Detailed Notice Inviting Tender
(DNIT)

GOVERNMENT OF HARYANA

Public Works Department

Name of work: Construction of District Head Quarter Office Building for Excise and Taxation Department in Sector-3 at Fatehabad in Fatehabad District.

Estimate Cost: **Rs 1543.01 Lakhs**

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e-Tender Notice

PRESS NOTICE

HARYANA Public Works Dept.(B&R) DEPARTMENT

Notice Inviting Tender No. 20250123-12-22-121130915/Public Works Dept.(B&R) Dept/HRY. Dated: 23/01/2025

The **Governor of Haryana** invites bids from the eligible contractors online on the website: https://etenders.hry.nic.in for the work detailed in the table.

Name of Work:	**Construction of District Head Quarter Office Building for Excise and Taxation Department in Sector-3 at Fatehabad in Fatehabad District.**
Cost of work	**Rs 1543.01 Lakhs**
Time Limit	**18 Months**

Tenders to be received till: **05:00** hours on dated **13/02/2025**

1. Pre bid meeting (if applicable) will be held on **30/01/2025** at **03:00** Hrs. in the office of **Superintending Engineer, Hisar Circle, PWD BandR Br. Hisar**

2. Bidder shall pay Rs. **1180**/- as E-Service fee through Net Banking in favour of **"Society for IT initiative fund for e-Governance" payable at Chandigarh..**

3. For further details and e-tendering schedule please visit website http://etenders.hry.nic.in

For and on behalf of **Governor of Haryana**

Executive Engineer (Civil)

Public Works Department

PROVINCIAL DIVISION PWD B AND R BRANCH FATEHABAD[PD Fatehabad]

Phone No: 9416312045

DETAIL NOTICE INVITING TENDER

The **Governor of Haryana** invites the bids from the contractors who have created login ID on the portal ***http://works.haryana.gov.in*** through online bids on the website for the work detailed in the table below.

Sr. No.	Name of work	Cost of work	Earnest money (For unregistered bidders only) (in Rs.)	Cost of bid document (in Rs.)	Time limit	Date and time for bid Submission.
1	2	3	4	5	6	
1.	**Construction of District Head Quarter Office Building for Excise and Taxation Department in Sector-3 at Fatehabad in Fatehabad District.**	**Rs 1543.01 Lakhs**	**₹30,86,000.00** for Contractors & **₹15,43,000.00** for Societies	**₹20,000.00**/-	**18 Months**	**13/02/2025** Upto **05:00** hrs.

1. Bidders registered on the portal ***https://works.haryana.gov.in*** are not required to deposit any earnest money and are required to submit earnest money declaration Form as provided in Section 7 of the bidding document.
2. Interested bidders are encouraged to get themselves registered as contractor on the portal ***https://works.haryana.gov.in.***
3. Interested bidders must have contractor ID on ***https://works.haryana.gov.in.***
4. Cost of tender document fee: **₹20,000.00**/-(*non refundable*) (to be submitted online).
5. Availability of Bid document and mode of submission:

a.	Tender document is available online on http://etenders.hry.nic.in
b.	1. **Earnest Money :**for un-registered bidders – Online. 2. **Earnest Money Declaration Form:** Bidders registered by Haryana Government – the bidder shall upload a earnest money declaration form as per format given in Section – 7 in the bidding document online, which can be generated from contractor login on Haryana Engineering Works Portal.
c.	Tender document fee **₹20,000.00**/- to be paid - Online
d.	Submission of Technical Bid – Online
e.	Submission of Price Bid - Online

Note: Bidding shall be online only and no document shall be accepted in any physical form.

5. In the first instance, Earnest money /Earnest money Declaration Form (as provided in Section 7) shall be opened online and checked for correctness along with tender document fee. If the earnest money declaration form / earnest money are found in order, Technical Bid shall be opened (Online) in the presence of such contractors who choose to be present. The Financial offer shall be opened (Online) only, if the bidders meet the qualification criteria as per the bid document. The date of opening of Financial Bid shall be intimated separately.

   Exemption of tender document fees of the Contractors/Agencies:

   - "Single tender shall normally not be considered unless there are special circumstances to do so. In such eventuality, decision to accept the single tender shall be as prescribed in the rules. If special circumstances are not present, tenders shall be re-called. If re-tendering again results in a single

   - Tender, its acceptance may be considered with proper justification and reasons". Where on first call of tender, number of bidders participate in the tender but on Technical evaluation only one participating bidder qualifies, the tender shall be re-invited treating it as single tender.

   - Those bidders shall not be required to pay tender document fees, who choose to submit bids again on tender being re-called on account of single tender being received or single bidder qualifies on first call.

6. Bidders shall have to pay the e-Service Fees of Rs. 1180 in favour of 'Society for IT initiative fund for
   e-Governance through Debit Cards & Internet Banking Accounts are required to be paid online directly through Internet Baking Accounts.

7. Last Date/ Time for receipt of bids through e-tendering: **13/02/2025** up-to **05:00** Hrs. (time)

8. The site for the work is available.

9. Only online submission of bids is permitted, therefore; bids must be submitted online on website
   https://etenders.hry.nic.in. The technical qualification part of the bids will be opened online at **PD Fatehabad** on **14/02/2025 a**t **09:00** hrs. by the authorized officers. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened online on the next working day at the same time.

10. The bid for the work shall remain open for acceptance during the bid validity period to be reckoned from the last date of 'Submission of Online Bids. Bids as submitted online shall be valid for **120** days from the date of bid closing i.e. from last date of submission of online bids. In case the last day to accept the tender happens to be holiday, validity to accept tender will be the next working day.

11. Bidders may bid for any one or more of the works mentioned in the Table above.

12. To qualify for a package of contracts made up of this and other contracts for which bids are invited in the same NIT, the bidder must demonstrate having experience and resources sufficient to meet the aggregate of the qualifying criteria for the individual contracts.

13. Other details can be seen in the bidding documents. The Employer shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt to notify the bidders of any bid updates, the Employer shall not be liable for any information not received by the bidder. It is the bidders' responsibility to verify the website for the latest information related to the tender.

14. Conditional tenders will not be entertained and are liable to be rejected.

15. In case the day of opening of tenders happens to be holiday, the tenders will be opened on the next working day. The time, mode and place of receipt of tenders and other conditions will remain unchanged.

16. The invitation of this tender can be cancelled without assigning any reason.

17. The societies shall produce an attested copy of the resolution of the Co-operative department for the issuance of tenders.

18. The tender without Earnest money /Earnest money Declaration form and tender document fee will not be opened.

19. The jurisdiction of court will be as defined as in Appendix to ITB.

20. The tender of the bidder who does not satisfy the qualification criteria in the bid documents are liable to be rejected and financial bids will not be opened.

21. The Pre-bid meeting will be held as per the details in Appendix to ITB.

22. The bidders may note that the works are to be carried out strictly as per the applicable laws, permits, rules and regulations. Any damages / penalties imposed by any statutory authority, like NGT etc, on account of noncompliance of any applicable laws, permits, rules and regulations shall have to be borne by the contractor.

23. The undersigned reserves the right to reject any or all of the bids without assigning any reason.

For and on behalf of **Governor of Haryana**

Executive Engineer (Civil)

Public Works Department

PROVINCIAL DIVISION PWD B AND R BRANCH FATEHABAD[PD Fatehabad]

Phone No: 9416312045

KEY DATES

1.	**Date of Issue of Notice Inviting Bid**	:	Date **23/01/2025**
2.	**Period of availability of Bidding Documents on website http://etenders.hry.nic.in**	:	**From 23/01/2025 To 13/02/2025**
3.	**Time, Date of Pre-bid Meeting**	:	Date **30/01/2025** at **03:00** hrs
4.	**Deadline for Receiving Bids online**	:	Date **13/02/2025** at **05:00** hrs
5.	**Opening of Bids (Tender Document fee &Earnest Money Declaration Form)**	:	Date **14/02/2025** at **09:00** hrs
6.	**Time and Date for opening of Part-I of the Bid (Technical Qualification Part)**	:	Date **14/02/2025** at **09:00** hrs
7.	**Time and Date of opening of Part-II of the Bid (Financial Part) of the Bidders who Qualify in Part I of the Bid.**	:	To be intimated.
8.	**Last Date of Bid Validity**		Date **13/06/2025**
9.	**Officer inviting Bids**	:	**Executive Engineer (Civil) PROVINCIAL DIVISION PWD B AND R BRANCH FATEHABAD[PD Fatehabad] Public Works Department**

Section 1: Instructions to Bidders(ITB)

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A. General

1. Scope of Bid

1.1 The Employer (Appendix to ITB) on behalf of 'Authority' (defined in Appendix to ITB) invites bids for the construction of Works as described in these documents and referred to as "the Works". The name of the works is provided in the Appendix to ITB. The bidders may submit bids for any or all of the works detailed in the table given in the Notice Inviting Tender. Bid for each work should be submitted separately. The bidders should refer Section 4-A for the detailed scope of work and Section 4-B for Technical Specifications for the work.

1.2 The successful Bidder will be expected to complete the Works by the Intended Completion Date specified in the **Contract data**.

1.3 Throughout these documents, the terms "bid" and "tender" and their derivatives (bidder/tender, bid/tender, bidding/tendering etc.) are synonymous.

1.4 The jurisdiction of court will be as defined as in Appendix to ITB

2. Source of Funds

2.1 The expenditure on this project will be met from the budget provided by the Govt. of Haryana.

3. Eligible Bidders

3.1 The Invitation for Bids is open to all bidders have created contractor Id on the portal *https://works.haryana.gov.in* and eligible bidders meeting the eligibility criteria as defined in ITB.

3.2 The bidders in Joint Ventures are allowed as per the Appendix to ITB.

3.3 Bidders shall not be under a declaration of ineligibility for corrupt and fraudulent practices by the Central Government, the State Government or any public undertaking, autonomous body, authority by whatever name called under the Central or the State Government.

4. Qualification of the Bidder

A) For works put to tender upto Rs. 25.00 Lacs, a valid Registration Certificate/ contractor's id created on Haryana Engineering Works Portal.(No technical evaluation shall be carried out for this category). The intending bidders who are not registered are required to submit the following documents in place of Registration:

Interested bidders who are not registered should upload the following documents at the time of bidding:

a. Mandatory Documents

i. Proof of Constitution - Partnership deed (in case of the partnership firm registration); or Certificate of Incorporation (in case of Private limited company, public limited company, Public sector undertaking, Limited Liability Partnership, registration); or Any proof substantiating constitution (in the case of society, trust,

AOP, Government department, local authority, statutory body registration.)

ii. PAN Card
iii. GST Certificate
iv. Undertaking of Non-Blacklisting – (Certificate that contractor has not been blacklisted previously)
v. Proof of immovable properties/self-certification that doesn't have any property
vi. Cancelled Cheque / Proof of bank account
vii. Proof of Address
viii. Similar works experience for the category of registration
ix. The applicant himself or his employee (at least one) should be a Diploma Holder Engineer (Civil/Electrical/Agri./Hort.) as applicable. Accordingly, self-declaration certificate of applicant and his employee along with copy of Diploma certificate is to be submitted.
x. In case of registration for electrical works the applicant or the employee of the applicant should submit valid Wireman License from Chief Electrical Inspector, Haryana

b. Optional Documents

i. TAN Number Document
ii. MSME Registration Certificate (If Applicable)
iii. Form 26AS for last three years (Provided by Income Tax Department)
iv. LLCs (Limited Liability Company) to upload last audited balance sheet
v. Change of constitution of agency
vi. Litigation History (If any)
vii. List of Abandoned works (if any)
viii. Any Other relevant documents

In case during examination it is found that any bidder for this category of works has not submitted above mandatory documents or has submitted false documents his bid shall be rejected.

B) For works put to tender from Rs. 25.01 Lacs to Rs. 64.00 Lacs, a valid enlistment in the respective category on Haryana Engineering Works Portal with proof of ownership/ lease of specified machinery/ manpower as listed in Clause 39 in section 1 of this document.

(Technical Evaluation shall be carried out as per the requirement specified in Clause 39 in section 1 of this document and financial bid of only responsive qualifying bidders shall be opened)

C) For works put to tender from Rs. 64.01 Lacs onwards, following qualification criteria is required to be fulfilled:-

4.1 All bidders shall provide the Qualification Information as specified in Section-2 of this document, Forms of Bid and the undertaking(s) as specified in Section 7. The undertaking should be of a date after the first invitation of this tender. Initially the scanned copy of undertaking(s) shall have to be submitted in technical bid and before signing the agreement, the original undertaking(s) should be submitted by the bidders to the concerned Executive Engineer. The undertaking(s) in original shall make integral part of the agreement. The bidder should also meet the requirements mentioned in clause 39 .

4.2 All bidders participating in tenders costing more than Rs. 25.00 lacs shall include the following information and documents with their bids in Section 2, Qualification Information unless otherwise stated in the Appendix to ITB:

(a) Copies of original documents defining the constitution or legal status, place of registration, and principal place of business; written power of attorney of the signatory of the Bid to commit the Bidder;

(b) Total annual financial turnover of each of the last three years duly certified by Chartered Accountant;

(c) (i) Experience in works of a similar nature and size for each of the last seven years with certificates from the concerned officer not below the rank of Executive Engineer or equivalent;

(ii) and details of works in progress or contractually committed with detail of clients who may be contacted for further information on those contracts;

(d) The undertakings as per the format and language given in Section 7 of the document. The undertakings should be of a date after the invitation of this tender. The bids accompanying with the language deviated from the language of the draft provided in Section 2 shall be treated as non – responsive.

4.3 All care should be taken by the bidder to submit correct information and documents in first place. No cognizance of the documents submitted subsequently by the bidder on his own regarding his technical bid shall be taken. However, clarification can be sought upto the extent of clearing any doubt on the documents already submitted online.

4.4 Joint Ventures are permitted to bid for the work as defined in the Appendix to ITB. Bids submitted by a Joint Venture (JV) shall comply with the following requirements:

a. There shall be a Joint Venture Agreement (as per the format given in Section-7) specific for these contract packages between the constituent firms, indicating clearly, amongst other things, the proposed distribution of responsibilities both financial as well as technical for execution of the work amongst them. For the purpose of this clause, the most experienced lead partner will be the one defined. A copy of the Joint Venture agreement shall be submitted before any award of work could be finalized.

b. The bid, and in the case of the successful bidder, the Form of Agreement, etc., shall be signed and / or executed in such a manner as may be required for making it legally binding on all partners (including operative parts of the ensuing Contract in respect of Agreement of Arbitration, etc.). On award of work, the Form of Agreement and Contract Documents shall be signed by all partners of the Joint Venture to conclude Contract Agreement.

c. Lead partner shall be nominated as being partner-in-charge; and this authorization shall be evidenced by submitting a power of attorney signed by the legally authorized signatories of all the partners.

d. The partner-in-charge shall be authorized to incur liabilities and to receive instructions for and on behalf of the partners of the Joint Venture, whether jointly or severally,and entire execution of the Contract (including payment) shall be carried out exclusively through the partner-in-charge. A copy of the said authorization shall be furnished in this Bid.

e. All partners of the Joint Venture shall be liable jointly and severally for the execution of the Contract in accordance with the Contract terms, and a relevant

statement to this effect shall be included in the authorization mentioned under sub clause I above as well as in the Form of Tender and the Form of Agreement (in case of a successful bidder).

f. In the event of default by any partner, in the execution of his part of Contract, the Employer shall be so notified within 30 days by the partner-in-charge, or in the case of the partner-in-charge being the defaulter, by the partner nominated as partner-in-charge of the remaining Joint Venture. The partner-in-charge shall, within 60 days of the said notice, assign the work of the defaulting partner to any other equally competent party acceptable to the Employer to ensure the execution of that part of the Contract, as envisaged at the time of bid. Failure to comply with the above provisions will make the Contractor liable for action by the Employer under the Conditions of Contract. If the Most Experienced i.e. Lead Partner defined as such in the Communication approving the qualification defaults, it shall be construed as default of the Contractor and Employer will take action under the Conditions of Contract.

g. Not with standing the permission to assigning the responsibilities of the defaulting partner to any other equally competent party acceptable to the Employer as mentioned in sub clause (f) above, all the partners of the Joint Venture will retain the full and undivided responsibility for the performance of their obligations under the Contract and/ or for satisfactory completion of the Works.

h. The bid submitted shall include all the relevant information as required under the provisions of Sub-Clause 4.5 D of ITB and furnished separately for each partner.

4.5 Qualification Criteria [applicable as per cost of work put to tender]

4.5A To qualify for award of the contract, each bidder in its name should have :-

i) Minimum average annual financial turnover (as certified by the Chartered Accountant) during the last three years, ending 31st March of the previous financial year, should not be less than 30% of the value of work. The turn over shall be updated to price level of the last financial year at the rate of 8% per year compounded yearly.

ii) Experience of having successfully completed or substantially completed similar works (i.e. road/bridge/building works/airport runway/PHED/ IWRD works/) as applicable for that type of tender during the last seven years ending last day of month previous to the one in which bids are invited should be either of the following:-

(a) Three similar works each costing not less than 40% of the value of work.

or

(b) Two similar works each costing not less than 50% of the value of work.

or

(c) One similar work costing not less than 80% of the value of work.

The amount of works shall be updated to price level of the last financial year at the rate of 8% per year compounded yearly.

Note 1:- The works may have been executed by the applicant as Prime contractor or as a member of Joint Venture As contractor, he should have acquired the experience of execution of all major

items of works under the proposed contract. In case a project has been executed by a Joint Venture, the turnover or experience shall be evaluated in proportion to their participation of the Joint Venture. In case of experience as a sub contractor, the certificate from the Principal Employer shall have to be furnished.

Note 2:- Substantially completed works means those works which are at least 95% completed as on the date of submission (i.e. gross value of work done upto the last date of submission is 95% or more of the original contract price or enhanced contract price as the case may be) and continuing satisfactorily.

Note 3:-Similar works means road work for road tender, building work for building tender, bridge work for bridge tender and so on.

For these, a certificate from the employer shall be submitted along with qualification information clearly mentioning the name of work, Contract Value, billing amount. Date of commencement of works, satisfactory performance of the Contractor and any other relevant information.

4.5 B Each bidder must produce:

(i) An affidavit (format affidavit to be attached) in the prescribed format given in this document in Section 7. The affidavit should be of a date later then the date of calling of tender; and

(ii) Such other certificates as defined in the Appendix to ITB. Failure to produce the certificates shall make the bid non-responsive.

4.5 C To qualify for a package of contracts made up of this and other contracts for which bids are invited in the Notice Inviting Tender, the bidder must demonstrate having experience and resources sufficient to meet the aggregate of the qualifying criteria for the individual contracts.

4.5 D If bidder is a Joint Venture, the partners would be limited to three (including lead partner). Joint Venture firm shall be jointly and severally responsible for completion of the project. Joint Venture must fulfill the following minimum qualification requirement.

i. The lead partner shall meet not less than 50% of qualification criteria given in sub-clause 4.5 A (i) & (ii) of ITB above.

ii. Each of the remaining partners shall meet not less than 25% of all the criteria given in sub-clause 4.5 A (i) & (ii) of ITB above.

iii. The Joint Venture must also collectively satisfy the subject of the criteria of Clause 4.5 B and 4.5 C of ITB for this purpose the relevant figures for each of the partners shall be added together to arrive at the Joint Venture total capacity which shall be 100% or more.

iv. In the event that the Employer has caused to disqualify under Clause 4.7 of ITB below all of the Joint Venture partners will be disqualified.

v. Joint Venture Applicants shall provide a certified copy of the Joint Venture Agreement in demonstration of the partners undertaking joint and several liabilities for the performance of any contract entered into before award of work.

vi. The available bid capacity of the JV as required under Clause 4.6 of ITB below will

be applied for each partner to the extent of his proposed participation in the execution of the work. The total bid capacity available shall be more than estimated contract value.

vii. The Sub-Contractors' experience and resources shall not be taken into account in determining the bidder's compliance with the qualifying criteria.

4.5. E Any other requirement as specified elsewhere in the ITB.

4.6 Bidders who meet the minimum qualification criteria will be qualified only if their available bid capacity for construction work is equal to or more than the total bid value.The available bid capacity will be calculated as under:

Assessed Available Bid Capacity = (A*N*2- B) Where

A = Maximum value of financial turnover (as certified by the Charted Accountant) in any one year during the last three years (updated to price level of the last financial year at the rate of 8% per year compounded yearly).

N = Number of years prescribed for completion of the works for which bids are invited (period up to 6 months to be taken as ½ and more than 6 months as 1 in a year).

B = Value, at the current price level (compounded yearly @8% per year), of existing commitments and on-going works to be completed during the period of completion of the works for which bids are invited.

4.7 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirements; and/or
- record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc: and/or.
- participated in the previous bidding for the same work and had quoted unreasonably high bid prices and could not furnish rational justification to the employer.

5. One Bid per Bidder

5.1 Each Bidder shall submit only one Bid for one work. A Bidder who submits more than one Bid for one work will cause the proposals with the Bidder's participation to be disqualified.

6. Cost of Bidding

6.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will, in no case, be responsible or liable for those costs.

7. Site Visit

7.1 The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the Site of Works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense. The Bidder acknowledges that prior to the submission of the bid, the Bidder/Contractor has, after a complete and careful examination, made

an independent evaluation of the Scope of the Project, Specifications and Standards of design, construction and maintenance, Site, local conditions, physical qualities of ground, subsoil and geology, suitability and availability of access routes to the Site and all information provided by the Employer or obtained, procured or gathered otherwise, and has determined to its satisfaction the accuracy or otherwise thereof and the nature and extent of difficulties, risks and hazards as are likely to arise or may be faced by it in the course of performance of its obligations hereunder. The Employer makes no representation whatsoever, express, implicit or otherwise, regarding the accuracy, adequacy, correctness, reliability and/or completeness of any assessment assumptions, statement or information provided by it and the Bidder confirms that it shall have no claim whatsoever against the Employer in this regard.

B. BIDDING DOCUMENTS

8. Content of Bidding Documents

8.1 The set of bidding documents comprises the documents listed below and addenda issued in accordance with Clause 10 of ITB.

1. Detail Notice Inviting Tender
2. Instructions to Bidders including Appendix to bid
3. Qualification Information and other forms
4. Conditions of Contract (Part I General Conditions of Contract, and Contract Data; Part II Special Conditions of Contract)

5 Technical Specifications

6 Drawings

7 Bill of Quantities

8 Form of Acceptance, Form of Agreement, Issue of Notice to Proceed with the Work,

9 Forms of Securities and Form of Unconditional Bank Guarantee.

8.2 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms and specifications, bill of quantities, forms and drawings in the Bid Document. Failure to comply with the requirements of Bid Documents shall be at the bidder's own risk. Pursuant to clause 26 hereof, bids, which are not substantially responsive to the requirements of the Bid Documents, shall be rejected.

9. Clarification of Bidding Documents and Pre-bid Meeting

9.1 A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing or through email at the Employer's address indicated in the invitation to bid. The Employer will respond to any request for clarification which he receives earlier than 10 days prior to the deadline for submission of bids. Copies of the Employer's response will be put on website including a description of the enquiry but without identifying its source.

9.2 If a pre-bid meeting is to be held, the bidder or his authorized representative is invited to attend it. Its date, time and address are given in the Appendix to ITB.

9.3 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

9.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of the enquiry) and the responses given will be uploaded for information of the public or other bidders. Any modifications of the bidding documents listed in Clause 8.1 of ITB, which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 10 of ITB and not through the minutes of the pre-bid meeting.

9.5 Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder.

10. Amendment of Bidding Documents

10.1 Before the deadline for submission of bids, the Employer may modify the bidding documents by issuing corrigendum.

10.2 Any addendum/corrigendum thus issued shall be part of the bidding documents and put on website only and shall be deemed to have been communicated to all the bidders. The Employer will assume no responsibility in this regard.

10.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer shall extend, as necessary, the deadline for submission of bids, in accordance with Clause 20.2 of ITB.

C. PREPARATION OF BIDS

11. Language of Bid

11.1 All documents relating to the Bid shall be in **English** language.

12. Documents Comprising the Bid

12.1 The Bid submitted by the Bidder shall be in two separate parts:

Part I Technical bid This shall be named Technical Qualification Part of Bid and shall comprise of:

i) The cost of the bidding documents.

ii) The Earnest money in any of the forms as specified in clause 16 of ITB or Earnest Money declaration form specified in Section-7 as applicable.

iii) Authorized address and contact details of the Bidder having the following information:

a. Address of communication:
Telephone No.(s):
Office:
Mobile No.:

b. Facsimile (FAX) No.:

c. Electronic Mail Identification (E-mail ID):

iv) **Qualification information, supporting documents as specified in ITB**.

v) Any other information/documents required to be completed and submitted by bidders, as specified in the Appendix to ITB, and

vi) Scanned copy of the affidavit (**on the format given in Section 7 of bid document**).

Part II. Financial Bid:- It shall be named Financial Bid and shall comprise of:

(i) Priced bill of quantities for items specified in Section 6;

12.2 The following documents, which are not submitted with the bid, will be deemed to be part of the bid.

Section	Particulars
1.	Detail Notice Inviting Tender
2.	Instructions to Bidders
3.	Conditions of Contract
4.	Contract Data
5.	Technical Specifications
6.	Drawings

13. Bid Prices

13.1 The Contract shall be for the whole Works, as described in Clause 1.1 of ITB, based on the priced Bill of Quantities submitted by the Bidder.

13.2 For item rate tenders, the bidder shall fill in item rate at its appropriate place in figures. Items for which no rate or price is entered by the bidder will not be paid for by the employer. Such item, where the bidder does not quote the price or leaves it blank, will be treated as item to be executed free of cost item from the contractor.

13.3 For percentage rate tender, the bidder shall make its due diligence and quote a single percentage above or below HSR items including any premium if applicable and individual rate for NS items which are in the BOQ but not in HSR. NS *Items in the BOQ, for which no rate or price is entered by the bidder will not be paid for by the Employer and considered as nil rate items.*

13.4 All duties, taxes (excluding GST) , royalties, compensation, cost and other levies payable by the Contractor under the Contract or to execute item(s) of work or for any other cause, shall be included in the rates, prices, and total Bid price submitted by the Bidder online. The GST amount shall be reimbursed on production of proof of deposit of GST with Govt. for the previous payment.

13.5 The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provision of Clause 42 A of the Conditions of Contract.

14. Currencies of Bid

14.1 The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees.

15. Bid Validity

15.1 Online Bids shall remain valid for a period of not less than 120 days after the deadline date for bid submission specified in ITB. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.

