminium conductor cables 1100 V grade including necessary support clamps and connection lugs complete in all respect.(Polycab/ Finolex)				
	a) Power cable 90 mm ²	LS	1.00		
	Rate in words:-				
	b) Power cable 15 mm ²	LS	1.00		
	Rate in words:-				
	c) Control cable copper armoured, 2cX2.5mm ²	LS	1.00		
	Rate in words:-				
12	Providing and fixing GI earthing strip 25mm x 6 mm thk. From all motors and MCC panel to be connected in all approved manner to general earthing system.	LS	1.00		
	Rate in words:-				
13	Providing and Fixing Gunmetal collecting head with 63 mm dia instantaneous type inlet 150 dia flanged, outlet with built in check valve for fire brigade connection to fire riser (IS 904)				
	a) FOUR way (Kartar/ATASI/ New Age Or Eqvt)	Each	1.00		
	Rate in words:-				
14	Providing and fixing INDFOSS make pressure switches for cut – out and cut in pressure with cock .	Each	3.00		
	Rate in words:-				

15	Providing and fixing pressure guage for cut – out and cut in pressure with cock HGURU/ Eqvt.	Each	1.00		
	Rate in words:-				
16	Providing & Fixing of Y Stainer with flanges, nuts and bolts, gasket etc.(Koley/Kartar/ATASI/ Eqvt.)				
	150 mm dia	Nos.	2.00		
	Rate in words:-				
17	Air Release Valve	Each	2.00		
	Rate in words:-				
18	Ball Valve	Each	10.00		
	Rate in words:-				
19	Pendent type sprinkler head 68 deg C (HD/Tuna/Tyco/ Kartar/Eqvt.)	Each	230.00		
	Rate in words:-				
20	Flexible Hose For Sprinkler (Optional Depending your interior drawing and False Cieling) Make- GILPRO	Each	230.00		
	Rate in words:-				
21	Earth Cutting /Fire Core Cutting	CUM	20.00		
	Rate in words:-				
22	Structural Support HYDRANT AND SPRINGLER	Ls	1.00		
	Rate in words:-				
TOTAL					

Total Amount in words:-