15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request that the bidders may extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing or by email. A bidder may refuse the request without forfeiting his Earnest money. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his Earnest money for a period of the extension, and in compliance with Clause 16 of ITB in all respects.

16. Earnest money and Earnest money declaration Form

16.1. The Bidder who does not have contractor id on HEWP can not participate in tendering process. Bidders who have contractor ID but have not registered on HEWP can participate in tendering process by paying the earnest money through online payment on the portal. Bidders who have contractor Id and are registered on HEWP and also have deposited one time deposit are eligible for participation in the tender by annexing bid specific Earnest Money Declaration Form generated from HEWP.

16.2. The bidder who is registered as contractor with Haryana Government and is availing the exemption available for earnest money, shall upload bid specific Earnest Money Declaration form duly downloaded from HEWP.

16.3 Any bid from the registered bidders not accompanied by an acceptable Earnest Money Declaration form (in case exemption is availed) as above or not secured as indicated in Sub-Clauses 16.1 above shall be rejected by the Employer as non-responsive.

16.4. The successful bidder shall be de-registered with forfeiture of his/its one time deposit of EMD exemption amount on HEWP and further barred from participation in future bidding for a period of 2 years, in case of failure to submit the Performance Bank Guarantee as per Clause 34 of this document.

17. Alternative Proposals by Bidders

17.1 Bidders shall submit offers that comply with the requirements of the bidding documents, including the Bill of Quantities and the basic technical design as indicated in the drawings and specifications. Conditional offer or alternative proposals will be rejected as non-responsive.

18. Format and Signing of Bid

Deleted

D. ONLINE SUBMISSION OF BIDS

19. Bidding through E-Tendering System

Instructions to bidder on Electronic Tendering System

These conditions will over-rule the conditions stated in the tender documents, wherever relevant and applicable.

19.1 Registration of bidders on eProcurement Portal:-

All the bidders intending to participate in the tenders processed online are required to get registered on the centralized e – Procurement Portal i.e. https://etenders.hry.nic.in. Please visit the website for more details.

19.2 Obtaining a Digital Certificate:

19. 2.1 The Bids submitted online should be encrypted and signed electronically with a Digital Certificate to establish the identity of the bidder bidding online. These Digital Certificates are issued by an Approved Certifying Authority, by the Controller of Certifying Authorities, Government of India.

19.2.2 A Digital Certificate is issued upon receipt of mandatory identity (i.e. Applicant's PAN Card) and Address proofs and verification form duly attested by the Bank Manager / Post Master / Gazetted Officer. Only upon the receipt of the required documents, a digital certificate can be issued. For more details please visit the website – https://etenders.hry.nic.in.

19.2.3 The bidders may obtain Class-II or III digital signature certificate from any Certifying Authority or Sub-certifying Authority authorized by the Controller of Certifying Authorities or may obtain information and application format and documents required for the issue of digital certificate from the authority.

19.2.4 The bidder must ensure that he/she comply by the online available important guidelines at the portal https://etenders.hry.nic.in for Digital Signature Certificate (DSC) including the e-Token carrying DSCs.

19.2.5 Bid for a particular tender must be submitted online using the digital certificate (Encryption & Signing), which is used to encrypt and sign the data during the stage of bid preparation. In case, during the process of a particular tender, the user loses his digital certificate (due to virus attack, hardware problem, operating system or any other problem) he will not be able to submit the bid online.

Hence, the users are advised to keep a backup of the certificate and also keep the copies at safe place under proper security (for its use in case of emergencies).

19.2.6 In case of online tendering, if the digital certificate issued to the authorized user of a firm is used for signing and submitting a bid, it will be considered equivalent to a no-objection certificate/power of attorney /lawful authorization to that User. The firm has to authorize a specific individual through an authorization certificate signed by all partners to use the digital certificate as per Indian Information Technology Act 2000. Unless the certificates are revoked, it will be assumed to represent adequate authority of the user to bid on behalf of the firm in the department tenders as per Information Technology Act 2000. The digital signature of this authorized user will be binding on the firm.

19.2.7 In case of any change in the authorization, it shall be the responsibility of management / partners of the firm to inform the certifying authority about the change and to obtain the digital signatures of the new person / user on behalf of the firm / company. The procedure for application of a digital certificate however will remain the same for the new user.

19.2.8 The same procedure holds true for the authorized users in a private/Public limited company. In this case, the authorization certificate will have to be signed by the directors of the company.

19.3 Pre-requisites for online bidding:

In order to bid online on the portal http://etenders.hry.nic.in, the user machine must be updated with the latest Java & DC setup. The link for downloading latest java applet & DC setup are available on the Home page of the e-tendering Portal.

19.4 Online Viewing of Detailed Notice Inviting Tenders:

The bidders can view the detailed N.I.T and the time schedule (Key Dates) for all the tenders floated through the single portal e-Tender system on the Home Page at http://etenders.hry.nic.in

19.5 Download of Tender Documents:

The tender documents can be downloaded free of cost from the e-Tender portal http://etenders.hry.nic.in

19.6 Key Dates:

The bidders are strictly advised to follow dates and times as indicated in the online Notice Inviting Tenders. The date and time shall be binding on all bidders. All online activities are time tracked and the system enforces time locks that ensure that no activity or transaction can take place outside the start and end dates and the time of the stage as defined in the online Notice Inviting Tenders.

19.7 Online Payment of eService fee & Bid Preparation & Submission (PQQ/ Technical & Commercial /Price Bid):

i) Online Payment e-Service fee:

The online payment for eService fee can be done using the secure electronic payment gateway by bidders/ Vendors online directly through Debit Cards & Internet Banking Accounts. The secure electronic payments gateway is an online interface between contractors and Debit card / online payment authorization networks.

ii) PREPARATION & SUBMISSION Of online APPLICATIONS/BIDS:

Detailed Tender documents may be downloaded from e-Tenders website (http://etenders.hry.nic.in) and tender mandatorily be submitted online.
Scan copy of Documents to be submitted/uploaded for Prequalification or Technical bid under online. The required documents (refer to DNIT) shall be prepared and scanned in different file formats (in PDF /JPEG/MS WORD format such that file size is not exceed more than 10 MB) and uploaded during the on-line submission of Technical Bid.

FINANCIAL or Price Bid PROPOSAL shall be submitted mandatorily online in the Excel Format.

19.8 ASSISTANCE TO THE BIDDERS:-

In case of any query regarding process of e-tenders and for undertaking training purpose, the intended bidder can also avail the following and can contact service provider as per below:

Office Timings of Help-desk support for Single e-TenderPortal of Government of Haryana- Technical Support Assistance will be available over telephone Monday to Friday (09:00 am. To 5:00 pm) 0172-2700275 also contact to help desk team of Delhi (24 x 7) as given below
0120-4001002
0120-4200462
0120-4001005
0120-6277787
All queries would require to be registered at our official email support as under (only those queries which are sent through email along with appropriate screen shots or error description will be considered as registered with the Help-desk)

(a) Technical:– Support e proc (at) nic (dot) in
(b) Policy Related:- cppp-doc(at) nic (dot) in

Important Note:-

(a) Any intending bidder can contact the helpdesk on or before prior to 4 hours of the scheduled closing date &time of respective Tender event.
(b) For queries pertaining to e-Payment, please contact the help desk atleast 2 business days prior to the closing date&time of Tender event.
(c) Help-desk support will remain closed during lunch break i.e. from 1:30 PMupto 2:15 PM on each working day.

Schedule for Training

Haryana e-Tender Help Desk Office will remain closed on Saturday, Sunday and National Holidays.

NOTE:- Bidders participating in online tenders shall check the validity of his/her Digital Signature Certificate before participating in the online Tenders at the portal http://etenders.hry.nic.in.
For help manual please refer to the 'Home Page' of the e-Tender website at https://etenders.hry.nic.in and click on the available link 'How to ...? to download the file.

20. Deadline for Submission of Bids

20.1 Complete Bids in two parts as per clause 19 above must be submitted by the Bidder online not later than the date and time indicated in the Appendix to ITB.

20.2 The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10.3 of ITB. In such case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

21. Late Bids

21.1 Any Bid received by the Employer after the deadline prescribed in Clause 20 will be returned unopened to the bidder.

22. Withdrawal or modification

22.1 No bid shall be modified or withdrawn after the deadline of submission of bids.

22.2 Withdrawal or modification of a bid between the deadline for submission of bids and the expiration of the original period of bid validity specified in clause 15.1 above or as extended pursuant to Clause 15.2 may result in the forfeiture of the Earnest money pursuant to Clause 16 or invite action as per Earnest Money declaration undertaking.

E. Bid Opening and Evaluation

23. Bid Opening

23.1 The Employer inviting the bids or its authorized representative will open the bids online in the presence of the bidders or their representatives who choose to attend at time, date and the place specified in Appendix to ITB. The bids shall be evaluated by committee generated online by the system.

23.2 In the event of the specified date for the Opening of bids being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.

23.3 The file containing the Part-I of the bid will be opened first.

23.4 The amount, form and validity of the cost of bidding document and earnest money furnished with each bid will be announced. If the cost of bidding document and earnest money furnished does not conform to the amount and validity period as specified in the Invitation for Bid, and has not been furnished in the form specified in Clause 16, the remaining technical bid will not be opened and will be disqualified for opening of financial bid. Similarly for registered bidders, bid not accompanied by the Earnest Money declaration form, shall be rejected and technical bid will not be opened.

23.5 The Employer will also prepare minutes of the Bid opening, including the information disclosed in accordance with Clause 23.4 of ITB.

23.6

(i) Subject to confirmation of the earnest money, the bids accompanied with valid earnest money/earnest money declaration form will be taken up for evaluation with respect to the Qualification Information and other information furnished in Part I of the bid pursuant to Clause 12.1.

(ii) The technical bid will be evaluated on the basis of the documents submitted online by the bidder and no modification of his technical bid will be sought from the bidder. No cognizance of the documents submitted subsequently by the bidder on his own regarding his technical bid shall be taken. However, clarification can be sought upto the extent of clearing any doubt the documents already submitted online.

(iii) The bidders will respond in not more than 7 days of issue of the clarification letter, which will also indicate the date, time and venue of opening of the Financial Bid.

(iv) Immediately, on receipt of these clarifications the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration.

23.7 The Employer shall hoist the result of technical evaluation of bids alongwith the reasons for rejection of Part-I of the bid (Technical bid) on the website. Thereafter, the employer shall wait for 7 days before opening the financial bid of the qualified bidders so as to give the disqualified bidders and opportunity to avail, if they so desire, any remedy available under the Law.

23.8 Part II (Financial Bid) of bids of only those bidders will be opened online, who have qualified in Part I of the bid. The bidders' names, the Bid prices, the total amount of each bid, and such other details as the Employer may consider appropriate will be notified by the Employer at the time of bid opening.

23.9 The Employer shall prepare the minutes of the online opening of Part-II of the Bids.

24 Process to be Confidential

Information relating to the examination, clarification, evaluation, and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful Bidder has been announced. Any attempt by a Bidder to influence the Employer's processing of bids or award decisions may result in the rejection of his Bid.

25 Clarification of Bids and Contacting the Employer

25.1 No Bidder shall contact the Employer on any matter relating to its bid from the time of the bid opening to the time the contract is awarded **except as specified in clause 25.3 here under.** If the bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.

25.2 Any attempt by the bidder to influence the Employer's bid evaluation, bid comparison or contract award decision may result in the rejection of his bid.

25.3 To assist in the examination, evaluation, and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by email, but no change in the price or substance of the Bid shall be sought, offered, or permitted.

26. Examination of Bids and Determination of Responsiveness

26.1 During the detailed evaluation of "Part-I of Bids", the Employer will determine whether each Bid
(a) meets the eligibility criteria defined in Clauses 3 and 4;
(b) has been properly signed;
(c) is accompanied by the required securities; and
(d) is substantially responsive to the requirements of the bidding documents.

During the detailed evaluation of the "Part-II of Bids", the responsiveness of the bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities.

26.2 A substantially responsive "Financial Bid" is one which conforms to all the terms, conditions, and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one
(a) which affects in any substantial way the scope, quality, or performance of the Works;
(b) which limits in any substantial way, inconsistent with the bidding documents, the Employer's rights or the Bidder's obligations under the Contract; or
(c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

26.3 If a Bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

27. Correction of Errors.

27.1. "Financial Bids" determined to be substantially responsive will be checked by the 'Employer' for any errors. Errors will be corrected by the Employer as follows:

(a) Where there is a discrepancy between the unit of any item mentioned in BOQ, from that in HSR, the unit mentioned in HSR shall prevail and the total resulting from multiplying the quoted rate by the quantity, shall be taken in to account.

27.2. The amount stated in the "Financial Bid" will be corrected by the Employer in accordance with the above procedure and the bid amount adjusted in the following manner.

(a) If the Bid price increases as a result of these corrections, the amount as stated in the bid will be the 'bid price' and the increase will be treated as rebate;

(b) If the bid price decreases as a result of the corrections, the decreased amount will be treated as the 'bid price'.

28. Adjusted in bid price pursuant to clause 27 above, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected, and action as per provisions of Earnest Money Declaration Form shall be initiated or Earnest Money shall be forfeited as applicable**.**

29. Evaluation and Comparison of Bids

29.1 The Employer will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 26 of ITB.

29.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:

(a) adjustments to reflect discounts or other price offered in Financial bid submitted online.

29.3 If the Bid of the successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices. After evaluation of the price analysis, the Employer may require that the amount of the Performance Security set forth in Clause 34 of ITB be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract. The amount of the increased Performance Security shall be decided at the sole discretion of the Employer, which shall be final, binding and conclusive on the bidder. The amount of additional performance security shall be equal to an amount arrived at as below: -

(i) If the Bid price offered by the contractor is negatively unbalanced upto the 10% of the estimated project cost (as per analytical rates / N.S. rates).

In such cases no additional performance security shall be taken from the successful bidder;

(ii) If the bid price offered by the contractor is negatively unbalanced below 10% and upto 20% of the estimated project cost (as per analytical rates / N.S. Rates): -

In such case, Additional performance security shall be calculated @ 20% of the {(% below quoted by the contractor – 10%) of the estimated cost of the project};

(iii) If the bid price offered by the contractor is further negatively unbalanced below 20% of the estimated project cost (as per analytical rates / N.S. Rates): -

In such case, the Additional performance security shall be calculated @ 30% of the {(%

below quoted by the contractor – 10%) of the estimated cost of the project};

(iv) 20% of the total unbalanced amount of all the seriously unbalanced items (i.e. unbalanced by more than 40% of the estimated amount of that particular item/items).

Out of (i), (ii), (iii) and (iv) above Whichever is higher is to be deposited by the successful bidder.

29.4 Validity of above Additional performance Security shall be valid until a date 28 days from the date of issue of the certificate of completion.

29.5 The Employer reserves the right to accept or reject any variation or deviation. Variations and deviations and other factors, which are in excess of the requirements of the Bidding documents or otherwise result in unsolicited benefits for the Employer, shall not be taken into account in Bid evaluation.

29.6 The estimated effect of the price adjustment conditions under Clause 47 of the *Conditions of Contract*, during the period of implementation of the Contract, will not be taken into account in Bid evaluation.

30. The agency/Bidder to whom the work is allotted shall be paid lowest of the following in the running/final bills.

i) Amount calculated with the accepted rates of lowest agency.
ii) Amount worked out with the accepted percentage above/below HSR+CP/analytical rates/ NS item rates, worked out in financial statement. Financial statement will be made a part of agreement.

F. AWARD OF CONTRACT

31. Award Criteria

31.1 Subject to Clause 32 of ITB, the Employer will award the Contract to the Bidder whose Bid has been determined:

(i) To be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid price and

(ii) To be within the available bid capacity adjusted to account for his bid price which is evaluated the lowest in any of the packages opened earlier than the one under consideration. In no case, the contract shall be awarded to any bidder whose available bid capacity is less than the evaluated bid.

32. Employer's Right to Accept any Bid and to Reject any or all Bids

32.1 Notwithstanding Clause 31 above, the Employer reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all bids, at any time prior to the award of Contract, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Employer's action.

33. Notification of Award and Signing of Agreement

33.1 The bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by email confirmed by registered letter. This letter (hereinafter and in the Part I *General Conditions of Contract* called the "Letter of Acceptance") will state the sum that the Employer will pay to the Contractor in consideration of the execution, completion and maintenance of the works, by the Contractor during defect liability period as prescribed by the Contract (hereinafter and in the Contract called the"Contract Price").

33.2 The notification of award will constitute the formation of the Contract, subject only to the furnishing of a Performance Security in accordance with the provisions of Clause 34.

33.3 The Agreement will incorporate all agreements between the Employer and the successful Bidder. It will be signed by the Employer and the successful Bidder after the Performance Bank Security is furnished.

33.4 Upon the furnishing by the successful Bidder of the Performance Security, the Employer will promptly notify the other Bidders that their Bids have been unsuccessful.

33.5 Upon the furnishing by the successful Bidder of the Performance Security, the Employer shall issue the letter to proceed with the work.

33.6 If the lowest tenderer (L-1) backs out, his earnest money shall be forfeited or action as per conditions of Bid Security Declaration Form shall be initiated. The agency will be de-barred for giving tenders for two year and the second lowest tenderer (L-2), third lowest tenderer (L-3) in order of sequence, may be called upon to bring his offer to the same level as the originally first lowest tenderer. In the event of their refusal to do so, tenders shall be recalled. In case of great urgency, authority competent to accept the tender may authorize call of limited or short notice tenders.

34. Performance Security

34.1.a) Within 15 days of receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in any of the forms given below for an amount equivalent to 5% of the Contract price plus additional security for unbalanced Bids in accordance with Clause 29.3 of ITB and Conditions of Contract:

A Bank Guarantee in the form given in Section 7/FDR in the name of Executive Engineer concerned. Performance bank guarantee shall be valid until a date 45 days after the expiry of Defect Liability-cum-Maintenance Period.

b) As per Haryana Govt. Co-operation Department Notification No. 8366-C-7-2016/13818 dated 08.12.2016, the performance security for Co-operative Labour and Construction Societies shall be half of the performance security applicable to contractors for works upto any value. In case of the Cooperative Labour and Construction Societies consisting of all women members or all SC members the performance security will be 25% of the performance security applicable to contractor.`

34.2 If the performance security is provided by the successful Bidder in the form of a Bank Guarantee/FDR, it shall be issued either (a) at the Bidder's option, by a Nationalized/Scheduled Indian Bank or (b) by a foreign bank located in India and acceptable to the Employer**.**

34.3 Failure of the successful Bidder to comply with the requirements of Sub-Clause 34 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Earnest money/action due as per Earnest Money declaration. The bidder shall also be debarred for period of 2 year from participation in tenders in any of the Departments/Boards/Corporations etc. of Haryana Government. If the work of is an urgent nature and cannot brook delay involved in re-tendering, the remaining tenderers shall be offered the lowest approved rates. If more than one tenderer turns up, then preferences shall be given to the tenderer graded according to the rates quoted in the first instance.

34.4 Whenever the work value is enhanced on account of variation in quantities / change of scope of work during the execution, beyond 10% above the original agreement amount, the contractor shall be required to submit the additional Performance Security in the form of Bank Guarantee @ 5% of the enhanced value of contract with the same validity as applicable to the original Performance Security and a supplementary agreement for the revised work value shall be signed with the department which shall also define the mile stones as well as revised intended completion date.The contractor shall deliver additional Performance Security within 21 days of receipt of request in this regard from the employer.

Illustration:

Original Amount of agreement	Enhancement	Amount after enhancement	Additional Performance
Rs 1,00,000.00	Rs 10,000.00	1,10,000.00	Nil
Rs 1,00,000.00	Rs 15,000.00	1,15,000.00	5% of Rs 15,000.00

34.5 Failure of the contractor to submit a valid additional Performance Bank Guarantee @ 5% of the enhanced value of contract as above shall invite similar penalties as prescribed for non-submission of original Performance Security. The time control on the revised work shall also be monitored and implemented on pro-rata basis as per the clauses applicable to the original work.

35. Advances

The Employer will provide Advances as stipulated in the conditions of contract, subject to maximum amount, as stated in the Contract Data.

36. Corrupt or Fraudulent Practices

36.1 The 'Employer' will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question and will declare the firm ineligible, either indefinitely or for a stated period of time; to be awarded a contract by Haryana Government in any of Departments/Boards/Corporations etc.

36.2 The successful bidder shall be required to sign an **Integrity Pact** as provided in Section 7.

36.3 The Employer requires the Bidders/Contractors to strictly observe the laws against fraud and corruption in force in India, namely, Prevention of Corruption Act, 1988.

37. Debarring

If a registered but unverified bidder submits Financial Bid online but he/it fails to submit the Earnest Money instruments in physical form by 5:00 pm with the Executive Engineer on the last date of submission of this tender, he / it shall be blacklisted for participation in the bidding in all future tenders floated by any of Department/Boards/Corporations etc. of Government of Haryana, for a period of 2 years

38. Completion of work

The agency to whom the work is allotted shall complete the entire work as per drawings irrespective of quantities in the DNIT. The agency is bound to consult the drawings before tendering and tender the work accordingly. However, Clause 37 of GCC shall be applicable on the varied quantities

39. Instructions / Special Qualification Requirements (Any other condition for execution of works may also be added)

(i) For works of any value involving bituminous work of DBM and /or BC/SDBC irrespective of amount of work:

Each bidder must demonstrate (Submit proof) of the ownership of Batch Type Hot Mix Plant for the bids of the works where there is a provision of Batch Type Hot Mix Plant in the BOQ. The Batch Type Hot Mix Plant should be in possession of the bidder on the date of the tender **and should be in workable condition**. The Batch Type Hot Mix Plant should be within a radial distance of 50 kms. This 50 kms distance shall be measured from the center of the starting and ending point of road work put to tender. The bidder shall submit a key-map showing the distance of location of Batch Type Hot Mix Plant to the center of starting and ending point of the road work put to tender. If reclaimed bituminous meterial is provided to be used in BOQ then the Batch Type Hot Mix Plant should have suitable arrangements for mixing RAP.

In case the agency does not possess the Batch Type Hot Mix Plant within a radial distance of 50 kms then the agency shall furnish unconditional Bank Guarantee / FDR (Approved vide govt. no. 121573 Dt. 18/10/23) of Rs. 1.00 Cr. which shall be released after the installation of Batch Type Hot Mix Plant within a radial distance of 50 kms. In case the bidder does not install Batch Type Hot Mix Plant within a radial distance of 50 kms, when the plant is required for execution of work, the Bank Guarantee shall be forfeited.

(ii) For works with provision of bituminous works of BM and / or PC only:

Each bidder must demonstrate (Submit proof) of the ownership of Drum Type / Batch Type Hot Mix Plant for the bids of the works where there is a provision of Drum Type Hot Mix Plant in the BOQ. The Drum Type / Batch Type Hot Mix Plant **(in workable condition)** should be in possession of the bidder on the date of tender and the bidder shall submit proof of ownership of Drum Type / Batch Type Hot Mix Plant. The Drum Type / Batch Type Hot Mix Plant should be within a radial distance of 50 kms. This 50 kms distance shall be measured from the center of the starting and ending point of road work put to tender. The bidder shall submit a key-map showing the distance of location of Drum Type / Batch Type Hot Mix Plant to the center of starting and ending point of the road work put to tender. If reclaimed bituminous meterial is provided to be used in BOQ then the Batch Type / Drum Type Hot Mix Plant should have suitable arrangements for mixing RAP.

In case the agency does not possess the Drum Type / Batch Type Hot Mix Plant within a radial distance of 50 kms, then the agency shall furnish unconditional Bank Guarantee / FDR (Approved vide govt. no. 121573 Dt. 18/10/23) of Rs. 25.00 Lacs which shall be released after the installation of Drum Type / Batch Type Hot Mix Plant within a radial distance of 50 kms as stated above. In case the bidder does not install Drum Type / Batch Type Hot Mix Plant within a radial distance of 50 kms, when the plant is required for execution of work, the Bank Guarantee shall be forfeited.

Appendix to ITB

Instructions to Bidder Clause Reference

Sr. No.	Description	Value to be printed on system generated CBD	Clause No.
1.	Authority	**Governor of Haryana**	[Cl.1.1] or Press Notice/ DNIT
2.	The Employer is Designation: Address:	**Sh. Ajit Singh** **Superintending Engineer** **Superintending Engineer, Hisar Circle, PWD BandR Br. Hisar**	[Cl.1.1] or Press Notice/DNIT
3.	Name of authorized Representative	Sh. K.C Kamboj	[Cl.1.1]
4.	The Engineer is Designation: Address:	Executive Engineer Executive Engineer Provincial Division, PWD BandR Br Fatehabad	[Cl.1.1]
5.	The Intended Completion Date for the whole of the Works is **18 Months** after start of work.	**18 Months**	[Cl.1.1, 17&27]
6.	The Works is *(Name of the work)*	Construction of District Head Quarter Office Building for Excise and Taxation Department in Sector-3 at Fatehabad in Fatehabad District.	[Cl.1.1]
7.	The jurisdiction of court is	**Fatehabad**	[Cl.1.1]
8.	The average annual financial turn over amount is	**462.90** lacs (Rs. Four crore sixty two lacs and ninety thousand)	[Cl.(4.5 A) (i)]
9.	Value of work is as under :- --- **Similar Work:-**	(i) Three works :- Rs **617.21** Lacs (ii) Two works :- Rs **771.51** Lacs (iii) Single Work:- Rs **1234.41** Lacs --- Building work	[Cl.(4.5 A) (ii)] --- [Cl.(4.5 A) Note 3]
10.	Joint Ventures	**Not allowed**	[Cl.3.1,4.4]
11.	The contact person is:	Executive Engineer, **Sh. K.C Kamboj** Address : **Executive Engineer, Provincial Division, PWD BandR Br. Fatehabad** Telephone No. **01667220120**	[Cl.7.1]
12.	Place, Time and Date for pre-bid meeting are	Place :- **Superintending Engineer, Hisar Circle, PWD BandR Br. Hisar** Time :- Date :-	[Cl.9.2]

Public Works Department

Section-2

Qualification Information

Notes on Form of Qualification Information
The information to be filled in by bidders in the following pages will be used for purposes of post-qualification as provided for in Clause 4 of the Instructions to Bidders. This information will not be incorporated in the Contract. Attach additional pages as necessary.

1.	**Individual Bidders**	
1.1	Constitution or legal status of Bidder Place of registration: Principal place of business: Power of attorney of signatory of Bid (if required)	*[attach copy]* _____ _____ *[attach]*
1.2	Total annual financial turnover of each of the last three year duly certified by Chartered Accountant	(Rs. In lacs) Year _____ Year _____ Year _____

1.3.1 Work performed as prime Contractor (in the same name and style) on construction works of a similar nature and volume over the last Seven years. Attach certificate from the Engineer-in-charge.

Project Name	Name of Employer	Description of work	Value of contract	Contract No	Date of Issue of Work Order	Stipulated date of completion	Actual Date of Completion	Remarks explaining reasons for delay, if any

1.3.2 Work performed as Sub-Contractor (in the same name and style) on construction works of a similar nature and volume over the last Seven years. Attach certificate from Principal Employer (Main Client).Attach legal document of agreement / subcontract, Form 26 AS of the sub-contractor.

Project Name	Name of Employer	Description of work	Value of contract	Contract No	Date of Issue of Work Order	Stipulated date of completion	Actual Date of Completion	Remarks explaining reasons for delay, if any

1.3.3 Information on Bid Capacity (works for which bids have been submitted and works which are ongoing and yet to be completed) as on the date of this bid.

Existing commitments and on-going construction works:

Description of Work	Place & State	Contract No & Date	Name & Address Of Employer	Value of Contract (Rs.In lacs)	Stipulate period of completion	Value of works remaining to be complete (Rs.Lacs) *	Anticipated Date of completion
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

1.3.3 (A) Works for which bids already submitted:

Description of works	Place & State	Name& Address of Employer	Estimated value of works (Rs. in lacs)	Stipulated period of completion	Date when decision is expected	Remarks, if any
1	2	3	4	5	6	7

Note:- Here, any of the departments may specify the quantities of the work executed by the bidder.

Section 3

Conditions of Contract

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Section 3

Part I General Conditions of Contract

A. General

1. Definitions

1.1 Terms which are defined in the Contract Data are not also defined in the Conditions ofContract but keep their defined meanings. Capital initials are used to identify defined terms.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.

Compensation Events are those defined in Clause 40 hereunder.

The Completion Date is the date of completion of the Works as certified by the Engineer, in accordance with Clause 48.1.

The Contract is the Contract between the Employer and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in Clause 2.3.

The Contract Data defines the documents and other information which comprise the Contract.

The Contractor is a person or corporate body whose Bid to carry out the Works, including routine maintenance, has been accepted by the Employer.

The Contractor's Bid is the completed bidding document submitted by the Contractor to the Employer.

The Contract Price is the price stated in the Letter of Acceptance and thereafter as adjustedin accordance with the provisions of the Contract.

Days are calendar days; months are calendar months.

A Defect is any part of the Works not completed in accordance with the Contract or distressed development in the work irrespective of any causes.

The Defect Liability-cum-Maintenance Periodis the period named in the contract Data and calculated from the Completion Date.

The 'Defect Liability-cum-Maintenance Period' is without any payment for maintenance activities.

The Defect Liability-cum-Maintenance Period Certificate is the certificate issued by Engineer, after the Defect Liability-cum-Maintenance Period has ended and upon correction of Defects by the Contractor.

The Maintenance means the activities required to be carried out for routine maintenance of road relating to works covered in scope of work as per the agreement or enhanced agreement.

Drawings include calculations and other information provided or approved by the Engineer for the execution of the Contract.

The Employer is the party as defined in the Contract Data, who employs the Contractor to carry out the Works, including routine maintenance. The Employer may delegate any or all functions to a person or body nominated by him for specified functions.

The Engineer is the person named in the Contract Data (or any other competent person appointed by the Employer and notified to the Contractor, to act in replacement of the Engineer) who is responsible for supervising the execution of the Works and administering the Contract.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The Initial Contract Price is the Contract Price listed in the Employer's Letter of Acceptance.

The Revised Contract Price is the Contract Price agreed after signing of a supplementary agreement with the Employer.

The Intended Completion Date is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time.

Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.

Plant is any integral part of the Works that shall have a mechanical, electrical, electronic, chemical, or biological function.

The **Site** is the area defined as such in the Contract Data.

Site Investigation Reports are those that were included in the bidding documents and are reports about the surface and subsurface conditions at the Site.

Specification means the Specification of the Work included in the Contract and any modification or addition made or approved by the Engineer. Specifications for Road and Bridge Works (Latest Edition as on date of Tender) published by Ministry of Road Transport & Highways shall be applicable or any or all other specifications/IS Codes applicable to a work.

The **Start Date** is given in the Contract Data. It is date when the Contractor shall commence execution of the works. **It does not necessarily coincide with any of the Site Possession Dates.**

A **Sub-Contractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the construction work in the Contract, which includes work on the Site.

Temporary Works are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.

A **Variation** is an instruction given by the Engineer, which varies the Works.

The Works,as defined in the Contract Data, are what the Contract requires the Contractor to construct, install, maintain, and hand over to the Employer.

Substantial completion means those works which are at least 95% completed as on the date of submission (i.e. gross value of work done upto the last date of submission is 95% or more of the original contract price) and continuing satisfactorily.

2. Interpretation

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about these Conditions of Contract.

2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

2.3 The documents forming the Contract are to be taken as mutually explanatory, and unless otherwise expressly provided elsewhere in the Contract, the priority of the documents, in the event of any ambiguity between them, shall be interpreted in the following order of priority:

(1) Agreement / Revised Agreement / Supplementary Agreement,
(2) Notice to Proceed with the Work,
(3) Letter of Acceptance,
(4) Contractor's Bid,
(5) Contract Data,
(6) Special Conditions of Contract Part II,
(7) General Conditions of Contract Part I,
(8) Specifications,
(9) Drawings,
(10) Bill of Quantities, and
(11) Any undertaking given subsequent to submission of bid.
(12) Any other document listed in the Contract Data.

3. Language and Law

3.1 The language of the Contract shall be English. The law governing the Contract are the Acts/Rules/Guidelines etc. notified by Government of India and Government of Haryana.

3.2 The works are to be carried out strictly as per the applicable laws, permits, rules and regulations. Any damages / penalties imposed by any statutory authority, like NGT etc, on account of noncompliance of any applicable laws, permits, rules and regulations shall have to be borne by the contractor.

4. Engineer's Decisions

4.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Contractor in the role representing the Employer. However, if the Engineer is required under the rules and regulations and orders of the Employer to obtain approval of some other authorities for specific actions, he will so obtain the approval.

4.2 Except as expressly stated in the Contract, the Engineer shall not have any authority to relieve the Contractor of any of his obligations under the Contract.

5. Delegation

5.1 The Engineer, with the approval of the Employer, may delegate any of his duties and responsibilities to other person, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.

6. Communications

6.1 All certificates, notices or instructions to be given to the Contractor by the Employer/Engineer shall be sent on the address or contact details given by the Contractor. The address and contact details for communication with the Employer/ Engineer shall be as per the details given in Contract Data to GCC. Communications between parties that are referred to in the conditions shall be in writing. The Notice sent by facsimile (fax) or other electronic means shall be effective on confirmation of the transmission. The Notice sent by Registered post or Speed post shall be effective on delivery or at the expiry of the normal delivery period as undertaken by the postal service.

7. Subcontracting

7.1(a) The Contractor may subcontract part of the work with the approval of the Employer in writing, up to percent defined in contract data of the contract price, but will not assign the Contract. It is expressly agreed that the Contractor shall, at all times, be responsible and liable for all his obligations under this Agreement notwithstanding anything contained in the agreements with his Sub-contractors or any other agreement that may be entered into by the Contractor and no default under any such agreement shall exempt the Contractor from his obligations or liability hereunder.

7.1 (b) However, any specialized work can be Subletted to a Sub Contractor possessing required valid Experience and certificate required if any after approval from the Employer.

7.2 The Contractor shall not be required to obtain any consent from the Employer for:

(a) the sub-contracting of any part of the Works for which the Sub-Contractor is named in the Contract.

(b) the provision for labour, or labour component.

(c) the purchase of Materials which are in accordance with the standards specified in the Contract.

7.3. The Engineer should satisfy himself before recommending to the Employer whether the Sub-Contractor so proposed for the Works possesses the experience, qualifications and equipment necessary for the job proposed to be entrusted to him in proportion to the quantum of Works to be sub-contracted.

7.4 While sub-contracting part of construction work as per provisions of Clause 7.1 and **7.3** above, the Contractor shall enter into formal sub-contract with sub-contractor making provisions for such requirements as may be specified by the Engineer including a condition that to the extent of inconsistency, provision of the Contract shall prevail over the provisions of the sub-contract. A copy of document of formal sub-contract shall be furnished to the Employer within a period of 30 days from the date of such sub-contract. In all such cases, on completion of the Contract, the Engineer, unless for reasons recorded in writing decides otherwise shall issue a Certificate of Experience to the contractor and in such certificate, the experience of the sub-contractors shall also be mentioned. The Copy of such certificate would also be endorsed to the sub-contractor.

8. Other Contractors

8.1 The Contractor shall cooperate and share the Site with Other Contractors, public

authorities, utilities, and the Employer between the dates given in the Schedule of Other Contractors, as referred to in the Contract Data. The Contractor shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Contractors, and shall notify the Contractor of any such modification.

8.2 The Contractor should take up the works in convenient reaches as decided by the Engineer to ensure there is least hindrance to the smooth flow of traffic including movement of vehicles and equipment of Other Contractors till the completion of the Works.

9. Personnel

9.1 The Contractor shall ensure that the personnel engaged by it in the performance of its obligations under this Contract are at all times appropriately qualified, skilled and experienced in their respective functions.

9.2 The Contractor shall employ for the construction work and operation of lab, the technical personnel named in the Contract Data or other technical persons approved by the Engineer. Before signing the agreement the contractor will submit the bio data of the technical personnel, as given in contract data, he proposes to employ on this work to the Engineer and will get the bio data approved from the Engineer. The Engineer will approve any proposed replacement of technical personnel only if their relevant qualifications and abilities are substantially equal to or better than those of the personnel stated in the Contract Data.

9.3 If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the Works in the Contract. The Contractor shall then appoint (or cause to be appointed) a replacement.

9.4 The Contractor shall not employ any retired Gazetted officer who has worked in the Engineering Department of the State Government and has either not completed two years after the date of retirement or has not obtained State Government’s permission for employment with the Contractor.

9.5 The Engineer may require the Contractor to remove (or cause to be removed) any person employed on the Site or Works, including the Contractor's Representative, who in the opinion of the Engineer:

(a) persists in any misconduct,

(b) is incompetent or negligent in the performance of his duties,

(c) fails to conform with any provisions of the Contract, or

(d) persists in any conduct which is prejudicial to safety, health, or the protection of the environment.

10. Employer's and Contractor's Risks

10.1 The Employer carries the risks which this Contract states are Employer's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Employer's Risks

11.1 The Employer is responsible for the excepted risks which are (a) in so far as theydirectly

affect the execution of the Works in the Employer's country, the risks of war, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot commotion or disorder (unless restricted to the Contractor's employees) and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive.

12. Contractor's Risks

12.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks, referred to in clause 11.1, are the responsibility of the Contractor.

13. Insurance

13.1 The Contractor at his cost shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the date of completion, in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractor's risks:

(a) loss of or damage to the Works and material, plant and machinery to be incorporated in the work.

(b) Personal injury or death.

(c) Loss of damage to property of third party other than the Contractor and the Employer (except works, plant, material and equipments) in connection with the Contract.

13.2 Insurance policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in Indian Rupees to rectify the loss or damage incurred.

13.3 (a) The Contractor at his cost shall also provide, in the joint names of the Employer and the Contractor, insurance cover from the date of completion to the end of **Defect Liability-cum-Maintenance Period**, in the amounts and deductibles stated in the Contract Data for personal injury or death which are due to the Contractor's risks:

(b) Insurance policies and certificates for insurance shall be delivered by the Contractor to the Engineer for approval before the completion date/start date. All such insurance shall provide for compensation to be payable in Indian Rupees.

13.4 Alterations to the terms of insurance shall not be made without the approval of the Employer.

13.5 Both parties shall comply with any conditions of the insurance policies.

14. Site Investigation Reports

14.1 The Contractor, in preparing the Bid, may, at his own risk, rely on any Site Investigation Reports if referred to in the Contract Data, supplemented by any other information available to him, before submitting the bid.

14.2 The Contractor shall be required to make adequate dewatering arrangements to make the

area dry for construction work. No separate payment shall be made to the Contractor for dewatering. The percentage premium (above or below) for HSR items and individual rates for NS items shall include the cost of dewatering unless specific provisions are made in the BOQ for payment of dewatering. This includes sub soil/surface dewatering also, if needed to execute the work properly.

15. Queries about the Contract Data

15.1 The Engineer will clarify queries on the Contract Data.

16. Contractor to Construct the Works

16.1 The Contractor shall construct, and install and maintain the Works in accordance with the Specifications and Drawings.

17. The Works to Be Completed by the Intended Completion Date

17.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Programme submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

18. Approval by the Engineer

18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them.

18.2 The Contractor shall be responsible for design and safety of Temporary Works.

18.3 The Engineer's approval shall not alter the Contractor's responsibility for design and safety of the Temporary Works.

18.4 The Contractor shall obtain approval of third parties to the design and safety of the Temporary Works, where required.

18.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Engineer before their use.

19. Safety

19.1 The Contractor shall be responsible for the safety of all activities on the Site.

19.2 The Contractor shall be responsible for safety of all persons, employed by him on Works, directly or through petty contractors or Sub-Contractors, and shall report accidents to any of them, however, and wherever occurring on Works, to the Engineer or the Engineer’s Representative, and shall make every arrangement to render all possible assistance and to provide prompt and proper medical attention. The compensation for affected Workers or their relatives shall be paid by the Contractor in such cases expeditiously in accordance with the Workmen’s Compensation Act and other labour Laws and regulations.

20. Discoveries

20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Employer. The Contractor shall notify the Engineer of such

discoveries and carry out the Engineer's instructions for dealing with them.

21. Possession of the Site

21.1 The Employer shall handover complete or part possession of the site to the Contractorseven days in advance of construction programme. At the start of the work, the Employer shall handover the possession of at least 80% of the site.

22. Access to the Site

22.1 The Contractor shall allow access to the Site and to any place where work inconnection with the Contract is being carried out, or is intended to be carried out to the Engineer and any person/persons/agency authorized by:

(a) The Engineer
(b) The Employer
(c) State Government of Haryana.

22 A. Royalties

Except where otherwise stated, the contractor shall pay all tonnage and other royalties, rent and other payments of compensation, if any, for getting stone, sand, gravel, clay or other materials required for the works.
The contractor has to give proof for making payment of royalty to any state Government for procuring stone soling, stone metal, bajri and earth etc. If these are arranged from quarries situated in Haryana but not auctioned by Industries Department, Government of Haryana, the Engineer shall be at liberty to make recovery of royalties after due notice to the contractor. The decision of Employer in this regard shall be final.

23. Instructions

23.1 The Contractor shall carry out all instructions of the Engineer, which comply with the applicable laws where the Site is located.

24. Dispute Redressal system

24.1 If any dispute or difference of any kind what-so-ever shall arise in connection with or arising out of this contract or the execution of work or Defect Liability-cum-Maintenance period of the works there under, whether before its commencement or during the progress of works or after the termination, abandonment or breach of the contract, it shall, in the first instance, be referred for settlement to the competent authority, described alongwith their powers in the contract data above the rank of the Engineer. The competent authority shall, within a period of forty five days after being requested in writing by the contractor to do so, convey his decision to the contractor. Such decision in respect of every matter so referred shall, subject to review as hereinafter provided, be final and binding upon the contractor. In case the work is already in progress, the contractor shall proceed with the execution of the works, including maintenance thereof pending receipt of the decision of the authority as aforesaid, with all due diligence.

24.2 Either of the parties is barred from making reference to the competent authority after 120 days from completion of work i.e. the claims will be time barred if the reference to the competent authority is not made within 120 days from the completion of work.

24.3 Either Party will have the right to apply for arbitration as provided here in after if he/it is not satisfied with decision of the competent authority.

25. Arbitration

(a) Where any of the party is not satisfied with the order passed by the competent authority can apply for appointment of Arbitrator. In case the party invoking arbitrator is contractor he shall deposit a sum as security deposit, proportionate to the claim amount, determined as per the values given in 'Contract Data'with 'Engineer'. On termination of the arbitration proceedings, this fee shall be adjusted against the cost, if any, awarded by the arbitrator against the claimant party and the balance remaining after such adjustment, and in the absence of such cost being awarded, the whole of the sum bill will be refunded within one month of the date of award.

(b) For agreement amounts upto Rs. 10.00 Crore (after adjusting the contract price any increase/decrease due to variations etc.) the matter will be referred to a single Arbitrator to be appointed by the Engineer-in-Chief from the panel of arbitrators approved by the Government.

(c) For agreement amounts more than Rs. 10.00 Crore (after adjusting the contract price any increase/decrease due to variations etc.) the matter will be referred to an Arbitral Tribunal consisting of 3 arbitrators, one each to be appointed by the Employer after taking approval from Engineer-in-Chief and the contractor and the third arbitrator to be chosen by the two arbitrators so appointed by both the parties to act as Presiding Arbitrator. In case of failure of the two arbitrators appointed by the parties to reach upon a consensuswithin a period of 30 days from the appointment of the arbitrator appointed subsequently, the Presiding Arbitrator shall be appointed by the Administrative Secretary, of the department to which the work belongs (Principal Secretary/ Additional Chief Secretary) as the case may.

(d) If one of the parties fails to appoint its arbitrator in pursuance of sub-clause (c) above within 30 days after receipt of the notice of the appointment of its arbitrator by the other party, then the Administrative Secretary, of the department to which the work belongs shall appoint the arbitrator. A certified copy of the order of the Administrative Secretary, of the department to which the work belongs, making such an appointment shall be furnished to each of the parties.

e. The decision of the majority of arbitrators shall prevail both parties.

f. Arbitration proceedings shall be held in India, and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.

g. The cost and expenses of Arbitration proceedings will be paid as provided hereinafter. However, the expenses incurred by each party in connection with the preparation, presentation, etc. of its proceedings as also the fees and expenses paid to the arbitrator appointed by such party or on its behalf shall be borne by each party itself. The fee and expenses of presiding Arbitrator shall be borne by both the parties equally.

h. Performance under the contract shall continue during the arbitration proceedings and payments due to the contractor by the employer shall not be withheld, unless they are the subject matter of the arbitration proceedings.

i) The fee and other charges payable to an arbitrator shall be as per of "THE ARBITRATION AND CONCILIATION (AMENDMENT) ACT., 2016.

B. Time Control

26. Programme

26.1 Within the time stated in the Contract Data, the Contractor shall submit to the Engineer for approval a Programme showing the general methods, arrangements, order, and timing for all the activities in the Works, for the construction of works.

26.2 The Contractor shall submit the list of equipment and machinery being brought to site, the list of key personnel being deployed, the list of machinery/ equipments being placed in field laboratory and the location of field laboratory along with the Programme. The Engineer shall cause these details to be verified at each appropriate stage of the programme.

26.3 An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining Works, including any changes to the sequence of the activities.

26.4 The Contractor shall submit to the Engineer for approval an updated Programme at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.

26.5 The Engineer's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Engineer again at any time. A revised Programme shall show the effect of Variations and Compensation Events.

27. Extension of the Intended Completion Date

27.1 The Engineer shall extend the Intend Completion Date, with approval from authority competent to grant time extension as mentioned in clause 16.16.6 of PWD code through Employer, if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.

> The Clause 16.16.6 is reproduced as under:-
> "16.16.6 The authority competent to technically sanction the estimate shall have the power to grant EOT. However, to check disproportionate EOTs and to ensure uniformity in approach, the Engineer-in-Chief shall issue instructions in this regard from time to time."

27.2 The Engineer with the approval of the authority competent to grant time extension as per PWD Code Clause 16.16.6 through employer shall decide whether and by how much to extend the Intended Completion date within 56 days of the Contractor asking the Engineer for a decision upon the effect of a compensation event or variation and submitting full supporting information. If the Contractor has failed to give early warning to delay or has failed to cooperate in dealing with a delay, the delay by the failure shall not be considered in accessing the new Intended Completion Date.

27.3 The Engineer shall within 14 days of receiving full justification from the contractor for extension of Intended Completion Date refer to the employer. The employer shall refer the case to the authority competent to grant time extension as per Clause 16.16.6 of PWD Code within further 14 days for his decision. It the authority competent to grant time extension fails to give his acceptance within next 28 days, the engineer shall not grant the time extension and the Contractor

may refer the matter to the Dispute Redressal System under clause 24.1. In case the employer happens to be the authority competent to grant time extension, he would convey his decision to the Engineer within 42 days.

28. Delays Ordered by the Engineer

28.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works. Delay/delays totaling more than 30 days will require prior written approval of the Employer.

29. Management Meetings

29.1 The Engineer may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the plans for the Works.

29.2 The Engineer shall record the business of management meetings and provide copies of the record to those attending the meeting. The responsibility of the parties for actions to be taken shall be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all those who attended the meeting.

C. Quality Control

30. Identifying Defects

30.1 The Engineer shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.

31. Tests

31.1 For carrying out mandatory tests as prescribed in the specifications, the Contractor shall establish field laboratory at the location decided by Engineer. The field laboratory will have minimum equipments as specified in the Contract Data. The Contractor shall be solely responsible for :

(a) Carrying out the mandatory tests prescribed in the relevantSpecifications, and

(b) For the correctness of the test results, whether preformed in his laboratory or elsewhere.

If the Engineer instructs the Contractor to carry out a test not specified in the Specifications to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples.

32. Correction of Defects noticed during the Defects Liability-cum-Maintenance Period. **Period as defined in Contract Data.**

32.1 The Engineer shall give notice to the Contractor of any Defects before the end of the Defect Liability-cum-Maintenance Period, which begins from the Completion Date. The Defect Liability-cum-Maintenance Periodshall be extended for as long as the Defects remain to be corrected.

32.2 Every time notice of Defect/Defects is given, the Contractor shall correct the notified Defect/Defects within the duration of time specified by the Engineer’s notice.

32.3 To fulfill the objectives laid down, the Contractor shall undertake detailed inspection of the work at least once in a month. The Engineer can increase this frequency in case of emergency. The Contractor shall forward to the Engineer, the record of inspection and rectification each month. For Road works the Contractor shall pay particular attention on those road sections which are likely to be damaged or inundated during rainy season.

32.4 The Engineer may issue notice to the Contractor to carry out maintenance of defects, if any, noticed in his inspection, or brought to his notice. The Contractor shall remove the defects within the period specified in the notice and submit to the Engineer a compliance report.

33. Uncorrected Defects

33.1 If the Contractor has not corrected a Defect within the time specified in the ‘Engineer’s notice, the ‘Engineer’ will assess the cost of having the Defect corrected, and the Contractor will pay double of this amount.

33.2 If the contractor fails to pay the amount as intimated by the 'Engineer' to the contractor as per clause 33.1 the same shall be recovered from the running bill or the security amount and it if is more than the security amount then the same shall be recovered from the performance security.

D. Cost Control

34. Bill of Quantities

34.1 The Bill of Quantities shall contain items for the construction, installation, testing, and commissioning works to be done by the Contractor.

35 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rates in the Bill of Quantities for each item.

36. Variations

36.1 The Engineer shall, having regard to the scope of the Works and the sanctioned estimated cost, have power to order, in writing, Variations within the scope of the Works, he considers necessary during the progress of the Works. Such Variations shall form part of the Contract and the Contractor shall carry them out and include them in updated Programmes produced by the Contractor. Oral orders of the Engineer for Variations, unless followed by written confirmation, shall not be taken into account.

37. Payments for Variations

37.1 If the final quantity of the work done exceeds from the quantity in the Bill of Quantities for the particular item by more than 25 per cent provided the change exceeds 1% of initial Contract Price, the 'Engineer' with the approval of the Competent Authority and shall adjust the rate to allow for the change, duly considering:

(a) justification for rate adjustment as furnished by the Contractor,

(b) economies resulting from increase in quantities by way of reduced plant, equipment and overhead costs.

(c) Entitlement of the Contractor to compensation events where such events are caused by any additional work.

37.2 If requested by the 'Engineer' / Employer, the Contractor shall provide the 'Engineer' / Employer with a detailed cost breakdown of any rate in the Bill of Quantities.

38. Cash Flow Forecasts

38.1 When the Programme is updated, the Contractor shall provide the Engineer with anupdated cash flow forecast.

39. Payment Certificates

39.1 The Contractor shall submit to the 'Engineer' monthly statements of the estimated value of the work completed less the cumulative amount certified previously by 1st week of the month. In case contractor does not submit his bill by 1st week of the month, 'Engineer' shall get the monthly statement of the estimated value of work completed less cumulative amount prepared by the end of third week of the month. This procedure will be followed even if no work is carried out at the site of work.

39.2. Deleted.

39.3 Deleted.

39.4 Deleted.

40. Payments

40.1 Payments shall be adjusted for deductions for advance payments, security deposit/retention, other recoveries in terms of the contract and taxes at source, as applicable under the law.

41. The Employer may appoint another authority, as specified in the Contract Data (or any other competent person appointed by the Employer and notified to the Contractor) to make payment certified by the Engineer.

42. Items of the Works for which no rate or price has been entered in the Bill of Quantities, will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.

43. The agency / bidder to whom the work is allotted shall be paid lowest of the following in the running / final bills**:-**

1. Amount calculated with the accepted rates of lowest agency.
2. Amount worked out with the accepted percentage above /below HSR+CP/analytical rates/NS item rates, worked out in financial statement. Financial statement will be made a part of agreement.

44. Compensation Events

44.1 The following are Compensation Events unless they are caused by the Contractor:

(a) The Employer does not give access to 80% of the area of project Site by the Site Possession Date stated in the Contract Data.

(b) The Employer modifies the schedule of other contractors in a way which affects the work of the contractor under the contract.

(c) The Engineer orders a delay or does not issue drawings, specifications or instructions required for execution of works on time.

(d) The Engineer instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no Defects.

(e) The Engineer does not approve of a subcontract to be let, within 30 days.

(f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of Letter of Acceptance from the information issued to Bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the site.

(g) The Engineer gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety or other reasons.

(h) Other contractors, public authorities, utilities or the Employer does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.

(i) The advance payment is delayed, beyond 28 days after receipt of application and bank guarantee.

(j) The effect on the Contractor of any of the Employer's Risks.

(k) The Engineer unreasonably delays issuing a Certificate of Completion.

(l) Other Compensation Events listed in the Contract Data or mentioned in the Contract**.**

44.2 In case of works of Irrigation Water Resources Department, no compensation would be payable due to non availability of closure of a canal. If the closure is not made available within the Intended Completion Date, the Contractor will have the option to complete the works, with the permission of Competent Authority, in the extended period."

44.3 If a Compensation Event would prevent the Works being completed before the Intended Completion Date, the Intended Completion Date shall be extended. The Engineer shall recommend to the Employer whether and by how much the Intended Completion Date shall be extended. Final approval shall rest with the Employer.

45. Tax

The Price Bid by the Contractor shall include all custom duties, import duties, levies, business taxes, income, toll and other taxes, duties etc. of local bodies and authorities as applicable that may be levied in accordance to the laws and regulations in being as on the closing date for submission of Bid in the countryof Employer on the Contractor's Equipment, Plant, materials and supplies (permanent, temporary and consumables) acquired for the purpose of Contract and on the services performed under the Contract excluding GST . Nothing in this Contract shall relieve the Contractor from the responsibility to pay the taxes and duties that may be levied in the Employer's country on profits made by him in respect of the Contract. The GST amount shall be reimbursed on production of proof of deposit of GST with Govt. for the previous payment.

45.1 Subsequent Legislation

If, after the closing date for submission of Bid there occur changes to any National or State Statue, Ordinance, Decree or other Law or any regulation or bye-law of any local or other duly constituted authority, or the introduction of any such State Statue, Ordinance, Decree, Law, regulation or bye-law which causes additional or reduced cost to the Contractor in the execution of the Contract, such additional or reduced cost shall, after due consultation with the Employer and the Contractor, be determined by the Construction Manager and shall be added to or deducted from the Contract Price and the Construction Manager shall notify the Contractor accordingly, after taking approval from the Competent Authority, with a copy to the Employer.

45.2 Other Changes in Cost

To the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the provisions of this or other 'Clauses in the Contract, the unit rates and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other rise or fall of costs.

46 Currencies

46.1 All payments will be made in Indian Rupees.

47. Price Adjustment

47.1 Contract price shall be adjusted for increase or decrease in rates with the principles and procedures and as per formula given in the contact data. The rate of cement/steel issued under the authority of Engineer-in-Chief concerned on the date of receipt of tender shall be considered as base rate.

47.2 To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provision of this or other clauses in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.

47.3 The contractor shall submit original bill/ voucher while claiming the payment for the work done. The bill/ voucher should pertain to the period of original contractual time limit and should correspond with the progress of work. No extra payment due to increase in rate of cement/steel/bitumen will be paid if the original bill/ vouchers are not submitted by the agency. No increase in prices of the cement/steel/bitumen shall be reimbursed to the contractor beyond the original time period allowed for construction as per contract agreement irrespective of extension of time limit granted to the agency for any reason, whatsoever.

48. Retention Money

The Employer shall retain is sum of 6% (six percent) from each payment due to the contractor subject to maximum of 5% of the final contract price until Completion of the whole of the Works.

On completion of the whole of the Works half the total amount retained is repaid to the Contractor and half when the Defect Liability-cum-Maintenance Period has passed and the Engineer has certified that all Defects notified by the Engineer to the Contractor before the end of this period have been corrected.

On completion of the whole works, the contractor may substitute retention money with an “on demand” Bank guarantee/FDR.

49. Liquidated Damages

49.1 In the event of failure on part of the Contractor to achieve timely completion of the project, including any extension of time granted under Clause 27, he shall, without prejudice to any other right or remedy available under the law to the Employer on account of such breach, pay as agreed liquidated damages to the Employer and not by way of penalty in a sum calculated at the rate per day or part thereof as stated in the Contract Data. For the period that the Completion Date is later than the Intended Completion Date, liquidated damages at the same rate shall be withheld if the Contractors fails to achieve the milestones prescribed in the Contract Data. However, in case the Contractor achieved the next milestone, the amount of the liquidated damages already withheld shall be restored to the Contractor by adjustment in the payment certificate. Both the Parties expressly agree that the total amount of liquidated damages shall not exceed 10% (ten percent) of the value of the balance work (amount of uncompleted work)on the date on which liquidated damages have become due. The liquidated damages payable by the Contractor are mutually agreed genuine pre-estimated loss and without any proof of actual damage likely to be suffered and incurred by the Employer; and the Employer is entitled to receive the same and are not by way of penalty.

The Employer may, without prejudice to any other method of recovery, deduct the amount of such damages from any sum due, or to become due to the Contractor or from Performance Security or any other dues from Government or semi Government bodies within the state.

The payment or deduction of such damages shall not relieve the Contractor from his obligations to complete the Works, or from any other of his duties, obligations or responsibilities under the Contract.

The Contractor shall use and continue to use his best endeavour to avoid or reduce further delay to the Works, or any relevant Stages.

49.2 The Employer, with the approval of the competent authority, based on the justified reasons, can extend the intended completion date.The liquidated damages can be deferred/reduced/waived (whole or part) by the SE concerned for contract(s) upto Rs.1.00 cr., CE from Rs.1.00 cr. to Rs.10.0. cr. and E-In-C for contract(s) above Rs.10.00 cr. This will be done on the written request of the contractor and written recommendations of EE/SE as the case may be. If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any such payment of liquidated damages by the Contractor

49.3 It is agreed by the Contractor that the decision of the Employer as to the liquidated damages payable by the Contractor under this Clause shall be final and binding.

50. Advance Payment

50.1. The Employer shall make advance payment to the Contractor of the amounts stated in the Contract Data by the date stated in the Contract Data, against provision by the Contractor of an Unconditional Bank Guarantee in a form as per Section-7and by a bank acceptable to the Employer in amounts and currencies equal to the advance payment. The guarantee shall remain effective until the advance payment has been repaid, but the amount of the guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest will be charged on the advance payment as specified in the contract data.

50.2. The Contractor is to use the advance payment only to pay for Equipment, Plant and Mobilization expenses required specifically for execution of the Works. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the 'Engineer'.

50.3. The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor. Following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment is assessing valuations of work done, Variations, price adjustments, Compensation Events, or Liquidated Damages.

50.4. Secured Advance

The 'Engineer' shall make advance payment in respect of materials intended for but not yet incorporated in the Works in accordance with conditions stipulated in the Contract Data.

51 Securities

51.1 The Performance Security equal to 5% (five percent) and additional security for unbalanced bids shall be provided to the Employer no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form and by a bank or surety acceptable to the Employer, and denominated in Indian Rupees. The Performance Security shall be valid until a date 45 days from the date of expiry of Defect Liability-cum-Maintenance Period and the additional security for unbalanced bids shall be valid until a date 28 days from the date of issue of the certificate of completion.

51.2 Whenever the work value is enhanced on account of variation in quantities / change of scope of work during the execution, beyond 10% above the original agreement amount, the contractor shall be required to submit the additional Performance Security in the form of Bank Guarantee @ 5% of the enhanced value of contract with the same validity as applicable to the original Performance Securityand a supplementary agreement for the revised work value shall be signed with the department which shall also define the mile stones as well as revised intended completion date. The contractor shall deliver additional Performance Security within 21 days of receipt of request in this regard from the employer.

Illustration**:**

Original Amount of agreement	Enhancement	Amount after enhancement	Additional Performance
Rs 1,00,000.00	Rs 10,000.00	1,10,000.00	Nil
Rs 1,00,000.00	Rs 15,000.00	1,15,000.00	5% of Rs 15,000.00

52. Cost of Repairs

52.1 Loss or damage to the Works or Materials to be incorporated in the Works between theStart Date and the end of the **Defect Liability-cum-Maintenance Period** shall be remedied by the Contractor at his cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

53. Completion of Construction and Maintenance

53.1 The Contractor shall request the Engineer to issue a Certificate of Completion of the works and the Engineer will do so upon deciding that the Work is completed, within 21 days of the receipt of request or within a reasonable period as per nature of the work.

54. Taking Over

54.1 The Employer shall take over the Works within seven days of the Engineer's issuing a certificate of Completion of Works. The Contractor shall continue to remain responsible for its **Defect Liability-cum-Maintenance period during the Defect Liability-cum-Maintenance Period.**

54.2 The Employer shall take over the maintained work within seven days of the Engineer issuing a certificate of clearance of **Defect Liability-cum-Maintenance Period.**

55. Substantial completion

55.1 The Engineer shall issue a substantial completion certificate if so requested by the contractor if the work is atleast 95% complete and the work has been executed to such an extent that it can be gainfully utilized by the Employer and remaining work is minor in nature not affecting gainful use of the work.

56. Defect Liability-cum-Maintenance period

56.1 The Defect Liability-cum-Maintenance period shall be as defined in the Contract Data and Special Condition of Contract.

57. Final Account

57.1. The Contractor shall supply to the 'Engineer' a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The 'Engineer' shall issue a Defect Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, 'Engineer' shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Engineer shall decide on the amount payable to the Contractor and issue a payment certificate, within 56 days of receiving the Contractor's revised account.

57.2 The contractor will submit the final bill of construction within 21 days of issue of Completion Certificate. The Engineer will process and pass the final bill within 21 days of the submission of final bill by the contractor.

58. Operating and Maintenance Manuals

58.1 The Contractor shall submit "as built" drawings for the work by the dates given in the contract data.If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the Contract Data.

58.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Contract Data, or they do not receive the Engineer's approval, the Engineer shall withhold the amount stated in the Contract Data from payments due to the Contractor.

59. Termination

59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

59.2 Fundamental breaches of the Contract shall include, but shall not be limited to, the following:

(a) the Contractor stops work for 28 days when no stoppage of work is shown on the current Programme and the stoppage has not been authorized by the Engineer;

(b) the 'Engineer' instructs the Contractor to delay the progress of the Works and the instruction is not withdrawn within 56 daysthe Contractor is declared as bankrupt or goes into liquidation other than for approved reconstruction or amalgamation;

(c) the Engineer gives Notice that failure to correct a particular Defect whether pertaining to construction work or pertaining to **Defect Liability-cum-Maintenance Period** is a fundamental breach of the Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;

(d) the Contractor does not maintain a Security, which is required;

(e) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in clause 44.1;

(f) the Contractor fails to provide insurance cover as required under clause 13;

(g) if the Contractor, in the judgment of the Employer, has engaged in the corrupt, fraudulent or coercive practice in competing for or in executing the Contract. For the purpose of this clause, "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in Contract execution. "Fraudulent Practice" means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Government interests. And, this includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid process at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition. "Coercive practice" means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/ her reputation or property to influence their participation in the tendering process.

(h) if the Contractor, in the judgment of the Employer, has engaged in the corrupt, fraudulent practice to extract undue payments from the department while executing the Contract. For the purpose of this clause, "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in Contract execution. "Fraudulent Practice" means a willful misrepresentation or omission of facts or submission of fake/forged documents / claims / bills in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage detriment of the Government interests.

(i) any other fundamental breaches as specified in the Contract Data.

59.3 When either party to the Contract gives notice of a breach of contract to the 'Engineer' for a cause other than those listed under Sub Clause 59.2 above, the 'Engineer' shall decide whether the breach is fundamental or not

59.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

59.5 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

60. Payment upon Termination

60.1 (i) If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer shall issue a certificate for the value of the work done, less liquidated damages, less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the Contract Data. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be recovered from the Retention Money and Performance Security. If any amount is still left un-recovered it will be a debt payable to the Employer from any other due payments to the contractor for any other works executed by him in the State of Haryana, any other state Govt. works, Central Govt. works including state public sector works executed by the Contractor.

(ii) If the Contract is terminated because of a fundamental breach of contract by theContractor due to non compliance of the requirements of clause 32 of GCC regardingDefect Liability-cum-Maintenance Period, the Engineer will assess the cost of having the defect corrected. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be recovered from the Security Deposit and Performance Security. If any amount is still left un-recovered, it will be recovered from any dues payable to the Contractor from any other State Government works including State Public Sector works executed by the Contractor. If any amount still remains unrecovered, it shall be recovered as arrears of land revenue.

60.2 If the Contract is terminated at the Employer's convenience or because of a fundamental breach of Contract by the Employer, the 'Engineer' shall issue a certificate for the value of the work done, the cost of balance material brought by the contractor and available at site, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

61. Property

61.1 All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor's default to make recoveries.

62. Release from Performance

62.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of the Employer or the Contractor, the Engineer shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

62.2 If a Contractor dies during the currency of the Contract or becomes permanently incapacitated, and his/her legal heirs are not willing to complete the Contract, the Contract shall be closed without levying any damages/compensation as provided for in clauses 44 and 60 of GCC.

However, if the nominee expresses his/her intention to complete the balance work and the competent authority is satisfied about the competence of the nominee, then the competent authority shall enter into a fresh agreement for the remaining work strictly on the same terms and conditions, under which the Contract was initially awarded.

Part-II Special Conditions of Contract

1. LABOUR:

1.1 Every Contractor shall:-

(i) In relation to an establishment to which this Act applies on its commencement, within a period of 60 days from such commencement, and

(ii) In relation to any other establishment to which this Act may be applicable at any time after such commencement, within a period of 60 days from the date on which this Act becomes applicable to such establishment, make an application to the registering officer for the registration of establishment.

Further, the first running bill of the contractor shall be cleared only after the receipt of registration certificate under the Building & Other Construction Workers Welfare (RE&CS) Act, 1996 and registration of all the eligible construction workers as a beneficiary of the Haryana Building & Other Construction Worker Welfare Board.

1.2 The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

1.3 The Contractor shall, if required by the 'Engineer's , deliver to the 'Engineer' a return in detail, in such form and at such intervals as the 'Engineer' may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such other information as the 'Engineer' may require.

2. COMPLIANCE WITH LABOUR REGULATIONS :

During continuance of the contract, the Contractor shall abide at all times by all existing labour enactments and rules made thereunder, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules make thereunder, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Contractor, the 'Engineer's /Employer shall have the right to deduct any money due to the Contractor including his amount of performance security. The Employer/'Engineer' shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

The employees of the Contractor in no case shall be treated as the employees of the Employer at any point of time.

2.1. Registration of Establishment:-

(1) Every employer shall –

(a) in relation to an establishment to which this Act apples on its commencement, within a period of sixty days from such commencement; and

(b) in relation to any other establishment to which this Act may be applicable at any time after such commencement, within a period of sixty days from the date on which this Act becomes applicable to such establishment, make an application to the registering officer for the registration of such establishment;

Provided that the registering officer may entertain any such application after the expiry of the periods aforesaid, if he is satisfied that the applicant was prevented by sufficient cause from making the application within such period.

(2) Every application under sub-section (1) shall be in such form and shall contain such particulars and shall be accompanied by such fees as may be prescribed.

(3) After the receipt of an application under sub-section (1), the registering officer shall register the establishment and issue a certificate of registration to the employer thereof in such form and within such time and subject to such conditions as may be prescribed.

(4) Where, after the registration of an establishment under this section, any change-occurs in the ownership or management or other prescribed particulars intimated by the employer to the registering officer within thirty days of such change in such form as may be prescribed".

In case of work executed through the contractor, it is the responsibility of the contractor to get the works registered as employers as per section 2(i) of the BOCW Act. In case of works executed directly through the department, the department is liable to get the works registered.

a) Every Contractor shall:-

(i) In relation to an establishment to which this Act applies on its commencement, within a period of 60 days from such commencements; and

(ii) In relation to any other establishment to which this Act may be applicable at any time after such commencement, within a period of 60 days from the date on which this Act becomes applicable to such establishment, make an application to the registering officer for the registration of establishment.

It is mandatory to strictly compliance of BOCW Act and registration of all eligible construction labour. Otherwise it will attract criminal proceedings against the contractual agency and employer for non-compliance of Building & Other Construction Workers Welfare (RE&CS) Act, 1996 and registration of all the eligible construction workers as a beneficiary of the Haryana Building & Other Construction Worker Board.

2.2 SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO

ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK.

a) Workman Compensation Act 1923:- The Act provides for compensation in case of injury by accident arising out of and during the course of employment.

b) Payment of Gratuity Act 1972:- Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more on death, the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.

c) Employee P.F. and Miscellaneous Provision Act 1952:- The Act Provides for monthly contributions by the employer plus workers @10% each. The benefits payable under the Act are:

(i) Pension or family pension on retirement or death, as the case may be.
(ii) Deposit insurance linked with death of the worker during Employment.
(iii) Payment of P.F. accumulation or retirement/death etc.

d) Maternity Benefit Act 1951:- The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.

(e) Contract Labour (Regulation & Abolition) Act 1970:- The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided by the Principal Employer by Law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take licence from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer, if they employ 20 or more contract labour.

(f) Minimum Wages Act 1948:- The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act, if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.

(g) Payment of Wages Act 1936:_ It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.

(h) Equal Remuneration Act 1979:- The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.

(i) Deleted

(j) Industrial Disputes Act 1947:- The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

(k) Industrial Employment (Standing Orders) Act 1946:- It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.

(l) Trade Unions Act 1926:- The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.

(m) Child Labour (Prohibition & Regulation) Act 1986:- The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in Building and Construction Industry.

(n) Inter-State-Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979:_ The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home upto the establishment and back, etc.

(o) The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996:- All the establishment who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens, First-Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

(p) Factories Act 1948:- The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

2.3 FAIR WAGE CLAUSES

(a) The Contractor shall pay not less than the fair wage to labourers engaged by him on the work.

EXPLANATION:- Fair Wage' means wage whether for time of piece work notified from time to time for the area and where such wages have not been so notified the wages specified by the Public Works Department for the district in which the work is done.

(b) The Contractor shall not withstanding the provisions of any agreement to the contrary, caused to be paid fair wages to labour, indirectly engaged on the work including any labour engaged in connection with the said work, as if the labourers had been directly employed by him.

(c) In respect of labour directly or indirectly employed on the works for the performances of the contractor's part on this agreement the contractor shall comply with or cause to be complied with the Public Works Department Contractor's Labour's Regulations made by the Government from time to

time in regard to payment of wages wage period deductions from wages recovery of wages not paid and deductions unauthorized made maintenance of wage register wage book, wage slip, publication of wages and other terms of employment inspection and submission of periodical returns and all other matters of a lime nature.

(d) The Executive Engineer or Sub Divisional Engineer concerned shall have the rights 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 benefit of the workers, non payment of wages or deductions made from his or their wages, which are not justified by terms of the contract for non observance of the regulations referred to in clause I above.

(e) Vis-à-vis the Haryana Government, the Contractor shall be primarily liable for all payments to be made under and the observance of the regulations aforesaid without prejudice to his right to claim indemnity from his sub Contractors.

(f) The regulations shall be deemed to be a part of this contract and any branch there shall be deemed to be branch of this contract.

2.4 RULES FOR PROTECTION OF HEALTH & SANITARY ARRANGEMENTS

2.4.1 Rules for the Protection of Health and Sanitary Arrangements for Workers Employed by the Public Works Department or its Contractors

The Contractor shall at his own expense provide or arrange for the provision of foot wear for any labour doing cement mixing work (the Contractor has undertaken to execute under this contract) to the satisfaction of the Engineer – in – charge and on his failure to do so Government shall be entitled to provide the same and recover the cost thereof from Contractor.

The Contractor shall submit by the 4th and 19th of every month to the Executive Engineer a true statement showing in respect of the second half of the proceeding month and the first half of the current month respectively (i) the number of labourers employed by him on the work (ii) their working hours (iii) the wages paid to them (iv) the accident that occurred during the said forthright showing the circumstances under which they happened and the extent of damage and injury caused by them and (v) the number of female workers who have been allowed Maternity benefit according to clause 19-F and the amount paid to them failing which the Contractor shall be liable to pay to Government a sum not exceeding Rs. 50/- for each default or materially incorrect statement. The decision of the Executive Engineer shall be final in deducting from any bill due to the contractor the amount levied as fine.

Maternity benefit for female workers employed by the Contractor, leave and pay during leave shall be regulated as follow: -

1. LEAVE (i) in case of delivery/maternity leave not exceeding 8 weeks (4 weeks up to and including the day of delivery and 4 weeks following that day) (ii) in case of miscarriage : up to 3 weeks from the date of miscarriage.

2. PAY (i) In case of delivery, leave pay during maternity leave will be at the rate of the woman’s average daily earning calculated on the total wages earned on the day when full time work was done during a period of 3 months immediately preceding the date of which she gives notice that she excepts to be confined or at the rate of Rs. 12/- per day which ever is

greater.

(ii) In case of miscarriage, Leave pay at the rate of average daily earning calculated on the total wages earned on the days when full time work was done during a period of 3 months immediately proceeding the date of such miscarriage.

(iii) Conditions for the grant of Maternity leave:- No Maternity leave benefit shall be admissible to a woman unless she produces a certificate of confinement and excepted delivery within 4 weeks proceeding the date on she proceeds on leave.

3. FIRST AID (a) At every work place, there shall be maintained in readily accessible place first aid appliances including an adequate supply of sterilized dressing and cotton wools. The appliances shall be kept in good order and in large workplaces it shall be placed under the charge of a responsible person who shall be readily available during the working hours.

(b) All large work places where hospital facilities are not available within easy distance of the work, first aid post shall be established and be run by a trained compo under.

(c) Where large work places are remote from regular hospital an indoor ward shall be provided with one bed for every 250 employees.

(d) Where large work places are situated in cities, towns in their suburbs and no beds are considered necessary owing to the proximity of city or town hospitals a suitable transport shall be provided to facilitate removal of urgent cases to these hospitals.

At other work place, the conveyance facilities such as car shall be kept readily available to take injured or persons suddenly taken seriously ill, to the nearest hospital.

2.4.2 Scales of accommodation in Latrines Urinals

These shall be provided within the precinct of every work places, Latrines and Urinals in an accessible place and the accommodation separately for each of them shall not be less than the following scales : -

	No. of Sheds
(a) Where the number of persons does not exceed 50	2
(b) Where the number of persons exceeding 50 but does not exceeds 100	3
(c) For every additional 100	3 per 100

In particulars cases the Executive Engineer shall have the powers to very the scale where necessary.

2.4.3 Latrines and Urinals for women

If women are employed, separate latrines and urinals screamed from these for men and marked in vernacular in conspicuous letters ‘FOR WOMEN ONLY’ shall be provided on the scale laid in rules, Similarly those for men shall be marked ‘FOR MEN ONLY’ A poster showing the figures of a man and women shall also be exhibited at the entrance of latrine for each sex. There shall be adequate supply of water close to latrines.

2.4.4 Latrines and Urinal

Except in work places provided with flush latrines concerned with a water borne sewerages

systems all latrines shall be provided with receptacies order earth system which shall be in working order and kept in strictly sanitary conditions. The receptacles shall be tarried inside and outside at least once a year.

The inside walls shall be constructed of masonry or some suitable heat resisting non absorbent material and shall be cement washed inside and outside at least once a year. The dates of cement shall be noted in register maintained for this purpose and kept available for inspection.

2.4.5 Disposal of Excreta

Unless otherwise aggranged for by the local sanitary authority arrangements for proper disposal and a sanitary of excreta by incineration at the work place shall be made by means of a suitable incineration approved by the Asstt. Director of Public Health or Municipal Medical Officer of Health, as the case may be, in whose jurisdiction the work place is situated. Alternately excreta may be disposed of by putting a layer of night soil at the bottom of pucca tank prepared for the purpose and covering it with 9 inches layers of earth for a fortnight when it will turn into a manure.

2.4.6 CRECHE:

At every work place these shall be provided free of cost two suitable sheds one main and the other for the use of labour. The height of the shelter shall not be less than eleven feet from the floor level to the lowest part of the roof.

2.4.7 PROVISION OR SHELTER DURING REST:

At every work place at which 50 or more women workers are ordinary employed, these two huts for use of children under the age of six years belonging to such women. One hut shall be used for infants “Games and to play” and the other as their bed room. The hut shall not be constructed on a lower standard then the following :-

(i) Thatched roofs.

(ii) Mud floors and walls.

(iii) Plants spread over mud floor and covered with mating.

The huts shall be provided with suitable and sufficient opening for light and ventilations. There shall be adequate provision of sweepers to keep the place clean. There shall be two day attendant. Sanitary, utensils shall be provided to the satisfaction of Health Office of the area concerned. The use of the hut shall be restricted to children, their attendant and mothers of the children.

2.4.8 CANTEEN:

A cooked food canteen on a moderate scale shall be provided for the benefit of workers where over it is considered expedient.

2.4.9 GENERAL RULES AS TO SCAFFOLDS :

(i) Suitable scaffolds shall be provided for all workmen for all works that cannot be safely done from a ladder or by other means.

(ii) A scaffolds shall not be constructed taken down or substantially altered except.

(iii) Under the supervision of a competent and responsible person, and

(a) As far as possible by competent workers possessing adequate experience in this kind of work.
(b) All scaffolds and appliances connected there with and ladder shall :-

1. be of sound material.

2. be of adequate strength having regard to the load and strains to which they will be subjected and

3. be maintained in proper condition.

4. scaffolds shall not be overloaded and so far as practicable, the load shall be evenly distributed.

5. scaffolds shall be so constructed that no part there of can be displaced in on normal use.

6. Before installing, lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.

7. scaffolds shall be periodically inspected by the competent person.

8. before allowing a scaffold to be used by the workman, every care shall be taken to see whether the scaffolds have been erected by his workmen and steps taken to ensure that it complies fully with the requirement of the articles.

9. Working platforms gangways and stairways shall.
(a) be so constructed that no part of the road is covered.

(b) Be so constructed and maintained, having regard to the prevailing condition as to reduce as for as practicable.

(c) Be kept free from any unnecessary obstruction.

(d) In case of working platforms gangways place and stairways at a height exceeding that to be prescribed by a national laws and regulations :-

(i) Every working platform and every gangway shall be closely boarded unless other adequate measures are taken to ensure safety.

(ii) Every working platform and every gangway shall have adequate width, and;
Every opening in the floor of a building or in working platforms shall except for the time and to the extent required to allow the access of persons or the transport or shifting of material be provided with suitable means to prevent the fall of persons or materials.

When persons are employed on a roof where there is a danger of failing from a height exceeding that to be prescribed by national laws of regulations suitable precautions shall be a taken to prevent the fall of persons or materials.

Suitable precautions shall be taken to prevent persons being struck by articles which might fall from scaffolds or other working places.

1. Soft means of access shall be provided to all working platforms an other working

places.

2. Every place where work is carried on the means approach there to shall be adequately lighted.

3. Every ladder shall be securely fixed of such length as to provide secure hand held and foot at every position at which it is used.

4. Adequate precautions shall be taken to prevent danger from electrical equipment.

5. No material on the site shall be so stacked or placed as to cause danger to any person.

2.4.10 GENERAL RULES AS TO SAFETY EQUIPMENT AND FIRST AID

(1) All necessary personal safety equipment shall be kept and available for use of the persons employed on the site be maintained in condition suitable for immediate use.

(2) The worker shall be required to use the equipment thus provided and the employed shall take adequate steps to ensure proper use of the equipment by these concerned.

(3) Adequate provision shall be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.

3.0 Environment

a) The contractor shall take all reasonable steps to protect the environment at and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.

b) During continuance of the contract, the contractor shall abide at all times by all existing enactments on environmental protection and rules made there under, regulations, notifications and by laws of the State or Central Government or local authorities and any other law, bye law, regulations that may be passed for notification that may be issued in this respect in future by the State or Central Government or the local authority.

3.1 Salient features of some of the major laws that are applicable are given below:

(i) The water (Prevention and Control of Pollution) Act 1974: This provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alternation of physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

(ii) The Air (Prevention and Control of Pollution) Act 1981: This provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid, or gaseous substance (including noise) present in the atmosphere in such concentration

as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

(iii) The Environment (Protection) Act 1986: This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the interrelationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

(iv) The Public Liability Insurance Act 1991: This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

4. The Apprentices Act, 1961

4.1 The Contractor shall duly comply with the provisions of the Apprentices Act, 1961 (IIIof 1961), the rules made there under and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so, he shall be subject to all liabilities and penalties provided by the said Act and said Rules.

5.0 Amendment

The Haryana Government may, from time to time and to amend any of the Labour or Pollution or other regulations, all amendments in any or all Acts shall also be followed.

6.0 Drawings and Photographs of the Works

6.1 The Contractor shall do photography/video photography of the site firstly before the start of the work, secondly mid-way in the execution of different stages of work and lastly after the completion of the work. No separate payment will be made to the Contractor for this.

6.2 The Contractor shall not disclose details of Drawings furnished to him and works on which he is engaged without the prior approval of the Employer in writing. No photograph of the works or any part thereof or plant employed thereon, except those permitted under clause 58.1, shall be taken or permitted by the Contractor to be taken by any of his employees without the prior approval of the Employer in writing. No photographs/ Video photography shall be published or otherwise circulated without the approval of the Employer in writing.

7. The various works shall be done in line to line level and grade. The periodical checking of these by the Engineer or Engineer's representative shall not absolve the Contractor of his responsibility regarding their accuracy. In case of any deviation or discrepancy in line, level or grade at the meeting faces, the Contractor shall make good the discrepancy at his own cost and without any compensation for the additional work, if any involved. The Engineer shall further have right, if need be, to rectify the discrepancies and recover the cost from the Contractor.

8. All materials, before being incorporated in the work, shall be inspected by the Engineer or his representative and, if necessary, tested before use. Any work, on which such materials are used without approval and written permission of the Engineer, is liable to be considered as defective and not acceptable.

8.1 The day to day and periodical tests, to be carried out on materials, mixes and placed concrete, etc., shall be specified by the Engineer from time to time and the Contractor shall allow all the facilities and cooperation towards collections of samples etc. All labour for collecting samples for tests will be supplied by the Contractor free of cost to the Engineer. Where testing facility is not available in the field lab, the Engineer-in-Charge will get the test conducted from some approved laboratory and testing and transportation charges shall be borne by the Contractor in all such cases.

8.2 An authorized representative of the Contractor shall remain present at the time when the samples are taken and shall authenticate the facts, if so required. If the Contractor's representative fails to be present as aforesaid, the samples or cores, etc. as are taken by the Engineer or his representatives shall be considered to be authentic. The Contractor will however be informed of the details of such samples having been taken.

8.3 The materials, mixes and the cores shall be tested day to day and periodically at the laboratory and the results given thereby shall be considered correct and authentic by the Contractor. The Contractor shall be given access to all operations and tests that may be carried out as aforesaid so that he may satisfy himself regarding the procedure and method adopted. It shall then be the Contractor's responsibility to produce the works, materials and finished item to the standards based on the laboratory design and tests.

8.4 The methods of sampling, testing, procedures and standards shall be laid down by the Engineer from time to time.

8.5 The quality and quantity of material shall be the responsibility of the Contractor, irrespective of the test results being good.

9. Arrangement of water and electric power, etc. required by the Contractor for the work shall be made by him at his own cost. Engineer will, however, recommend to the concerned State Electricity Utilities for providing the connection and power to the Contractor, however, the Engineer will bear no responsibility in this respect.

9.1 Contractor shall not be allowed to start the work till Engineer is satisfied with the proper arrangement of good quality water for execution of work including curing for 28 days. For this, the Contractor shall have to construct water storage tanks of sufficient capacity. No extra payment shall be made on this account. Any delay in execution of work due to non-availability of sufficient water will be responsibility of the Contractor. In case water is used from Government source, the contractor has to pay 0.5% of the cost of the part of such work for which the water is used.

9.2 The Contractor shall not set fire to any standing jungle, trees, 'bush' wood or grass without a written permission from the Engineer.

9.3 When such permission is given and also in all cases when destroying of dug trees, bush wood, grass, etc. by fire the Contractor shall take necessary measures to prevent such fire spreading to or otherwise damaging surrounding property.

9.4 Any damage caused by the spreading of such fire, whether in or beyond limits of the Engineer's property shall be made good by the Contractor within a period specified by the Engineer or in default the amount of the damage shall be recovered by the Engineer from the Contractor's bill as damages or deducted by any other duly authorized officer from any sums that may be due or become due from the Employer to the Contractor under the Contract or otherwise.

9.5 The Contractor shall bear the expenses of defending any action of law proceedings that may be brought by any person by injury sustained owing to neglect of precautions to prevent the spread of fire and shall pay any damage, and cost that may be awarded in consequence.

10. The Engineer may order the Contractor to suspend any work that may be subject to damage by climatic conditions and no claim of the Contractor will be entertained by the Engineer on this account.

11. A site order book shall be kept on the site of the work. As far as possible, all orders, regarding the work are to be entered in this Book. All entries therein shall be signed by the Engineer or his authorized representative and the Contractor or his authorized representative. In important cases, the Engineer will countersign the entries which have been made. The site order book shall not be removed from the work site except with the written permission of the Engineer and the Contractor or his representative shall be bound to take note of all instructions and directions meant for the Contractor as entered in the site order book without having to be called on separately to note them. The authorized representative of the Engineer shall submit periodically copies of the remarks in the site order book to the Engineer for record and to the Contractor for submitting compliance report.

12. The Contractor shall confirm to the regulations, safety precautions,bye-laws or any other statutory rules made by any local authority or by the Government and shall protect and indemnify the Engineer against any claims or liability arising from or based on the violations of any such laws, ordinance, regulations, orders and decrees, etc.

13. The Contractor shall make his own arrangement for supply of all materials including cement and steel. The Contractor shall be responsible for all transportation and storage of the materials at site and shall bear all the related costs. The Engineer shall be entitled, at any time, to inspect or examine all such materials. The Contractor shall provide reasonable assistance for inspection or examination as may be required.

13.1 The Contractor shall keep an accurate record for use of materials like cement and steel used in the works in a manner prescribed by the Engineer.

13.2 Large stock of cement shall not be kept at the work site but only sufficient quantities shall be kept to ensure continuity of the work. The Contractor shall provide and maintain efficient water proof storage sheds for cement on the site of work. It shall be stacked on the platform 30 cm above the floor level and shall be covered with tarpaulin or any other impervious covering material in order to protect the cement bags from moisture. The cement shall be neatly stacked in an orderly manner so as to allow an easy access and count. The arrangement of storage and utilization shall be such as to ensure the utilization of cement in order of its arrival at the stores and the Contractor shall maintain satisfactory records which would at any time show the date of receipt and proposed utilization of cement lying in the stores at site.

14. The Contractor shall also construct and equip at his cost a working office with electricity and water arrangement for his site Engineer.

15. The contractor shall also provide instruments for setting up field laboratory at his own cost to site Engineer. No separate payment shall be made for this.

16. The Engineer shall have the right to deduct from the money due to 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 condition of Contract for the benefit of the workers vis-à-vis the Haryana Government, the Contractor shall be primarily liable for all payments to be made under

and for the observance of the rules, regulations and labour law without prejudice to his right to claim indemnity from his sub-Contractor.

17. Third Party Inspection - The Engineer-in-Charge may opt for 3rd party inspection other than department in addition to inspection by department staff, the 3rd party would inspect to ensure execution of work as per specification/ agreement and also quality control i.e. draw of samples, testing and other items etc. The report of the same would be submitted to Engineer-in-Charge by the 3rd party. The agency/ contractor shall be bound by the report of 3rd party inspection and shall take remedial measures for execution of work as per specifications in agreement at their own cost. The cost of 3rd party inspection will be borne by the employer.

18. The Contractor shall confirm to the regulations, safety precautions,bye-laws or any other statutory rules made by any local authority or by the Government and shall protect and indemnify the Engineer against any claims or liability arising from or based on the violations of any such laws, ordinance, regulations, orders and decrees, etc.

19. The Contractor shall make his own arrangement for supply of all materials including cement and steel. The Contractor shall be responsible for all transportation and storage of the materials at site and shall bear all the related costs. The Engineer shall be entitled, at any time, to inspect or examine all such materials. The Contractor shall provide reasonable assistance for inspection or examination as may be required.

19.1 The Contractor shall keep an accurate record for use of materials like cement and steel used in the works in a manner prescribed by the Engineer.

19.2 Large stock of cement shall not be kept at the work site but only sufficient quantities shall be kept to ensure continuity of the work. The Contractor shall provide and maintain efficient water proof storage sheds for cement on the site of work. It shall be stacked on the platform 30 cm above the floor level and shall be covered with tarpaulin or any other impervious covering material in order to protect the cement bags from moisture. The cement shall be neatly stacked in an orderly manner so as to allow an easy access and count. The arrangement of storage and utilization shall be such as to ensure the utilization of cement in order of its arrival at the stores and the Contractor shall maintain satisfactory records which would at any time show the date of receipt and proposed utilization of cement lying in the stores at site.

20. The Engineer may order the Contractor to suspend any work that may be subject to damage by climatic conditions and no claim of the Contractor will be entertained by the Engineer on this account.

21. Cement contents - Actual cement required for the aggregates in concrete to be used shall be determined by laboratory test while designing the concrete mixes. If the cement contents of the design mix of that grade come less than the provision of cement contents provided in the Haryana Scheduled of Rates, (with latest amendments) due to durability conditions, the cement contents as provided in the Haryana Schedule of Rates shall be used and no extra payment on this account shall be made to the contractor. No extra amount over and above the minimum cement content as provided in the Haryana Schedule of Rates shall be paid.

Special conditions of contract as per the requirement of the work.

Contract Data to General Conditions of Contract

Sr. No.	Description		Clause No.
1.	The Employer is Designation: Address:	Sh. Ajit Singh Superintending Engineer Superintending Engineer, Hisar Circle, PWD BandR Br. Hisar	[Cl.1.1]
2.	Name of authorized Representative	Sh. K.C Kamboj	[Cl.1.1]
3.	The Engineer is Designation: Address:	Executive Engineer Executive Engineer Provincial Division, PWD BandR Br Fatehabad	[Cl.1.1]
4.	The Intended Completion Date for the whole of the Works is **18 Months** after start of work.	**18 Months**	[Cl.1.1, 17&27]
5.	The Site is located	Fatehabad	[Cl.1.1]
6.	The Start Date shall be **10 days** after the date of issue of the Notice to Proceed with the work	As per CBD	[Cl.1.1]
7.	Section completion	As per CBD	[Cl 2.2]
8.	The following documents also form part of the Contract :	As per CBD	[Cl.2.3 (11,12)]
9.	Joint Ventures	Not allowed	[Cl.3.1,4.4]
10.	Sub Contracting	As per CBD	[Cl 7.1]
11.	The Schedule (if any) of Other Contractors is attached	As per CBD	[Cl. 8.1]
12.	The Technical Personnel for work and operation of lab are:		[Cl. 9.2]

Sr. No.	Personnel	Qualification	No. of personals
1	Project Manager	BE.Civil + 10 Years Exp	1
2	Site Engineer	BE.Civil+3 Years Exp. OR diploma with 7 years Exp.	2
3	Plant Manager	BE. Mech. +3 Years Exp. Or Dip.Mech. + 7 Years Exp.	1
4	Quantity Surveyor	BE. Civil +3 Years Exp. Or Dip. Civil+7 Years Exp.	1
5	Soil and Material Engineer	B.E. Civil + 3 Years Exp. Or Dip. Civil + 7 Years Exp.	1
Total:			**6**

Note:-

In case, the above qualified personnel are not deployed the following deduction shall be made per month from the payment due to the contractor.

Project Manager	=	Rs. 150000/- per month
Site Engineer	=	Rs. 75000/- per month
Plant Manager	=	Rs. 50000/- per month
Quantity Surveyor	=	Rs. 40000/- per month
Soil and Material Engineer	=	Rs. 40000/- per month

The Employer reserves the right to employ any or all the above personal as per requirement given above irrespective of above deductions made from the payments due to the contractor.

11.	Amount and deductible for insurance are:	
(i)	Insurance cover for work is equal to the contract price and the amount of deductable is 1% of the contract price	[Cl. 13.1 (a)]
(ii)	Minimum insurance cover for injury and death is Rs.10.00 lacs per occurrence with the number of occurrences limited to four. After each occurrence, contractor will pay additional premium necessary to make insurance valid for four occurrences always. The amount of deductable is Rs. 2.00 Lacs of the contract price.	[Cl. 13.1 (b)]
(iii)	Minimum insurance cover for damage to the property of the third party is Rs. 20.00 Lacs. The amount of deductable is Rs. 2.00 Lacs of the contract price.	[Cl. 13.1 (c)]
(iv)	Insurance cover for work is equal to the contract price and the amount of deductable is 1% of the contract price	[Cl. 13.3 (a)]
12.	Site investigation report	[Cl.14.1]
13.	Security Deposit for invoking Arbitration **Sr No. Amount of Claim — Rate of Security Deposit** 1. For claims below 10,000 — 2% of claimed amount 2. For claims of Rs. 10,000 and above but below Rs 1,00,000/- — 5% of claimed amount 3. For claims of Rs 1,00,000 and above — 7.5% of claimed amount	[Cl. 25]
14.	a. The period for submission of the programme for approval of Engineer shall be 15 days from the issue of Letter of Acceptance	[Cl.26.1]
	b. The updated programme shall be submitted at interval of 60 days	[Cl. 26.4]
	c. The amount to be withheld for late submission of an updated programme shall be 2% of the initial / revised contract price or the enhanced contract price as applicable.	[Cl. 26.4]

15. The following events shall also be Compensation Events: [Cl. 44.2 l]

Substantially adverse ground conditions encountered during the course of execution of work not provided for in the bidding document.

(i) Removal of underground utilities detected subsequently
(ii) Significant change in classification of soil requiring additional mobilization by the contractor, e.g. ordinary soil to rock excavation,
(iii) Removal of unsuitable material like marsh, debris dumps, etc not caused by the contractor
(iv) Artesian conditions
(v) Seepage, erosion, landslide
(vi) River training requiring protection of permanent work
(vii) Presence of historical, archeological or religious structures, monuments interfering with the works.
(viii) Restriction of access to ground imposed by civil, judicial, or military authority.

15 a. The formula for price adjustment of prices are: [Cl. 47.1]

15 (a) (i) Adjustment of price for bitumen:

Price adjustment for increase or decrease in the cost of bitumen shall be paid as follows:

That the rate of bitumen/ emulsion at the refinery on the date of close for financial bidding shall be considered as base rate if during execution of the works, the rate of bitumen/ emulsion increase or decrease at refinery, the difference in cost shall be paid/ recouped from the contractor in the bill, subject to the following conditions:-

(A) The contractor shall submit original bill/ voucher of the refinery while claiming the payment for the work done. The bill/ voucher should pertain to the period of original contractual time limit and should correspond with the progress of work. No extra payment due to increase in rate of bitumen / emulsion will be paid if the original bill/ voucher are not submitted by the agency.

(B) No increase in prices of the bitumen / emulsion shall be reimbursed to the contractor beyond the original time period allowed for construction as per contract agreement irrespective of extension of time limit granted to the agency for any reason, whatsoever. However, decrease in price of bitumen/emulsion shall be recouped from the contractor even beyond the original time period allowed for construction.

(C) After approval of tender, the contractor shall submit the work programme for execution of work and get it approved from the Engineer-in-Charge in the time limit prescribed in the tender document. The increase in rates of bitumen, emulsion shall only be paid if the bitumen work is carried out within the prescribed period as per approved work programme.

(D) Only actual difference of rates of Bitumen will be payable / deductable to the contractor. No overhead charges and contractor profit etc. are to be added / deleted, no tender premium is to be added / deleted."

(E) The contractor can arrange the bitumen from any of the refinery or import the same subject to the condition that the quality of bitumen is as per the requirement of contract and specifications. Regarding payment of price variation of bitumen as per the agreement, that the escalation de-escalation will be paid on the basis of lesser cost implication to Department / Government on consideration of the difference in rates as given below subject to financial regularity and other terms and conditions of agreement :-

(a) Prevailing rates of IOC refineries at Panipat at the time of tender and at the time of purchase of bitumen.

(b) Prevailing rates at the source from which the bitumen is purchased by the contractual agency at the time of tender.

It is further clarified that:-

(a) When recovery is due on account of decrease in rates of bitumen, higher of the difference in rates of IOC Panipat and that of private refinery / Sector, shall be considered.

(b) When escalation is due to increase in rates of bitumen is due to agency, then lesser of the difference in rates of IOC Panipat and that of private refinery / Sector, from whom bitumen was purchased, shall be considered.

15 (a) (ii) Adjustment for Grey Cement (OPC/PPC) and, Steel for reinforcement and structural members (index for MS Long Products) :

Price adjustment for increase or decrease in the cost of Grey Cement (OPC/PPC) and, Steel for reinforcement and structural members (index for MS Long Products) shall be paid as follows:

(A) If after submission of the, the price of Grey Cement (OPC/PPC) or Steel for reinforcement and structural members (index for MS Long Products) incorporated in the works (not being a material supplied form the Engineer-in-Charge's Store) increase (s) beyond the price (s) prevailing at the time of the last stipulated date for financial bid closing of tenders (including extensions, if any) for the work, then the amount of the contract shall accordingly be varied and provided further that any such increase shall not be payable if such increase has become operative after the stipulated date of completion of work in question.

(B) If after submission of the, the price of Grey Cement (OPC/PPC) / or Steel for reinforcement and structural members (index for MS Long Products) incorporated in the works (not being a material supplied form the Engineer-in-Charge's Store) is decreased, Govt. shall in respect of these materials incorporated in the works (not being materials supplied from the Engineer-in-Stores) be entitled to deduct from the dues of the contractor such amount as shall be equivalent to the difference between the prices of Cement (OPC/PPC) as prevailed at the time of last stipulated date for receipt of tenders including extensions if any for the work and the prices of these materials on the coming into force of such base price of Cement (OPC/PPC) and issued under authority of Engineer-in-Chief, Haryana PWD B&R, Chandigarh.

(C) It is further clarified that the decrease in the prices of of Grey Cement (OPC/PPC) / or Steel for reinforcement and structural members (index for MS Long Products) and shall be deducted from the dues of the contractor if such decrease has become operative after the stipulated date of completion of work in question and increase shall not be payable if such increase shall not be payable if such increase has become operative after the stipulated date of completion of work in question.

(D) The increase/ decrease in prices shall be determined by the All India Wholesale Prices Indices for Grey Cement (OPC/PPC) / or Steel for reinforcement and structural members (index for MS Long Products) as published by the Economic Advisor to Government of India, Ministry of Commerce and Industry) and base price for Grey Cement (OPC/PPC) / or Steel for reinforcement and structural members (index for MS Long Products) as mentioned in the Bid Document or if not mentioned then as issued under authority of Engineer-in-Chief, Haryana PWD B&R, Br. Chandigarh as valid on the last stipulated date of receipt of tender, including extension if any and for the period under consideration.

Adjustment Calculation Formula for Grey Cement

The amount of the contract shall accordingly be adjusted for Cement (OPC/PPC) will be worked out as per the formula given below:-
Adjustment for component of "Grey Cement (OPC/PPC)"

$$Vc = Pc \times Qc \times \frac{CI - C1o}{C1o}$$

Where,

Vc= Variation in Cement (OPC/PPC) cost i.e. increase or decrease in the amount in rupees to be paid or recovered.

Pc= Base price of Cement (OPC/PPC) as mentioned in the Bid Document or if not mentioned then as issued under authority of Engineer-in- Chief, Haryana PWD B&R, Br. Chandigarh valid at the time of the last stipulated of receipt of tender including extension if any.

Qc= Quantity of Cement (OPC/PPC) used in the works since previous bill.

CI0= All India wholesale price index for Cement (OPC/PPC) as published by the Economic Advisor to Government of India, Ministry of Industry and Commerce as valid on the last stipulated date of receipt of tenders including extensions if any.

C1= All India wholesale price index for Cement (OPC/PPC) for period consideration as published by the Economic Advisor to Government of India, Ministry of Industry and Commerce

Adjustment Calculation Formula for Steel for reinforcement and structural members (index for MS Long Products)

$$Vs = Ps \times Qs \times \frac{SI - S1o}{S1o}$$

Vs = Variation in cost of Steel (MS Long Products) i.e. increase or decrease in the amount in rupees in the amount in rupees to be paid or recovered.

Ps = Base price of Steel (MS Long Products), as mentioned in the Bid Document or if not mentioned then as issued under authority of Engineer-in-Chief, Haryana PWD B&R Br., Chandigarh at the time of the last stipulated date of receipt of tender including extensions, if any.

Qs= Quantity of Steel (MS Long Products) paid either by way of secured advance or used in the works since previous bill (Whichever is earlier).

S1o= All India wholesale Price Index for Steel (MS Long Products) for the period under consideration as published by Economic Advisor to Government of India, Ministry of Industry and Commerce as valid on the last stipulated date of receipt of tenders including extensions, if any.

S1= All India Wholesale Price Index for Steel (MS Long Products) for the period under consideration as published by Economic Advisor to Government of India, Ministry of Industry and Commerce.

Base rate of Cement (OPC/PPC) and Steel (MS Long Products)
Grey- Cement (OPC/PPC) : Rs. 4940 /- per MT excluding taxes.
Steel (MS Long Products) : Rs. 50000 /- per MT excluding Taxes.
No other increase/decrease in prices is permissible.

15 (a) (iii) Adjustment of POL (fuel and lubricant) component
Price adjustment for increase or decrease in the cost of POL (fuel and lubricant) shall be paid in accordance with the followings formula:

Vf = 0.85xPf/100xRx(Fl-Fo)/Fo

Vf =increase or decrease in the cost of work during the month under consideration due to changes in rates for fuel and lubricants.

Fo = The all India wholesale price index for 'Fuel and Power' for the calendar month 28 days preceding the date of opening of bids as published by the Office of Economic Advisor, Government of India, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion with website www.eaindustry.nic.in

F1 =The all India average wholesale price index for 'Fuel and Power' for the month under consideration as published by Office of Economic Advisor, Government of India, Ministry of Commerce and Industry, Department of Industrial Policy and Promotion with website as www.eaindustry.nic.in

Pf = 5.
R = Value of work executed during the period.

16. The proportion of payments retained (Retention Money) shall be 6% from each bill subject to a maximum of 5% of final contract price.

[CI.48]

17. (a) Milestones to be achieved during the contract period.

Financial works to be completed	**Period from the start date**	[Cl. 49.1]
Milestone 1 i.e. 20%	25% of the stipulated time	
Milestone 2 i.e. 50%	50% of the stipulated time	
Milestone 3 i.e. 75%	75% of the stipulated time	
Milestone 4 i.e. 100%	100% of the stipulated time	
(b) Amount of liquidated damages for delay in completion of works	**For whole of work** (1/2000)th of the initial / revised Contract Price, rounded off to the nearest thousand, per day. **For non achievement of milestone**, (1/2000)th of the initial / revised Contract Price, rounded off to the nearest thousand, per day.	
(c) Maximum limit of liquidated damages for completion of work	10 (Ten) per cent of the contract price rounded off to nearest thousand.	

18.	The amounts of the advance payment are:		[CL:50]
	Nature of Advance	**Amount**	**Conditions to be fulfilled**
I	Mobilization	Maximum 5 % of the contract price	An interest bearing mobilization advance upto the extent of 5% of contract value (or such limit as prescribed) may be given to contractors for works costing more than Rs.2.00 crores, against unconditional and irrecoverable bank guarantees to be furnished by the contractor equal to the amount of advances paid from time to time. Interest @Marginal Cost of Funds based Lending (MCLR) of SBI prevalent at the time of tender per annum shall be charged on mobilization advance given to the contractor The recovery of the mobilization advance together with interest shall be done through percentage deductions from interim/running payments, in the manner prescribed in the contract. It shall be desirable to recover the total amount of mobilization advance alongwith interest within 80 % of the time stipulated for completion. The mobilization bank guarantee shall be released after the recovery of full mobilization advance, including interest thereon. In case, of slow progress of work, the'Engineer' comes to a conclusion that the total amount of mobilization advance with interest cannot be recovered by the time 80% of stipulated time is over, the bank guarantee(s) furnished by the contractor may be encashed. If the tender document so provides, the contractor will have the option to furnish mobilization bank guarantee in parts and on recovering of ¼ , ½, ¾ and full advance, proportional bank guarantees can be released.

II	Secured advance for non-perishable materials brought to site	75% of Invoice value	In case the contractor requires an advance on the non-perishablematerials brought to site, 'Engineer' may, on written request from the contractor, sanction the advance upto an amount 75% or as decided by the 'Engineer' of the value (as assessed by themselves) as stated in the Contract Data of such materials, provided such materialsare to be consumed with in next three months and that a formal agreement is drawn up with the contractors under which Govt. secures a lien on the materials and is safeguarded against losses due to the contractor postponing the execution of the work or misuse of the material and against the expense entailed for their proper watch and safe custody. If the material is fire prone or can be destroyed fully/partially on storage, it shall be desirable to have it first insured by the contractor. Cases in which a contractor, whose contract is for finished work, requires an advance on the security of materials brought to site. **Any secured advance should be settled / recovered within 3 months of its release.** Note : Such advance will not be given for sand, aggregate, GSB and stone metal etc. The contractor will submit the original bills and e-way bills for the material for which secured advance is being claimed.

III	Machinery Advance	Maximum 5 % of the contract price	For works costing more than Rs.10.00 crores another interest bearing machinery advance to a maximum of 5% of the contract price, depending on merits of the case, can be given against the new key construction equipment brought to the site and to be deployed on the work, if a written request is made by the contractor. The advance shall be paid only upon the contractor furnishing (i) an affidavit that the machinery in question is free of any charge or hypothecation with any bank or financial institution: (ii) unconditional and irrecoverable bank guarantee(s) (iii) satisfactory proof of purchase/payment of the machinery, and (iv) a written undertaking that the equipment so purchased by him is required for use on the work in question, is fully serviceable shall work only on that job and shall not be removed from the site without obtaining written approval of the 'Engineer's .The recovery of machinery advance and the Interest @Marginal Cost of Funds based Lending (MCLR) of SBI prevalent at the time of tender per annum shall be charged. against the machinery advance given to the contractor. The recovery of the machinery advance together with interest shall be done through percentage deductions from interim/running payments, in the manner prescribed in the contract. It shall be desirable to recover the total amount of machinery advance alongwith interest within 80% of the time stipulated for completion. The mobilization bank guarantee shall be released after the recovery of full machinery advance, including interest thereon.
	The bank guarantee shall be unconditional, requiring the bank to pay the beneficiary the sum specified in the guarantee on the first demand and without demur, and without reference to the party on whose behalf it has been issued, notwithstanding any dispute or disagreement that might have arisen between the employer and the contractor. The f orm of bank guarantee shall be prescribed by the departments. It shall be the duty of the 'Engineer' to obtain independent confirmation about the genuineness of the bank guarantees directly from the bank issuing them. Further, he shall keep them in safe custody and hand them over to his successor when a change of charge takes place. Details of bank guarantees shall be entered into a register which shall be reviewed every month to ensure timely action in respect of renewal of any guarantee, if required, before it expires.		

	(The advance payment will be paid to the Contractor no later than 28 days after fulfillment of the above conditions)
	Always provided that the advance shall be completely repaid prior to the expiry of the original time for completion pursuant to clauses 17.
	The secured advance shall be repaid from each succeeding monthly payments to the extent material [for which advance was previously paid pursuant to Clause 51.4 of G.C.C.] have been incorporated into the Works.

19. The period for setting up a field laboratory with the prescribed equipment is **28** days from the date of notice to start work [Cl.31.1]

20. **The Defect Liability-cum-Maintenance Period is 730 Days from the date of completion.** **[**Cl. 56]

21. The date by which "as-built" drawings (in scale as directed) in 2 sets are required is within 28 days of issue of certificate of completion of whole or section of the work, as the case may be. [Cl.58.2]

22. The amount to be withheld for failing to supply "as-built" drawings by the date required is **Rs. 0.5% of agreement amount**. [Cl.58.2]

23. The following events shall also be fundamental breach of Contract: [Cl.59.2 (h)]
(i) The Contractor has contravened Clause 7.1 or Clause 9 of Part I General Conditions of Contract
(ii) As per bid document

24. The percentage to apply to the value of the work not completed representing the Employer's additional cost for completing the Works shall be 20 (Twenty) percent. [Cl.60.1(i)]

The Defect Liability-cum-Maintenance Period is 02 (Two) Years from the date of completion.

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Section 4-A
Detailed Scope of Work

Detailed Scope of Work.

Section 4-B
Technical Specifications

(1) Execution of Electrical Works

In case where the work involves electrical work also, the contractor will get the work executed through a sub contractor and will get the sub contractor approved from the employer before start of electrical work. The employer will examine the credentials of the electrical sub contractor on the basis of similar qualification criteria as has been applied for the civil works in this bid. The electrical sub contractor must have license of electrical works from Chief Electrical Inspector, Haryana.

(2) Execution of Public Health Works

The execution of shifting of Public Health utilities works shall be supervised by the PHED as agreed vide letter No. 100708/PHE/Plg. dated 10.11.2016. The payment shall be made by PWD (B&R) after getting verification of the bill with respect to the Public Health utilities by the PHED.

(3) List of Equipment, Plant and Machinery

Sr. No.	Type of Equipment	Maximum Age as on date of bid submission	Contract Value					
			Upto Rs. 50 lacs	More than Rs. 50 lacs upto Rs. 1 crore	Upto Rs. 5 crore	More than Rs. 5 crore upto Rs. 20 crore	More than Rs. 20 crore upto Rs. 50 crore	More than Rs. 50 crore
1.	Tipper Trucks	5-7	*	*	6	10	15	20
2.	Motor Grader	5	*	*	2	2	3	4
3.	Dozer	5	*	*	1	1	1	2
4.	Front end Loader	5	*	*	2	2	2	4
5.	Smooth Wheeled Roller	5	*	*	2	2	3	4
6.	Vibratory Roller	5	*	*	2	2	2	3
7.	Batch Type/Hot Mix Plant/Drum Type Hot Mix Plant with Electronic Controls (Minimum 80-100 TPH Capacity) as per BOQ	5	*	*	1	1	1	2
8.	Paver Finisher with Electronic Sensor	5	*	*	1	1	1	2
9.	Water Tanker	5	*	*	3	3	4	5
10.	Bitumen Sprayer	5	*	*	1	1	1	2
11.	Tandem Roller	5	*	*	1	1	1	1
12.	Concrete Mixers with Integral Weigh Batching facility	5	*	*	2	2	1	2
13.	Concrete Batching and Mixing Plant (Minimum Capacity – 15m3/hour)	5	*	*	-	-	1	1

14.	Concrete paver capable of paving 7.5m width in one single pass including all accessories such as automatic dowel bar insertor, integral vibratory system and electronic sensors ancillary equipment for applying curing compound joint cutting etc.	5	*	*	-	-	-	1
15.	Concrete Batching and Mixing plant with automatic control (minimum 100 cum/hour)	5	*	*	-	-	-	1
		Total			**24**	**28**	**36**	**54**

Note: above list is only suggestive and not exhaustive. Any other machinery shall also be included and deployed for execution of work as per site requirement.

The Technical Personnel for work are to be deputed as given in table below:

Sr. No.	**Personnel**	**Qualification**	**Contract value**					
			Upto Rs. 50 lacs	**More than Rs. 50 lacs upto Rs. 1 crore**	**More than Rs. 1 crore upto Rs. 5 crore**	**More than Rs. 5 crore upto Rs. 20 crore**	**More than Rs. 20 crore upto Rs. 50 crore**	**More than Rs. 50 crore**
1.	Project Manager	BE.Civil + 10 Years Exp	-	1	1	1 No	1 No	1 No
2.	Site Engineer	BE.Civil+3 Years Exp. OR diploma with 7 years Exp.	-	1	1	2 No.	4 No.	6 No.
3.	Plant Engineer	BE. Mech. +3 Years Exp. Or Dip.Mech. + 7 Years Exp.	-	1	1	1 No	1 No	2 No.
4.	Quantity Surveyor	BE. Civil +3 Years Exp. Or Dip. Civil+7 Years Exp.	1	1	1	1 No	1 No	2 No.
5.	Soil & Material Engineer	B.E. Civil + 3 Years Exp. Or Dip. Civil + 7 Years Exp.	-	1	1	1 No	1 No	1 No
	Total:		**1**	**5**	**5**	**6**	**8**	**12**

5. The Defect Liability-cum-Maintenance Period (DLP)'
(i) For improvement / special repair of roads DLP is 3 years for State Highway and MDR. For VT road and V1, V2, V3 roads it is 4 years. In case of new construction, DLP is 4 years.
(ii) For premix carpet work, 'Defect Liability-cum-Maintenance Period' is 2 years.
(iii) For surface dressing work, Defect Liability-cum-Maintenance Period' when executed on through rates from contractual agency is 1 ½ year.
Further, it is clarified that DLP for drains / retaining wall / culverts / bridges Inter-locking paver blocks shall be kept as per category of road (i.e. 3 years for SH / MDR and 4 years for ODRs) even in case of roads treated with premix carpet where DLP is for 2 years and treated with surface dressing where DLP is for 1 ½ year.
The 'Defect Liability-cum-Maintenance Period' is without any payment for maintenance activities.
iv) The defect liability for cement concrete pavement shall be ten years irrespective of category of road.

Technical Specifications
For
Building Works

1. SPECIFICATIONS

The work will be executed as per Haryana PWD B&R Specifications as per latest amendment. In case of any discrepancy the Bureau of Indian Standards shall be followed and then CPWD specifications shall be followed. These will be in order of preference as mentioned below:

i) Haryana PWD (B&R) Specifications.
ii) Bureau of Indian Standards.
iii) CPWD Specifications.

In case, any item is not covered by all three above, then the decision of 'Engineer' shall be final.

1. PREAMBLE

1.1 The technical specifications contained herein shall be read in conjunction with the other bidding documents as specified in volume-1.

3. SITE INFORMATION

3.1 The information given here under and provided else, where in these documents is given in good faith by the employer but the contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the employer is erroneous insufficient.

3.2 The area in which the works are located is mostly plain terrain.

4.GENERAL CLIMATIC CONDITIONS

4.1 The Variation in daily temperature in this region is as under :-

(i) During summer months, from about 20º C minimum to 46º C maximum.
(ii) During winter months, from about 2º C minimum to 28º C maximum.

4.2 The average annual rainfall in the area is of the order of 500mm. A good portion of which is concentrated during the months of August and September each year.

4.3 The range of relative humidity varies from a minimum of 40% to a maximum of 80%.

EXPLANATORY NOTES

1. The rates are for complete work including cost of all materials, labour, tools and plants and water etc. unless or otherwise specified.

2. All clauses and notes given in the Haryana PWD schedule of rates 2021 (2nd edition) and DSR 2018 with upto date correction slips issued upto the date of tender shall be applicable to all above items wherever necessary.

3. The description, rates, units, etc. of above schedule shall be corrected as per Haryana PWD schedule of rate 2021, (2nd edition) in case of any error or omission.

4. Chapter numbers with items referred to above are of Haryana PWD schedule of rates 2021 (2nd edition), corrected upto date.

5. The whole work shall be carried out strictly in accordance with the Haryana PWD specifications book 1990 latest edition as applicable to Haryana State with upto date correction slips and CPWD / MoRT&H / MoRD Specifications as applicable.

6. No premium shall be payable on the items which are not provided in the Haryana PWD schedule of rates 2021, corrected-up-to-date.

7. Samples of all building materials, doors and windows, fittings and other articles required for use on the work shall be got approved from the 'Engineer', Articles manufactured by firms of repute, approved by the 'Engineer' shall only be used. Only articles classified, as First Quality by the manufactures shall be used. Articles which are not First quality shall be rejected by the 'Engineer'. Preference shall be given to those articles, which bear I.S.I. certification mark. In case articles bearing ISI certification mark are not available, the quality of samples brought by the contractor shall be judged by the standards laid down in the relevant ISI specifications. All materials and articles brought by the contractor to the site of work for use shall confirm to the samples approved, which shall be preserved till the completion of work. Final decision to reject any material shall rest with the 'Engineer'.

8. The contractor shall provide suitable measuring arrangements at site for checking of various articles brought by him to ensure mixing in specified proportions.

9. The contractor shall provide such recesses, hole, openings etc. as directed by 'Engineer' as required for the Electrical / sanitary work and nothing shall be payable on this account.

10. Thickness of RCC shall be measured and paid for structural sizes designed.

11. **Reinforcement shall be measured in length including hooks, if any, separately for different diameters actually used in work, during overlaps. From the length so measured, the weight of reinforcement shall be calculated in tones on the basis of IS:1732 Wastage, overlaps couplings, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire or other methods for binding and placing, shall not be measured and cost of these items shall be deemed to be included in the rates for reinforcement.**

12. Where there is a provision for flush door shutters, only doors which bear the ISI certification marks and arranged from manufacturer of good repute like Green, Duro,

Durenzo, Century shall be accepted. In case flush door shutters bearing ISI certification marks are not available in the market, flush door shutters confirming to ISI specifications and arranged from manufacturer of good repute shall only be accepted. They should be water proof, termite proof and have a guarantee for 10 years for any defect liability. The plyboard / mica / laminate / veneers / teak veneers/ block boards should also be of premium quality of reputed makes like Green, Duro, Durenzo, Century with ISI mark. For WPC doors, windows and frames thereof from brand Green, Duro, Durenzo, Century, COBE shall be accepted.
For Ceiling solutions : The items of brand names Armstrong, Gyproc, Decibel Ceiling & Acoustics, Shera, USG Boral and Gypsoman etc shall be accepted.

13. Steel butt hinges shall strictly confirm to Indian standard specification, IS-1341-1970 (Latest edition) and dimensions given in table 2 for medium weight cold rolled mild steel butt hinges of the above specifications Hinges shall be of good workmanship and manufactured by the firm of good repute.

14. Analysis of rates for non-schedule / non agreement items i.e. items which are not provided in the Notice Inviting Tender / Haryana PWD Schedule of Rates, 2021 (2nd editions) corrected upto date shall be payable as per actual lowest market rates from the recognized public market suitable to the executing division and wages of labour as applicable at the time of execution of work, plus admissible contractors profit and over head charge. For such items of materials the contractor shall be required to produce original vouchers which shall be subjected to verification by the 'Engineer'. The rates for non-schedule items shall be approved by the competent authority as recognized in the departmental financial rules in existence at the time of approval.

15. First Quality glazed/ceramic/vitrified tiles of reputed manufactures such as Kajaria, RAK, NITCO, Somany, Orient Bell, Jhonson, Simpolo /AGL tiles/Oasis Tiles/Home Square Tiles to be arranged by the contractor.

15 (a) OPC cement duly ISI marked of 43 grade such as JK, Lakshmi, L&T, A.C.C, Shree, Ambuja, Wonder Cement by RK Group and Birla or as approved by Engineer should be arranged by the contractor.

15 (b) TMT Steel Fe-500/ 500 D duly ISI marked manufactured by reputed brands such as Rashtriya Ispat Nigam Limited Vizag TMT 500 D/ Tata Iron & Steel Company (TISCON) /Steel Authority of India Limited (SAIL TMT Bar)/JSW(Jindal Panther TMT)/ Electrosteel (V-Xega) 550D TMT Bar/Shyam Steel Industries Ltd. (Shyam TMT ReBars Fe 500D) / Orissa Metallurgical Industry Pvt. Ltd. (OMPL TMT 500 D)/Super Shakti Steel (Super Shakti Fe500). AF-Star manufactured by M/s M.S. Aggarwal Foundries Pvt. Ltd. etc. shall be arranged by the contractor.

16. Waterproofing Compound, membrane, PU coating for basement podium terrace puf insulation, sunken portion treatment, Plasticizer, Super Plasticizer, Admixtures, Tile / Stone Adhesive /Tile / Epoxy Grout / Injection Grout, FRP / Fibre reinforcement wrap of reputed manufactures such as ASIAN SMARTCARE / GCP / BASF / Bitumet / Technonicol / Fosroc / Sika / Pidilite/ UltraTech/ Synergy Telecommunications to be supplied by the Deptt. or arranged by the contractor.
For paint works like Eexterior emulsions, ACRYLC interior emulsion / water-based enamels / enamel and distempers the products of only Asian Paint, Dulux, Nippon, Nerolac, Berger and Woodco paints etc shall be accepted.
For False Ceiling and acoustic wall paneling makes Hi-Steel (PR products) and Gyptech are approved.
For fire fighting equipment brand name Lifeguard Fire Fighting Equipment is

approved.

17. The Tender with the condition regarding steel work to be done at labour rates shall be considered invalid and rejected straightway.

18. The quantities of all items given in the Schedule are tentative. These can be increased or decreased as per working Architectural drawings / structural drawings & nothing extra shall be paid.

19. For quality control, the contractor shall be required to use cement concrete mix giving a minimum cube strength as may be prescribed in the relevant structural drawings of work. For cement concrete and cement mortar work and other items the test should be regularly carried out as per procedure laid down in relevant I.S.I. & other codes at the expense of the contractor. The rates provided in the H.S.R. 2021 (2nd edition) included the cost of such testing.

20. Irrespective of what is stated in para 6 of General Rules of Haryana P.W.D. schedule of rates, 2021 (2nd edition) no carriage of cement, steel, bricks and water or any other type or material shall be admissible irrespective of any lead involved.

21. All the flooring like terrazzo, Kotah stone or marble flooring should be granite finished. No extra rate shall be paid on this account to the contractor.

22. Where-ever brick work or earth filling/embankment work is to be executed, the same has to be executed in accordance with the provision in the Fly Ash Notification dated 14.9.99 & 27.8.2003 i.e. by using Fly Ash brick and filling/embankment constn. by Pond Ash/Fly Ash as specified in the aforesaid notification
after getting the design approved from 'Engineer's.Only I.S.I. marked factory manufactured flush door shutter ply and block board should be used, where ever required.

23. In case factory manufactured items, the contractor will get the name of manufacturers approved form deptt. and a warranty of 5 years certificate in favour of 'Engineer' in charge. In case of door shutters the type of wood used shall also be given by the manufacturer. The agency shall produced a certificate that door & window shutters fixed at site are actually factory manufactured - in case agency fails to do so the rate for the same shall be paid for site manufactured shutters as per HSR 17.30 & 17.31 of HSR 2021 2nd edition.

24. The agency will provide 2 Nos. boards of size 4' X 2½' at the site of work intimating the details of the project otherwise deduction will be made from the first running bill of the Agency @ Rs 15000/- per board.

25. Contractor will use coarse aggregate (all type of stone grit) and coarse and i.e. stone dust (Zone IInd as per IS code). The material should confirming to the latest IS specification.

26. Regular and monthly quality control test as per frequency as per IS code specification / PWD specification is to be done by the Contractor at his own cost and submit the result to the 'Engineer' regularly and in case if he fails to do the same, 'Engineer' will got conduct all quality control test as per frequency for any reputed lab & amount of the same will be recovered for the agency. Beside this 'Engineer' will carry out their own quality control test and also will engage IIIrd party quality control agency for proper

quality control work and charges of this will be borne by the Govt.

27. All aluminum fittings for doors and windows shall be of 'Classic' or equivalents make confirming to I.S. Specifications as approved by the 'Engineer'.

28. Third Party Inspection - The Engineer-in-Charge may opt for 3rd party inspection other than department in addition to inspection by department staff, the 3rd party would inspect to ensure execution of work as per specification/ agreement and also quality control i.e. draw of samples, testing and other items etc. The report of the same would be submitted to Engineer-in-Charge by the 3rd party. The agency/ contractor shall be bound by the report of 3rd party inspection and shall take remedial measures for execution of work as per specifications in agreement at their own cost. The cost of 3rd party inspection will be borne by the employer.

29. Cement contents - Actual cement required for the aggregates in concrete to be used shall be determined by laboratory test while designing the concrete mixes. If the cement contents of the design mix of that grade come less than the provision of cement contents provided in the Haryana Scheduled of Rates, (with latest amendments) due to durability conditions, the cement contents as provided in the Haryana Schedule of Rates shall be used and no extra payment on this account shall be made to the contractor. No extra amount over and above the minimum cement content as provided in the Haryana Schedule of Rates shall be paid.

30. Design Mix Design mix will be got carried out by the Engineer-in-Charge from any of the reputed laboratory at the cost of contractor. The source of aggregate shall be identified by the contractor and Engineer-in-Charge's representative shall be present while taking sealed samples for the design mix from such source. Frequency of carrying out Design Mix shall be as per relevant IS Codes and also when the source of aggregate will change, the design mix shall be carried out again.

31 Conditions for Quality Control and Lab:

i. The contractor shall have to provide a field laboratory fully equipped at work site before starting the execution of works for conducting all the relevant tests mentioned in the Haryana PWD specification subject to the approval of the 'Engineer's -in-charge or his representative. The record of such tests is to be maintained in proper register duly signed by the Contractor or his representatives, which will become the property of the department. The Contractor will bear all the running expenses for conducting such tests. All the tests will be carried in the presence of S.D.E.-in-charge of the work. All the entries are to be signed by the contractor, S.D.E. and J.E.-in-charge. **In case the contractor does not set up the field laboratory, an amount of Rs 10.00 lacs shall be withheld from the first running bill and if the contractor does not setup the laboratory, the same will be setup by the department from the withheld amount.**

ii. The quality control tests which are carried out by the department and the material for such tests will be supplied by the contractor free of cost. In case the material is not found up to the requirement, the same will be rejected.

iii. Contractor shall provide suitable measuring arrangement and leveling instruments latest quality duly approved by 'Engineer's -in-charge at the site of work.

iv. No extra payment on account of quality control measures shall be paid to the contractor.

v. The 'Engineer's -in-charge at his discretion can get any type/Nos. of tests carried out any other approved laboratory for his satisfaction for which all the expenses incurred would be borne by the agency. The results so obtained from the laboratory would be acceptable and binding to the agency.

vi. The Contractor shall be required to provide all such materials/equipment's at site to conduct field tests and to ensure that the quality of aggregate shall be according to the prescribed specification and no payment for material required for sample for such tests shall be made to him. In case, the material is not found up to mark, the same will be reject.

vii. For cement, steel and similar other material, the essential tests are to be carried out at the manufacturer's plants or at laboratories other than the site laboratory, the cost of samples, testing and furnishing of test certificates shall be born by the contractor. He shall also furnish the test certificates to the 'Engineer'.

viii. 25 % of the beams and columns in each floor before laying of slab for that floor of the building, shall be subjected to Rebound Hammer Test conforming to IS 13311 (Part 2): 1992 before proceeding further with construction of next story of Building. The tests shall be witnessed by SDE. In case the test result fails the column in parameters it shall be demolished and reconstructed at the cost of the contractor. The test results shall be tabulated and made part of the final bill.

xi. The liquidated damages can be deferred/reduced/waived (whole or part) by the SE concerned for contract(s) upto Rs.1.00 cr., CE(Buildings) from Rs.1.00 cr. to Rs.10.0. cr. and E-In-C of Haryana PW(B&R) Deptt. for contract(s) above Rs.10.00 cr. This will be done on the written request of the contractor and written recommendations of EE/SE as the case may be.

x. Upon completion and before offering the work for acceptance, the contractor shall remove all false work, excavated and useless materials, rubbish, temporary building constructed by him and shall leave the site and adjacent area in a neat and clean condition to the entire satisfaction of the 'Engineer's . The 'Engineer's , reserves the option to take away any item of work or any part thereof at any time during the currency of the contract and reallocate it to any other agency with due notice to the contractor without liability of any kind or payment of any compensation. Extra amount if incurred will be recovered from the agency.

xi. The contractor has to make his own arrangements for water, bricks, wood and every item required directly or indirectly for completion of work.

xii. No claim shall be entertained on account of increase in price of labour and material other than provided in the contract due to any cause whatsoever.

xiii. In case of emergency the Contractor shall be required to pay his labour every day and if this is not done, the 'Engineer' will make the requisite payment and recover the same from the contractor.

xiv. Actual quantities of completed and accepted work shall only be paid.

xv. No pits shall be dug by the contractor near the site of work or within Govt. land for taking out earth for use on the works. In case of default the pits so dug will be filled in by the department at the cost of the contractor plus fourteen percent departmental charges.

xvi. The rates to be quoted by the contractor shall be inclusive of octroi terminal tax, royalty, cess and all other taxes (excluding GST) and charges. These are for complete work in all respects The GST amount shall be reimbursed on production of proof of deposit of GST with Govt. for the previous payment.

xvii. The Contractor shall not be entitled for any payment on account of work done untill he signs the agreement.

ixvii. Nothing extra shall be paid for any lead and if unless otherwise specified for any material required directly or indirectly and the rates to be given in the tender shall include all leads in the contract schedule.

xix. The Contractor shall be responsible for any /all losses of material, damage done to unfinished work as a result of floods and other acts of God. The Govt. will not be responsible for any compensation as a result of such damage or loss to the Contractor and the Contractor shall be liable to set right such damage at his own cost to the satisfaction of the 'Engineer's .

xx. The royalty, sales tax, cess and any other taxes, if any shall be paid by the contractor direct to the respective department in accordance with their rules and regulations in force from time to time without intervention of the Public Works Department.

xxi. Amount of work may be increased or decreased and any item committed and substituted in accordance with the requirement of the department and no claim on this amount shall be entertained. **The contractor will have to complete the whole building as per architectural plans submitted by the Chief Architect Haryana by the Architect**
hired by the department for the work.

xxii. All material left at site by the contractor for a period of more than one month after the completion of work shall become the property of the public works department and Contractor shall have no claim whatsoever for such material.

xxiii. The Contractor shall maintain at site of work full details of specification of the work fixed by the 'Engineer' and approved drawing of the work.

xxiv. Nothing extra shall be paid to the Contractor for diversion of water in the channels stream if it becomes necessary for the execution and completion of the work.

xxv. The Contractor will not have any claim in case of delay by the Department for removal of tree or shifting, raising, removing of telegraph, telephone or electric lines (Over head or under ground) and other structure, if any, which comes in the way of the work.

xxvi. The percentage above and below HSR including ceiling premium if any should be quoted by the Contractor after making due diligence of the items in the BOQ and item rates for NS items in BOQ should be quoted without any condition. In case any condition is tendered this will be considered as null and void and only percentage above and below HSR item rates quoted for NS items by the tenderer shall be considered. In case any tenderer refuses to accept this, action shall be initiated as per provisions in the Bid Security Declaration Form or Bid Security shall be encashed.

32. Relation with Public Authorities:

The Contractor shall comply with all legal orders and directions given from time to time by any local or public authorities and shall pay out of his own money the fees or charges to which he may be liable.

33. Additional Conditions applicable to performance of Contractor

i. Item for which no rate or price have been entered in, will not be paid for by the employer when executed and shall be deemed covered by the other rates and prices in the bill quantities (Refer: ITB Clause 13.2 and conditions of contract Clause 43.3).

ii. Where there is discrepancy between percentage written in figures and words while quoting rates for HSR items, the percentage written in words shall be considered. Where there is a discrepancy between unit rate and the figures written in words for NS items, total resulting from multiplying the unit rate by quantity, the unit rate quoted shall govern (ITB clause 27.1(b)).

iii. The agency to whom the work is allotted will have to produce original voucher for all quantities in lieu of purchase of bitumen, steel and cement from the original manufacture or the authorized dealer/ distributors to the satisfaction of the 'Engineer' for ascertaining the genuineness of material. Attested copy of such voucher will have to be submitted along with the bills.

iv. The documentary proof of procurement of cement & steel from the reputed source and test result from CRRI or Sri Ram Test House, New Delhi will be produced by the agency.

v. The contractor will be held strictly responsible to the true intent of the specification in regard to quality of materials, workmanship and the diligent execution of the contract.

vi. All materials and each part of detail of the work shall be subject at all times to inspection by the Engineer-in. Departmental Representative or other authorized subordinate who shall be furnished with reasonable facilities and assistance by the contractor for ascertaining whether or not the work as performed or the materials used are in accordance with the requirements and intent of the plans and specifications.

vii. The contractor shall furnish written information to the 'Engineer' stating the original source of supply and dates of manufactures of all materials manufactured away from the actual site of work. The information shall be furnished at least two weeks (or such other period as may be directedby 'Engineer' in advance of the incorporation of any such materials in the works.)

viii. Any work done or materials used without supervision or inspection by the 'Engineer' /Departmental Representative is liable to be ordered to be removed and replaced at the contractor's expenses.

ix. If so directed the Contractor shall at any time before the acceptance of the work, remove or uncover such portion of the finished work as may be directed. After examination, the contractor shall restore the said portion of the work to the standards required as per specifications. The work shall not be considered to have been completed in accordance with the

terms of the contract until the 'Engineer's -in-charge shall have certified in writing that it has been completed to his satisfaction. No approval of materials or workmanship or approval of part of the work during the progress of execution shall bind the Engineer in any way or effect his power to reject the work when alleged to be completed or to suspend the issue of his certificate of completion until such alterations or modifications or reconstructions have been affected as shall enable him to certify that the work has been completed to his satisfaction.

x. The inspection of the work or materials shall not relieve the Contractor any of his obligation to fulfill the terms of the contract as herein prescribed by the plans and specifications.

xi. Failure to reject any defective work or material will not in any way prevent later rejection when such defect is discovered or obligate the department to make final acceptance.

xii. If, the contractor seeks to some assistance from the department in connection with arranging water/electric connection from the public utility service authorities for the purpose of Govt. work such assistance only to the extent of writing a letter from the 'Engineer' to the authority concerned for giving such connection may be provided. All charges etc. shall be borne by the contractor.

vxii. The contractor may, on application of the contractor, issue essentiality certificate for Diesel/Petrol (if it becomes a controlled commodity) required for materials to be used on the work but the department will not undertake any responsibility for the arrangement of such Petrol/Diesel, Non availability of any such materials will not absolve the contractor of his contractual obligation. No claim of any kind what-so-ever shall be entertained for any and all the losses or damages to the contractor due to the completion of the work getting delayed due to the failure or delay on the part of the public works department under the terms and conditions of the contract.

xiv. The contractor shall supply at his own cost and expenses all labour materials etc. for labour and checking of any portion of the work during construction.

Whosesoever required by the 'Engineer' or his representative and nothing extra shall be paid for same.

xv. Occupation of Additional Lands:
In case, when it becomes necessary for due fulfillment of the contract for the contractor to occupy land outside the P.W.D. limits the contractor shall make his own arrangement with the land owners and pay such amount, as may be mutually agreed upon by them.

xvi. No claim by the contractor for additional payment will be allowed on the ground of any misunderstanding or misapprehension in respect of any such matter or otherwise on the ground of any allegation or fact that incorrect information was given to him by any person whether in the employ of the Govt. or not or of the failure on his part to obtain correct information nor shall the contractor be relieved from any risk or

obligations imposed on or undertaken by him under the contract on any such ground or on the ground that he did not or could not fore-see any matter which may in fact, effect or have affected the execution of the work.

xvii. During the absence on work of the 'Engineer' he shall be represented by one of his subordinate whose duties are to watch and supervise the works, to test and examine any materials to be used or workmanship employed to ensure that the works are performed in conformity with the plans, estimates and specifications in all respects and to keep 'Engineer' informed of the progress of the works and the manner in which they are done. The 'Engineer' may from time to time delegate any of the powers and authorities vested in him to the departmental representative in writing.

xviii. The Departmental representative shall have no authority to alter or waive the provisions of plans and estimates and specifications or to relieve the contractor or any of his duties or obligations under the contract. He shall however, have the authority to inform the contractor in writing to replace any materials considered defective and to suspend, to do, or rectify the work improperly performed or not according to plans and estimates or specifications in his judgment and the contractor shall comply.

xix. Failure of the Departmental Representative to disapprove any work of materials shall not prejudice the power of the 'Engineer' thereafter to disapprove such work or materials and to order the pulling down, removal or breaking up thereof. If the contractor shall be dissatisfied by reason of any decision of the Departmental representative, he shall be entitled to refer the matter to the 'Engineer'. Who shall thereupon confirm or reverse such a decision.

xx. The contractor shall also inform the 'Engineer' in writing when any portion is ready for inspection giving him sufficient notice to enable him to inspect the same without retarding the further progress of the work.

xxi. Unless otherwise provided in the contract document materials such as rubble, gravel sand, murrum, kankar earth, soil, etc. obtained from excavation and materials obtained by dismantling any existing structures shall remain the property of the Government.

xxii. Any tress branches, bushes, crops etc. which may be required to be cut during the execution of the work shall be handed over to the Public Works Department or disposed of as directed.

xxiii The contractor will submit the design of temporary structure scaffolding to department in advance without any cost. The contractor will remain responsible for design and safety of scaffolding irrespective of approval by the Engineer-in Charge.

xxiv. The contractor shall use canal water for construction of building or water from any other sources as approved by the 'Engineer'. Water should be got tested at regular intervals i.e. maximum of 2 (two) months from the laboratory approved by the 'Engineer' and no extra cost will be paid for the same. Water to be used shall meet latest IS standard as per IS

456/other relevant codes.

(i) A. FOR EXCESS CONSUMPTION OF MATERIALS FROM THE THEORETICAL CONSUMPTION

(i) No Claim for Excess Consumption of material other than those specified shall be entertained by the department.

B. FOR SHORT CONSUMPTION OF CEMENT

(i) Upto 5%, the recovery of cost of material thus saved shall be made from the contractor at the base price as applicable on the date of tender.

(ii) Less consumption by more than 5% (i.e. above 5 %) the rates of items of work involved shall be reduced. If it is not possible to determine the exact items on which less material has been used, the cost of the material so saved shall be recovered from the contractor at double the issue rate. The Executive Engineer reserves the right to take any other deterrent action which he deems fit against the contractor. It shall be at the discretion of the department to determine whether the stability of the structure is affected adversely due to less consumption of materials and in case it is felt that it is likely to be so, the Executive 'Engineer' shall reject the work and the decision of 'Employer' in such matter shall be final.

1.Conditions for MAINTAINENCE-CUM-DEFECT LIABILITY PERIOD [Building Works]

38.1 The defect liability-cum-maintenance period shall be **two years** from the date of completion in case of original works. For maintenance and S/R works, defect liability period will be **one year** and re-painting / white wash / snowcem / distempering will not be required. The date of completion shall be considered as the date certified by the 'Engineer'.

38.2 The Engineer shall give notice to the contractor of any defects before the end of the effects Liability-cum-Maintenance Period. The Defects Liability-cum-Maintenance period shall be extended for as long as defects remain to be corrected.

38.3 The Contractor shall correct the notified Defect / Defects within the length of time as specified by the Engineer's, notice.

38.4 The contractor will be fully responsible for the quality and workmanship of the works executed by him. The liability on account of shortcomings in executed items found by any investigating agency during the defect liability period or afterwards shall be born by the agency.

38.5 The Contractor shall do the routine maintenance of building to the required standards in the manners as per Haryana PWD specifications latest edition, DNIT, agreement conditions and keep the whole building in defect free condition during defect liability period as defined above.

38.6 The routine maintenance standards shall meet the following minimum requirements to the entire satisfaction of 'Engineer':-

i) Plaster work and flooring work to be repaired soon after these appear or brought to his notice either during contractor's monthly inspection or by the

Engineer or otherwise. Repair shall be carried out in a manner which does not affect the aesthetics.

ii) Defective joinery such as door, window, cup-board shutters, chowkhats, wire gauge, glass panes, fitting, fixtures etc. to be rectified / replaced immediately after the defects appear.

iii) Any structural damage / fault / defect to be rectified to the satisfaction of 'Engineer' as soon as the same appears.

iv) Defective or incomplete/improper white washing / colour washing, distempering, painting etc. to be rectified immediately on notice by the 'Engineer's .

v) All rain water pipes, sun-shades and the like components to be inspected every fortnightly and cleaned as and when required.

vi) Leakage of water of any kind in the building to be set right immediately on priority.

vii) All electrical / Public Health installations including wiring, pipelines etc. made in the building to be repaired / rectified / replaced as soon as any defect has appeared / notice.

viii) The agency shall make good all the items / works damaged during the repair being done by him and bring the same in original form.

ix) Any other maintenance operation required to keep the building use worthy at all the time during the maintenance period.

x) He shall maintain a register in the building for daily recording the defects, damages, shortcomings noticed by user and address the problem within three days or else he will approach the 'Engineer' for extension of this time.

xi) Before the end of defect-cum-maintenance period is completed, all damaged door /window should be replaced as per original work. All malfunctioning fittings and fixtures of doors/ windows and woodwork, Public Health fixtures, taps etc. of the whole building should be replaced to the satisfaction of Engineer/ Employer as per original work will be carried out by the contractor.

38.7 To fulfill the objectives laid down in above sub clauses, the Contractor shall undertake detailed inspection of the building at least once in a month. The 'Engineer' can reduce this frequency in case of emergency. The Contractor shall forward to the 'Engineer' the record of inspection and rectification every month. The contractor shall pay particular attention on the maintenance of building during rains and rainy season.

38.8 The Engineer may issue notice to the Contractor to carry out maintenance or remove defects, if any, notice in his inspection, or brought to his notice. The contractor shall remove the defects within the period specified in the notice and submit to the 'Engineer' a compliance report. By not giving notice, will not absolve the contractor from his responsibility.

38.9 In case the Contractor fails to make good the defects, the Executive

Engineer may employ any other person to make good such defects and all expenses consequent and incidental there to shall be borne by the Contractor.

38.10 The contract shall not be considered as completed until a defect liability-cum-maintenance certificate has been signed by the Executive Engineer and delivered to the contractor stating that the works have been completed and maintained to his satisfaction. The defect liability-cum-maintenance certificate shall be given by the SE on the recommendations of XEN. SE will send copy of such certificate to CE (Bldgs) alongwith CD.

38.11 Department shall not be responsible for any depreciation in the value of securities, not for any loss of interest thereon.

38.12 There will be double lock system for the cement store. One Key of the lock will be with the representative of the department and other key of the lock will be with the agency.

TECHNICAL SPECIFICATION FOR FIRE FIGHTING SYSTEM.

SPECIAL CONDITION FOR FIRE FIGHTING WORKS

1. SCOPE OF WORK

The scope of work covers the supply, installation, erection testing, commissioning of followings

a) Internal hydrant system.

b) External hydrant system.

c) Related piping with all accessories.

d) All type of valves, connections, headers.

e) Hydrant valves, hose reel, hose pipes, Fire hose cabinets etc.

f) Electrical and diesel operated Fire fighting pumps with all accessories.

g) Electrical works, Panels, cables and earthing.

h) Automatic sprinkler system with accessories.

i) Fire extinguishers.

j) All other allied and necessary equipment and accessories to complete the system up to the satisfaction of engineer-in- charge and for proper functioning of the entire system.

k) The system shall be maintained by the contractor at its cost by the contractor for a period of 3 years from issue of completion i.e The Defects Liability-cum-Maintenance period for the work and system is 3 years with all the cost borne by the contractor.

l) Contractor shall carry out successful mock drill and provide training to the user's staff and also educate them about fire fighting on quarterly basis for 3 years.

It will be the responsibility of the contractor to get all **approval and completion certificate** from the Local Fire Authorities without which the work will not be considered complete and will not be taken over. The contractor shall bear all the expenses required to obtain these certificates. The contractor has to prepare the necessary drawings and documents for the submission to fire authorities. Nothing extra will be paid for the work done and follow up by him in this regard. However, any statutory fees paid by the contractor shall be reimbursed by the client on depositing the proper receipt.

The complete installation of Fire Fighting System shall strictly confirm to the minimum specifications and guidelines given in NBC – 2005 (part IV), IS : 15105 for sprinkler system, IS : 13030 for external hydrant system, other relevant IS code of practice and Haryana PWD/ CPWD specifications (part V) amended up to date.

2. FEE AND PERMITS

It will be the responsibility of the contractor to get all approval and completion certificate from the Local Fire Authorities without which the work will not be considered complete and will not be taken over. The contractor shall bear all the expenses required to obtain these certificates. The contractor has to prepare the necessary drawings and documents for the submission to fire authorities. Nothing extra will be paid for the work done and follow up by him in this regard. However, any statutory fees paid by the contractor shall be reimbursed by the client on depositing the proper receipt.

3. GUARANTEES / DEFECT LIABILITY PERIOD

a) The contractor shall provide guarantee against manufacturing defects for 36 months from the date of actual completion or complete and satisfactory handing over to the Client whichever is later.

b) In the event of failure of any particular part of any equipment more than three times during the guarantee period. It shall not be repaired but the complete part shall be replaced by the contractor and the guarantee for this particular part shall be extended by one year from the date of last replacement.

c) In case it is found that the above mentioned failure is due to some connected part of the equipment, that part shall also be rectified or replaced by the contractor to avoid such failure. The guarantee for such replaced part shall be extended by one year from the date of replacement.

In the event of failure of any particular equipment which fails more than three times during the guarantee period as mentioned in clause-b above, the contractor shall replace at his own cost that equipment with another equivalent make as approved by the consultant/engineer-in-charge.

Manufacturer's/Contractor's guarantee as mentioned in clause-b above for such replaced equipment shall be kept valid at least for one year from the date of last replacement.

d) For electrical motors during the guarantee periods in case some important part of motor like starter winding shaft bearing squirrel cage, motor etc. become defective the guarantee shall cover their complete replacement and no repairs shall be allowed.

4. SITE CONDITIONS

It is assumed that before tendering the Contractor would have visited the site and familiarized himself with all the local conditions and means of transportation and communications. No claim of whatsoever nature would be entertained at a later date on account of the Contractor's ignorance of the local conditions.

5. WORKMANSHIP

The workmanship shall be best of its kind and shall conform to the specifications, as below or Indian Standard Specifications in every respect or latest trade practices and shall be subject to approval of the Architects/consultants. All materials and/or Workmanship which in the opinion of the Engineer is defective or unsuitable shall be removed immediately from the site and shall be substituted with proper materials and / or workmanship forthwith.

All electrical works shall be carried out only by those Contractors who are licensed by the concerned local authorities to execute this type of work.

6. RATES

The rates mentioned in the schedule of quantities / to be quoted for any particular item by the tenderer are / shall be inclusive of the cost of material, erection, connection, testing, labour, supervision, tools, plant, transportation, storage, insurance, excise duty, all taxes ,(but excluding GST) contingencies, breakage, wastage and all other sundries for execution at any level, depths, leads and height. Nothing extra shall be payable to him on these account.

The rate shall also be inclusive of cutting holes, making chases in RCC or brick, making good the same, providing sleeves for crossing of pipes, hangers for supports etc. No claim for extra would be entertained on this account.

7. DISCREPANCIES IN THE DRAWINGS

If there is any discrepancy due to in-complete description, ambiguity or omission in the drawings and other documents relating to this Contract found by the Contractor either before starting the work or during execution or after completion, the same shall be immediately brought to the attention of the Architect/Consultant and his decision would be final and binding on the Contractor.

8. MATERIALS

All materials to be supplied by the Contractor shall be new, best of their kind and shall confirm to the latest Indian standards. All packed items shall arrive at site in original packing only. Any items found defective or damaged shall be replaced by the Contractor at his own expenses.

9. INSTRUMENTS FOR MEASUREMENT AND TESTING

The Contractor shall provide, free of cost, all equipment, instruments, labour and all other allied assistance required by the Architect/Consultant or their representatives for measurement and testing of the works.

10. UP-KEEP OF THE SITE

It shall be the responsibility of the Contractor to clear away, from time to time all debris and excess material generated by the activities of his workers.

11. PROTECTION

All work shall be adequately protected, to the satisfaction of the Architect, so that the whole work is free from the damage throughout the period of construction up to the time of handing over.

Before handing over the work, the Contractor shall clean all elements of the complete installation, remove plasters, stickers, rust stains and all other foreign matter and leave every part in acceptable condition and ready for use to the satisfaction of the Architect/Consultant.

12. SAFETY CODES AND LABOUR REGULATIONS

(i) In respect of all labour employed directly or indirectly on the work for the performance of the fire fighting contractor's part of work, the contractor at his own expense, will arrange for the safety provisions as per the statutory provisions, B.I.S recommendations, BOCOW (building & other construction workers) act, workman's compensation act, Haryana PWD code and instructions issued from time to time. Failure to provide such safety requirements would make the tenderer liable for penalty for Rs. 20000/- for each violation. In addition the Engineer-in-charge, shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost incurred thereon from the contractor.

(i)

(ii) The contractor shall provide necessary barriers, warning signals and other safety measures while laying pipelines, cables etc. or wherever necessary so as to avoid accident. He shall also indemnify client against claims for compensation arising out of negligence in this respect. Contractor shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause. The client shall not be responsible for any accident occurred or damage incurred or claims arising there from during the execution of work. The contractor shall also provide all insurance including third party insurance as may be necessary to cover the risk. No extra payment would be made to the contractor due to the above provisions thereof.

13. WORKS TO BE ARRANGED BY THE CLIENT

Unless otherwise specified in the tender documents, the following works shall be arranged by the Client:

(i) Space for accommodating all the equipments and components involved in the work

(ii) One point metered Power supply and Water supply.

14. WORK TO BE DONE BY THE CONTRACTOR

Unless otherwise mentioned in the tender documents, the following works shall be done by the contractor and therefore, their cost shall be deemed to be included in their tendered cost- whether specifically indicated in the schedule of work or not :-

(i) Foundations for equipments including foundation bolts and vibration isolation spring/pads,
(ii) Suspenders, brackets and floor/ wall supports for suspending/supporting pipes.
(iii) Suspenders and/or cable trays for laying the cables.
(iv) Excavation and refilling of trenches in soil wherever the pipes are to be laid directly in ground, including necessary base treatment and supports.
(v) Sealing of all floor slab/wall openings to be provided by the Client for pipes and cables, from fire safety point of view, after laying of the same. (Client’s scope).
(vi) Painting of all exposed metal surfaces of equipments and components with appropriate colour.
(vii) Making openings in the walls/ floors/ slabs or modification in the existing openings wherever provided for carrying pipe line, cables etc.
(viii) All electrical works including cable/wires, earthing etc. beyond power supply made available by the contractor.
(ix) Making good all damages caused to the structure during installation, and restoring same to their original finish.
(x) Approval from local fire authorities as may be required as per local bye-laws. (The contractor's responsibility shall be limited to the work executed by him.)

15. COMPLETENESS OF THE TENDER, SUBMISSION OF PROGRAMME, APPROVAL OF DRAWINGS AND COMMENCEMENT OF WORK

Completeness of the tender :-

All sundry equipments, fittings, assemblies, accessories, hardware items, foundation bolts, supports, termination lugs for electrical connections, cable glands, junction boxes and all other items which are useful and necessary for proper assembly and efficient working of the various equipments and components of the work shall be deemed to have been included in the tender, irrespective of the fact whether such items are specifically mentioned in the tender or not.

Submission of programme :-

Within fifteen days from the date of receipt of the letter of award, the successful tenderer shall submit his programme for submission of drawings, supply of equipment, installation, testing, commissioning and handing over of the installation to the Engineer-in-Charge. This programme shall be framed keeping in view the building progress and the priority fixed by Engineer in-charge. Items like piping etc. that directly affect the building progress shall be given priority. Hose pipes, branch pipes, first aid hose reel pipes shall be supplied just before commissioning the system.

Submission of Shop Drawings:-

The contractor shall submit the drawings to the Engineer-in-Charge as per para of “drawings for approval on award of work” for approval before start of work.

Commencement of Work:-

The contractor shall commence work as soon as the drawings submitted by him are approved either in full or in part as the case may be.

16 CO-ORDINATION WITH OTHER AGENCIES

The contractor shall co-ordinate with all other agencies involved at the site of work so that the work of other agencies is not hampered due to delay in his work. Piping, cabling or any other work, which directly affect the progress of work of other agencies, shall be given priority.

18 CARE OF THE BUILDING

Care shall be taken by the contractor during execution of the work to avoid damage to the building. He shall be responsible for repairing all such damages and restoring the same to the original finish at his cost. He shall also remove all unwanted and waste materials arising out of the installation from the site of work from time to time.

19 COLOUR SCHEME FOR THE EQUIPMENT AND COMPONENTS.

The entire metal work related to fire fighting above ground level shall be painted with red colour shade No. 536 of IS: 5.

20 INSPECTION AND TESTING

Initial Inspection andtesting

(i) Initial inspection of materials and equipments at manufacturer's works shall be done by the Engineer-in-Charge or his representative. For item/ equipment requiring initial inspection at manufacturer's works, the contractor will intimate the date of testing of equipments at the manufacturer's works before dispatch. The contractor shall give sufficient advance notice regarding the dates proposed for such tests to the client's representative(s) to facilitate his presence during testing. The Engineer-in-charge at his discretion may witness such testing. Material / Equipments will be inspected at the manufacturer/ authorized dealer's premises, before dispatch to the site by the contractor.

(ii) The client also reserves the right to inspect the fabrication job at factory and the successful tenderer has, to make arrangements for the same.

(iii) The materials duly inspected by Engineer-in-Charge or his authorized representative shall be dispatched to site by the contractor.

(iv) No additional payment shall be made to the contractor for initial inspection/testing at the manufacturer's works by the representative of the Engineer-in-Charge. However, the client will bear the expenses of its representative deputed for carrying out initial inspection/testing.

Final Inspection and testing:

Final Inspection and testing will be done by the Engineer-in-Charge or his representative.

The necessary test certificates shall be submitted before dispatch of material.

The installation will be offered for inspection by local bodies (Chief Fire Officer). The contractor or his representative shall attend such inspection of the Chief Fire Officer, extend all test facilities as are considered necessary, rectify and comply with all observations of the Chief Fire Officer which are part of the agreement and arrange for obtaining necessary clearance certificate in favour of the client. In case the contractor fails to attend the inspection and make desired facilities available during inspection, the client reserves the right to provide the same at the risk and cost of the contractor and impose penalty for the same. The installation will be accepted by the client only after receiving clearance from Chief Fire Officer for the work executed by the contractor under the agreement.

21 SAFETY MEASURES

All equipments shall incorporate suitable safety provisions to ensure safety of the operating personnel at all times. The initial and final inspection reports shall bring out explicitly the safety provisions incorporated in each equipment.

22 TENDER DRAWINGS, DRAWINGS FOR APPROVAL AND AS BUILT DRAWINGS

Tender Drawings
The drawings appended with the tender documents are intended to show the areas for various equipments, tentative pipe routes. The equipments offered shall be suitable for installation in the spaces shown in these drawings.

Drawings for approval on award of the work / shop drawings
The contractor shall prepare and submit following drawings and get them approved from the Engineer-in-charge before the start of the work. The approval of drawings however does not absolve the contractor of his responsibility to supply the equipments/materials as per agreement. In case of any contradiction between the approved drawings and agreement the decision of the Engineer –in-Charge shall be final and binding on the contractor.

(a) Lay out drawings of the equipments to be installed in pump room and terrace.
(b) Drawings showing the detail of erection of entire equipments including their foundations.
(c) Fire drawings showings the layout of entire piping, dia. and length of pipes, hydrant, air vessel, valves and isometric drawings showing connections to various equipment.

(a)

(b) Sprinkler drawing indicating layout and sizes of pipe, location of valves, sprinklers etc.
(c) Electrical wiring diagrams for all electrical equipments and controls including the sizes and capacities of the various cables and equipments.
(d) Dimensioned drawings of all electrical and control panels,
(e) Drawings showing details of supports for pipes, cable trays etc.
(f) Any other drawings relevant to the work.

As built Drawings

Three sets of the following laminated drawings shall be submitted by the contractor while handing over the installation to the Client. Out of this one of the sets shall be laminated on a hard base for display in the fire control room. In addition one set soft copy will be given on compact disc.

(a) Installation drawings giving complete details of all the equipments, including their foundations.

(b) Fire drawings giving sizes and lengths of all the pipes and the sizes and locations of all types of valves, and including isometric drawings for the entire piping including the pipe connections to the various equipments.

(c) Line diagram and layout of all electrical control panels giving switchgear ratings and their arrangement, cable feeder sizes and their layout.

(d) Control wiring drawings with all control components and sequence of operations to explain the operation of control circuits.

(e) Schematic diagrams.

DOCUMENTS TO BE FURNISHED ON COMPLETION OF INSTALLATION

There sets of the following documents shall be furnished to the client by the contractor on completion of work :-

(a) As built drawings as mentioned above

(b) 3 sets of manufacturer's technical catalogues of all equipments and accessories.

(c) Operation and maintenance manual of all major equipments, detailing all adjustments, operation and maintenance procedure.

(d) Approval of drawing/scheme by District fire officer.

(e) The contractor/ Agency should arrange approval of fire scheme and fire NOC Certificate from fire authority.

(e) The contractor/ Agency should arrange approval of fire scheme and fire NOC Certificate from fire authority.

(f) The contractor shall submit the ISI certificate of all the firefighting equipments. Test certificates of Manufacturing company, ISI and explosive certificate with Serial number of Carbon dioxide type fire extinguishers to the department.

INSTRUCTION MANUAL / TRAINING

The contractor shall furnish in 3 copies details instruction and operation manual to the consultant/engineer-in-charge. The contractor shall guide owner's / client's staff for operation and maintenance of the entire installation for at least fifteen days.

The manual shall contain detailed technical data and drawings for each equipment installed, the erection, testing, operation and maintenance procedures, spare parts manual and recommended spares for 3 years period of maintenance of each equipment.

TECHNICAL SPECIFICATION

FIRE PUMPS

1. SCOPE

This covers the general requirements of water pumps for main fire pump and jockey pump.

2. TYPE

The pumps shall be centrifugal type direct driven with a 3 phase, 415 V ± 10%, 50 Hz., A.C. motor. The standby fire pump shall be driven by diesel engine. The pumps may be either of horizontal split casing (HSC) type with operating speed 1500 / 2900 rpm, or end suction type / solid casing or multi stage with operating speed not exceeding 3000 rpm as specified in the BOQ.

3. RATING

The main fire pumps shall be suitable for continuous operation in the system. The jockey pumps shall be suitable for intermittent operation to built up pressure in the system on account of leakage. The head and discharge requirements shall be as specified in the tender documents. The head shall be suitable for the system and shall take into consideration the pressure drops across the various components in the water circuit as well as the frictional losses.

Pump shall be capable of discharging not less than 150 percent of the rated discharge at a head of not less than 65 percent with the rated head. The shut off head shall not exceed 120 percent of the rated head.

4. MATERIAL AND CONSTRUCTION

(i) The centrifugal pumps shall conform to IS 1520.

(ii) The pump casing shall be of heavy section close grained cast iron and designed to withstand 1.5 time the working pressure. The casing shall be provided with shaft seal arrangement as well as flanges for suction and delivery pipe connections as required.

(iii) The impeller shall be of bronze. This shall be shrouded type with machined collars. Wear rings, where fitted to the impeller, shall be of the same material as the impeller. The impeller surface shall be smooth finished for minimum frictional loss. The impeller shall be secured to the shaft by a key.

(iv) The shaft shall be of stainless steel and shall be accurately machined. The shaft shall be balanced to avoid vibrations at any speed within the operating range of the pump.

(v) The shaft sleeve shall be of bronze or gunmetal.

(vi) The bearings shall be ball or roller type suitable for the duty involved. These shall be grease lubricated and shall be provided with grease nipples/cups. The bearings shall be effectively sealed against leakage of lubricant or entry of dust or water.

(vii) The shaft seal shall be mechanical type, so as to allow minimum leakage. A drip well shall be provided beneath the seal.

(viii) The pumps shall be directly coupled to the motor/diesel engine shaft through a flexible coupling protected by a coupling guard.

(ix) The pump and motor / diesel engine shall be mounted on a common base plate fabricated from mild steel section. The base plate shall have rigid, flat and true surfaces to receive the pump and motor/diesel engine mounting feet. The pump will be perfectly aligned with the motor/engine so as to avoid any vibration during operation.

5. ACCESSORIES

Each pump shall be provided with the following accessories: -

(a) Butterfly valves on suction and discharge (If positive suction is not provided butterfly valve at suction is not to be provided)

(b) Reducers, as may be required to match the sizes of the connected pipe work.

(c) Non-return valve at the discharge.

(d) Pressure gauge at discharge side between pump and the non-return valve.

6. INSTALLATION

(i) The pump and motor assembly shall be mounted and arranged for ease of maintenance and to prevent transmission of vibration and noise to the building structure or to the pipe work.

(ii) The pump and motor assembly shall be installed on suitable RCC foundation. The length and width of the foundation shall be such that 100 mm. space is left all around the base frame. The height of foundation shall be so decided that the total weight of foundation block is 1.5 times the operating weigh of the pump assembly. The foundation shall be isolated from the floor by vibration isolating pads. Angle iron frame of size 35 mm x 35 mm x 3 mm shall be provided on the top edges of the foundation.

(iii) More than one pump and motor assembly shall not be installed on a single base or cement concrete block.

(iv) the suction/discharge pipe shall be independently supported and their weight shall not be transferred to the pump. It should be possible to disconnect any pump for repairs without disturbing the connecting pipe line.

(v) The suitable clearance have to be provided around the fire pumps as per drawings.

(vi) Sufficient space is to be left in front for the radiator of diesel engine for free discharge of hot air. Arrangement for discharge hot air to outside the pump house shall be provided so that hot air does not stagnate in the pump house.

7. OPERATING CONDITIONS

Fire pumps shall operate on drop of pressure in the mains header as given below. The pump operating sequence shall be arranged in such a manner to start the pump automatically but should be capable of being stopped manually by stop push buttons only.

Operating conditions for fire hydrant and sprinkler pumps

	Operating Pressure “a” Kg /Sqcm	Cut in	Cut out
a.	Jockey pump (Sprinkler system)	“a” – 1.0 Kg/Sqcm	“a” Kg/Sqcm
b.	Jockey pump (Hydrant system)	“a” – 1.5 Kg/Sqcm	“a” Kg/Sqcm
c.	Sprinkler pump - duty (Electric)	“a” – 2.0 Kg/Sqcm	Manual
d.	Hydrant pump - duty (Electric)	“a” – 2.5 Kg/Sqcm	Manual
e.	Hydrant / Sprinkler - Standby (Diesel)	“a” – 3.0 Kg/Sqcm	Manual

Notes On Starting System

- Jockey pumps shall start and stop through pressure switch automatically.
- Jockey pump shall stop when the main pump starts.
- Main Fire pump shall start automatically on fall of pressure but stopping shall be manual.
- Diesel Fire pump shall start automatically on further fall of pressure but stopping shall be manual.
  The 'Cut in' and 'Cut out' pressures shall be reconfirmed at detailed design stage.

DIESEL ENGINE FOR FIRE PUMP (IF PROVIDED)

1. SCOPE

This covers the details of requirements of a diesel engine for main fire pump to act as standby.

2. GENERAL

The diesel engine shall be suitable for automatic operation complete with necessary automatic starting gear, battery system and shall be complete with all accessories. Both engine and pump shall be assembled on a common bed place, fabricated from mild steel channel.

3. DRIVE

The pump shall be only direct driven by means of a flexible coupling. Coupling guard shall be provided. The speed shall be 1500 to 2300 RPM.

4. DIESEL ENGINE

a) Environment conditions- The engine shall be suitable to operate under theconditions of environment at site

b) Engine Rating- The engine shall be multi cylinder/vertical 4 stroke cycle, watercooled, developing suitable HP at the operating speed specified to drive the fire pump. Continuous capacity available for the load shall be exclusive of the power requirement of auxiliaries of the diesel engine, and after correction for altitude, ambient temperature and humidity for specified environment conditions. The engine rating shall be suitable to drive the pump at 150 percent of its rated discharge with at least 65 percent of rated head. The engine shall have 10% overload capacity for one hour in any period of 12 hours continuous run.

The engine shall be suitable for cold starting for which suitable heaters shall be provided in lubricating oil.
The engine shall develop full load within 15 seconds from the receipt of signal to start.
The diesel engine shall conform to BS 649/IS 1601/IS 10002, amended upto date.

c) Engine Accessories- The engine shall be complete with following accessories.

(i) Fly wheel dynamically balanced.

(ii) Direct coupling for pump and coupling guard.

(iii) Radiator with hoses, fan, water pump, drive arrangement and guard.

(iv) Air cleaner dry type.

(v) Fuel service tank with necessary pipe work.

(vi) Pump for lubricating oil and Lub.oil filter.

(vii) Elect. starting battery 12 V /24 V with 2 Nos. battery.

(viii) Exhaust silencer with necessary pipe work.

(ix) Speed Governor.

(x) Instrument panel housing all the gauges, including Tachometer, hour meter and starting switch with key (for manual starting).

(xi) Necessary safety controls.

d) Cooling System- The engine shall be radiator water cooled. The radiator assembly shall be mounted on the engine. The radiator fan shall be driven by the engine as its auxiliary with multiple fan belts. When half the belts are broken, the remaining belts shall be capable of driving the fan. Cooling water shall be circulated by means of an auxiliary pump of suitable capacity driven by the engine in a closed circuit.

e) Fuel System- The fuel, system shall be gravity fed from the fuel tank to the enginedriven fuel pump. The engine fuel tank shall be mounted either adjacent to the engine are suitably wall mounted on brackets. The fuel filter shall be suitably located to permit easy servicing.

All fuel piping to the engine shall be with M.S. 'C' class pipe with flexible hose connections where required. Plastic tubing shall not be permitted.

The fuel tank shall be of welded steel construction (2 mm. thick) and of capacity sufficient to allow the engine to run on full load for at least 2 hours. The tank shall be complete with necessary floor mounted supports, level indicator (protected against - mechanical injury) inlet, outlet, overflow connections and drain plug and piping to the engine fuel tank. The outlet should be so located as to avoid entry of any sediments in to the fuel line to the engine.

f) Lubricating Oil System- Forced feed Lubricating Oil system shall be employed forpositive lubrication. Necessary Lub. oil filters shall be provided, located suitably for convenient servicing.

g) Starting System- The starting system shall comprise necessary batteries 12 Volts /24 Volts, starter motor of adequate capacity and axle type gear to match with the toothed ring on the fly wheel. Suitable protection to protect starting motor from excessively long cranking runs shall be suitably integrated with engine protection system.

The capacity of the battery shall be suitable for meeting the needs of the starting system.

The battery capacity shall be adequate for 10 consecutive starts without recharging with cold engine under full compression.

Three attempt starting facility shall be provided. If the engine fails to start after third attempt, the engine shall be locked out and suitable audio-visual alarm shall be giver to indicate engine failure.

The scope shall cover all cabling, terminals, initial charging etc

h) Exhaust System- The exhaust system shall be complete with residential silencersuitable for outdoor installation and silencer piping shall be extended up to 1 m above the nearest boundary wall, outside pump house duly insulated with 50 mm. thick glass wool and 1.0 mm. thick aluminum sheet cladding.

i) Engine shut down mechanism- This shall be manually operated and shall returnautomatically to the starting position after use.

j) Governing System- The engine shall be provided with an adjustable governor tocontrol the engine speed within 5% of its rated speed under all conditions of load upto full load. The governor shall be set to maintain rated pump speed at maximum pump load.

k) Engine instrumentation - Engine instrumentation shall include the following:-

(i) Lub. oil pressure gauge.

(ii) Lub. oil temperature gauge.

(iii) Water temperature gauge.

(iv) Tachometer.

(v) Hour meter.

The instrumentation panel shall be suitably mounted on the engine.

l) Engine protection devices - Following engine protection and automatic shut downfacilities shall be provided:

(i) Low lub. oil pressure.

(ii) High cooling water temperature.

(iii) High lub. oil temperature.

(iv) Over speed shut down.

m) Pipe work- All pipe lines with fittings and accessories required shall be provided forfuel oil, lub.oil and exhaust systems.

n) Anti vibration mounting- Suitable vibration mounting duly approved by engineer-in-charge shall be employed for mounting the unit so as to minimize transmission of vibration to the structure.

o) Battery Charger- Necessary float and boost charger shall be incorporated in thecontrol section of power and control panel, to keep the battery under trim condition. Voltmeter to indicate the state of charge of the batteries shall be provided.

p) The engine installation shall be approved by the representative of engine manufacturer (who shall carry out after sales service under AMC).

PIPE WORK

1. SCOPE

This covers the requirements of pipe work in fire fighting installations. The work will be executed as per Haryana PWD B&R Specifications as per latest amendment. In case of any discrepancy the Bureau of Indian Standards shall be followed and then CPWD specifications shall be followed. These will be in order of preference as mentioned below:

i) Haryana PWD (B&R) Specifications.
ii) Bureau of Indian Standards.
iii) CPWD Specifications.

In case, any item is not covered by all three above, then the decision of Engineer-in-Charge shall be final.

2. PLUMBING DESIGN

Pipe sizes shown in tender documents are purely for contractor's guidance. The contractor shall be responsible for selection of sizes as per detailed engineering to be done by him. Plumbing design

to be done by the contractor shall incorporate the following:-

(i) (a) Butterfly valves shall be provided at suction and delivery sides of pumps. (If positive suction is not provided valve at suction is not to be provided).

(b) External hydrant

(c) Fire service connection/inlet.

(d) Test valve.

(e) Drain connections.

(ii) For testing the system healthiness and automatic operation on daily basis, one test pipe with butterfly valve shall be provided in common discharge header. For avoiding wastage of water, this pipe shall discharge water in the tank.

(iii) Non return valve shall be provided at the delivery of each pump and fire service inlet. This shall be of swing type.

(iv) Air Cushion Tank and Air release valves with ball valve shall be provided in the piping system for venting trapped air.

(v) Fire drawings showing the sizes of pipe, valves, layout and other details shall be prepared and shall be got approved from the Engineer-in-Charge before the execution of the plumbing work.

4. PIPE MATERIALS

(i) Pipes shall be of the following materials.

(a) Mild steel heavy class (C-class) conforming to IS: 1239 for sizes upto 150 mm. For sprinkler drain pipe the pipe class will be G. I. medium duty (B-class)

(b) Welded black steel pipe,conforming to IS: 3589, for sizes greater than 150 mm. These pipes shall be factory rolled and fabricated from minimum 6mm thick M.S. Sheet for pipes upto 250 mm dia

(ii) Cadmium plated steel nuts/bolts/washers shall be used.

5. PIPE JOINTS

i) For 50 mm dia and above pipe size, Electric welding joints with V groove shall be provided in the M.S.pipe work. For up to 40 mm dia, threaded joints by Teflon tape shall be provided in the M.S. pipe work. Flanged joints to be provided for connections to valves, pumps, vessels etc. and also on straight lengths at suitable points to facilitate erection and subsequent maintenance.

ii) M.S.pipe laid at such locations shall be provided anti-corrosive treatment.

iii) Mild steel flanges shall be in accordance with Table - 17 of IS : 6392 i.e. "Plate Flanges for Welding" and flange thickness shall be as under. Gasket thickness shall not be less than 3 mm.

Pipe dia	Flange Thickness	No. of holes
200 mm.	24 mm.	12
150 mm and 125 mm.	22 mm.	8
100 mm and 80 mm.	20 mm.	8
65 mm.	18 mm.	4
40 mm and below.	16 mm.	4

All hardware items such as Nuts, Bolts, Washers shall be of appropriate size. Washers shall be used on both sides of the bolt.

6. SLUICE AND BUTTERFLY VALVES

Sluice valve conforming to IS:14846 or butterfly valve conforming to IS: 13095 shall be provided. All valves shall be suitable to with-stand the pressure in the system and rating shall be as per BOQ; All valves shall be right handed (i.e. handle or key shall be rotated clock wise to close the valve), the direction of opening and closing shall be marked and an open/shunt indicator fitted.

(i) The material of valves shall beas under : Body - Cast iron / caststeel

Disc - Stainless Steel
Seat - EPDM

(ii) Non return valves shall be swing check type in horizontal run and lift check type in vertical run of pipe or dual plate type as per BOQ.

7. STRAINERS

Stainless steel strainers shall have 1.6 mm thick screen with 3 mm perforations.

8. ORIFICE PLATE

Orifice plate shall be made of 6 mm. thick stainless steel and shall have an identification tag projecting beyond any flange between which it is clamped. The orifice shall be plain central hole without burs and diameter not less than one-half of the internal diameter of the pipe to which it is fitted.

9. INSTRUMENTS

(i) Pressure gauge of appropriate range and 150 mm. dia size shall be provided.

(ii) The pressure gauge shall be duly calibrated before installation and shall complete with shut off valve.

9A. AIR CUSHION TANK

Air cushion shall be provided on top of each riser, and shall be fabricated out of 8 mm thick M. S. Sheet. The ends shall be dished. This shall be of 250 mm. dia, 1.2 m. high and installed vertically on suitable legs. The legs shall be provided with M. S. Plate of size 75mm x 75 mm x 5 mm at the bottom so that the legs do not puncture the roof. The legs shall be grouted in CC foundation. Flange connection shall be provided for connection with pipe. Air release valve and pressure gauge with shut off valve shall be provided. The air cushion tank shall be tested at 25 kg/cm2 pressure before installation.

10. PRESSURE VESSEL TANK

Pressure vessel shall be provided inside fire pump house connected to main header of fire pumps and shall be fabricated out of 10 mm thick M. S. Sheet. The ends shall be dished. This shall be of 450 mm. dia, 2 m. high and installed vertically on suitable legs. The legs shall be provided with M. S. Plate of size 75 mm x 75 mm x 5 mm at the bottom. The legs shall be grouted in CC foundation. Flange connection shall be provided for connection with header pipe. Air release valve and pressure gauge with shut off valve shall be provided.

The pressure vessel tank shall be tested at 25 kg/cm2 pressure before installation. Suitable pressure switches shall be installed for automatic operation of fire pumps.

11. INSTALLATION

(i) The installation work shall be carried out in accordance with the detailed drawings prepared by the contractor and approved by the Engineer-in-charge.

(ii) In pipe above ground level, expansion loops or joints shall be provided to take care of expansion or contraction of pipes due to temperature changes.

(iii) Tee-off connections shall be through equal or reducing tees, otherwise ferrules welded to the main pipe shall be used. Drilling and tapping of the walls of the main pipe shall not be resorted to.

(iv) Open ends of piping shall be blocked as soon as the pipe is installed to avoid entrance of foreign matter.

(v) Piping installation shall be supported on or suspended from structure adequately. The contractor shall provide, clamps, hangers etc. in accordance with Para under pipe support

Proper lines and levels shall be maintained while installing exposed pipes.

(vi) The Spacing of fire pipe supports for sprinkler / clevis hanger shall not be more than that specified below: -

Nominal Pipes Diameter (meter)	Spacing between supports (meter)	Hanger rod diameter (mm)
Up to 25		
32 to 50		
65 to 80		
100		
150		
200 & above		

supports shall be provided at the bends and at heavy fittings like valves to avoid undue stress on the pipes.

(vii) Anti vibration pads, springs or liners of resilient and non-deteriorating material shall be provided at each support, so as to prevent transmission of vibration through the supports.

(viii) Pipe sleeves of diameter larger than the pipe by least 50 mm shall be provided wherever pipes pass through walls and the annular spaces shall be filled with felt and finished with retaining rings.

(ix) (a)Vertical risers shall be parallel to walls and column lines and shall be straight and in plumb. Risers passing from floor to floor shall be supported at each floor by MS angle with clamp as per specification of pipe support

(b) The space in the floor cut outs around the pipes work shall be closed using cement concrete (1:2:4 mix) or steel sheet, from the fire safety considerations, taking care to see that a small annular space is left around the pipes to prevent transmission of vibration to the structure.

(c) Riser shall have suitable supports at the lowest point.

(x) Where mild steel pipes are to be buried under ground the same shall be treated in accordance with Para under anti corrosive treatment before laying. The top of the pipes shall be not less than 100 cms. below the ground level. Where this is not practicable, permission of the Engineer-in-charge shall be obtained for burying the pipes at lesser depth. Masonary or C.C. blocks shall be provided for supporting the pipes at interval in accordance with Para (vi) above. After the pipes have been laid, the trench shall be refilled with the excavated soil in layers of 20 cm. and rammed and any extra soil shall be removed from the site of work by the contractor.

(xi) Underground pipe shall be laid at least 2 m. away from the face of the building preferably along the roads and foot paths. As far as possible laying of pipes under road, pavement and large open spaces shall be avoided. Pipes shall not be laid under building and where unavoidable, these shall be laid in masonry trenches with removable covers.

(xii) To facilitate detection of leak and isolation of defective portion of pipe, valves shall be provided in under ground pipe at suitable locations. As far as possible such valves shall be provided over ground. If the valves are to be provided below ground, suitable masonry chamber with cover plate shall be provided. Locations where vehicles can pass shall be avoided for provision of valve below ground.

(xiii) Pipe over ground shall be painted in red colour shade No 536 of IS : 5 Suitable identification shall be provided to indicate the run of under ground pipe where the route of underground pipe cannot be ascertained from the location of yard hydrant/isolating valves.

(xiv) It shall be made sure that proper noiseless circulation is achieved in the system. If proper circulation is not achieved due to air-bound connections, the contractor shall rectify the defective connections. He shall bear all the expenses for carry out the above rectification, including the tearing up and refinishing of floors, walls etc. as required.

(xv) Thrust blocks shall be installed for underground pipe line wherever there is a

change in the direction / size of the pipe line or the pressure line diagram, or when the pipe line ends at a dead end and at locations determined by the Engineer-in-Charge. If necessary, thrust blocks may be constructed at valves also. Thrust blocks (1:2:4 cement concrete) shall be constructed taking into account the pipe size, water pressure, type of fitting, gravity component shell when laid on slopes and the type of soil.

12. PRESSURE TESTING

(a) All piping shall be tested to hydrostatic test pressure of at least the 1.5 times of operating pressure, but not less than 15 kg./sq.cm. for a period not less than 24 hours. All leaks and defects in joints revealed during the testing shall be rectified to the satisfaction of the Engineer-in-Charge.

(b) Piping repaired subsequent to the above pressure test shall be re-tested in the same manner.

(c) System may be tested in sections and such sections shall be securely capped.

(d) pressure gauges may be capped off during pressure testing of the installation.

16.1 ANTI-CORROSIVE PROTECTION ON UNDER GROUND PIPE

Corrosion protection tape shall be wrapped on M. S. Pipes to be buried in ground. This corrosion protection tape shall comprise of coal tar/asphalt component supported on fabric of organic or inorganic fiber and minimum 4 mm. thick and conform to requirement of IS : 10221-Code of practice for coating and wrapping of underground mild steel pipe line. Before application of corrosion protection tape all foreign matter on pipe shall be removed with the help of wire brush and suitable primer shall be applied over the pipe thereafter. The primer shall be allowed to dry until the solvent evaporates and the surface becomes tacky. Both primer and tape shall be furnished by the same manufacturer. Corrosion protection tape shall then be wound around the pipe in spiral fashion and bounded completely to the pipe. There shall be no air pocket or bubble beneath the tape. The overlaps shall be 15 mm. and 250 mm. shall be left uncoated on either end of pipe to permit installation and welding. This area shall be coated in situ after the pipe line is installed. The tapes shall be wrapped in accordance with the manufacturer's recommendations. If application is done in cold weather, the surface of the pipe shall be pre- heated until it is warm to touch and traces of moisture are removed and then primer shall be applied and allowed to dry.

PIPE SUPPORTS

For installing pipes vertically or horizontally inside the building standard pipe supports of reputed make shall be used. Following supports shall be used.

(i) Split pipe support clamps with rubber lining for vertical, horizontal and roof hanging.

(ii) Clevis Hangers for horizontal supports to adjust varying heights.

(iii) Sprinkler Hangers for horizontal supports for pipes from 15 mm dia to 150 mm dia.

Fasteners and fully threaded rods shall be used for installing the pipe supports. The sizes

of pipe supports and installation shall be in accordance with manufacturers recommendations.

For pipes of size 100 mm and above, with the prior approval of Engineer-in-Charge, 50x50x6 mm MS angle iron with 'U' cIamp with dash fastener may be used for supporting horizontal pipe from ceiling.

14. MEASUREMENT

Measurements of plumbing work shall be on following basis:-

(a) Piping shall be measured along the centre line of installed pipes including all pipe fittings and accessories but excluding valves and other items for which quantities are specifically indicated in the schedule of work. No separate payment shall be made for fittings and accessories.

(b) The rates for piping work shall include all wastage allowances, flanges pipe supports, hangers, excavation, refilling, testing, nuts and check nuts, vibration isolators, suspension where specified or required, and any other item required to complete the piping installation. None of these items will be separately measured and paid.

FIRE FIGHTING ACCESSORIES

1. SCOPE

This chapter covers landing valves, first aid hose reels, hose pipes, branch pipes etc, which are vital tools for fire fighting.

2. LANDING VALVE

Landing valves are provided in the system for connection of hose pipes for discharging water for fighting fire by brigade or trained personnel.

a) The landing valves shall be as per I.S.: 5290

b) The landing valves are of single and double head outlet types as per BOQ.

c) Material of construction.

(i) Body outlet and cap etc	stainless steel (as per BOQ)
(ii)Spindle	stainless steel for stainless steel body
(ii)Hand wheel	Mild steel or cast iron.

Installation

i) The landing valve shall be fitted to a T connection of the riser at the landing in such a way that the valve is in the centre of the internal hydrant opening and at a height of 1 M. from floor level.

ii) The valve base shall be vertical and the valve facing out side. There should be no hindrance in operation of the handle.

3. FIRST AID HOSE REEL

First Aid Hose Reel is meant for delivering small quantity of water in early stage of fire and can be operated even by untrained personnel, and thus provides a most effective fire fighting facility. It consists of a length of 20 mm (nominal internal) diameter hose tubing wraped around a reel with water inlet pipe, stop valve and shut off nozzle. The entire assembly is mounted on a MS wall bracket and can swing 180 degree. The water inlet is connected to the riser pipe by means of 40 mm socket and 20 mm dia valve. The hose tube can be pulled out easily for the purpose of discharge of water on fire.

First aid hose reel shall be as per IS – 884. The coupling, branch pipe and nozzle shall be as per IS:8090.

d) Material of Construction:-

(i) Hub and sides : Aluminium Alloy/ Mild steel/ Aluminium sheets
(ii) Wall Bracket : Cast iron / Mild steel
(iii) Hose tube (20 mm) : high pressure rubber braided hose pipe as per IS : 444
(iv) Nozzle with branch pipe : SS (as per BOQ)

Normally M S construction is used. Other material may be used in areas having corrosive atmosphere.

c) The water flow rate shall not be less than 24 lpm and the range of jet shall be not less than 6 meter.

d) Installation

First aid hose reel are installed in suitable size MS cabinet as per BOQ and shall be pained red as per colour shade No. 536 of IS:5. The size & location of the cabinet shall be such that it does not form an obstruction in passage/escape route.

The length of hose tube shall be 30 meter.
There shall be no obstruction in swinging the hose reel and should be installed above landing valve where provided.
The inlet valve shall be at 900 mm above floor level.
Hose reel bracket should be firmly grouted on the wall with the help of rawl bolts / fastener.

4. FIRE HOSE DELIVERY COUPLING, BRANCH PIPE AND NOZZLES

These are important accessories used for fire fighting operations.

Material of Construction - Stainless Steel (as per BOQ).

a) Delivery Hose Coupling's

The delivery hose coupling consist of male half coupling and female half coupling. Groves are provided on outer side on both coupling for binding hose pipes with wires. In female coupling spring loaded cam tooth is provided for holding male half coupling in position. Male half coupling and female half coupling are provided on both sides (i.e. on one side male and on other side female) of hose pipes. Two or more pipes can be joined together with the help of these couplings instantaneously, Sizes:- 63 mm nominal.

b) Branch Pipe and Nozzle:-

Branch pipes with nozzle are mounted at the end of hose pipe. Branch pipe is properly finished and free from sharp edges. During operation, a fireman has to hold the branch pipe. One end of branch pipe is fixed with hose coupling and the other end is threaded to fit the nozzle.
Nozzle is tapered pipe with one end threaded internally which is fixed on branch pipe. The size of other end i.e. nozzle shall be 15 mm. (nominal internal diameter).

5. FIRE SERVICES INLET AND FIRE SERVICE CONNECTION

a) These are provided for connection of fire service hose pipes for either directly pressurizing the system with their pumps or filling water in the tank from a distance. In the first case non return valve with butterfly valve shall be provided for holding water pressure. Fire service inlet shall be provided with each wet riser/down comer and the ring main. These are fixed to 150 mm dia. pipe and located in MS box made of 2 mm thick mild steel with openable glass cover.

b) These shall be as per IS: 904.

Material of Construction - Cast iron body

6. HOSE PIPES

Hose pipes shall be rubber lined woven jacketed and 63 mm in diameter. They shall conform to Type A (Re-inforced rubber lined) of IS:636. They shall be flexible and capable of being rolled. Length of hose pipe will be 15 m.
The hose pipe shall be complete with male and female coupling at the ends.
Besides keeping hose pipe with internal and yard hydrant, spare hose pipes along with branch pipes shall be kept in fire control room/pump room.

AUTOMATIC SPRINKLER SYSTEM

1. SCOPE

This covers the general requirement of selection, design, installation, testing commissioning and maintenance of automatic sprinkler system for fire fighting buildings used for other than industrial and storage purpose.

References: For additional information regarding definitions, planning, design, hydraliccalculations, tables etc. following documents are to be referred to.

(i) IS: 15105:- Design and Installation of Fixed Automatic Sprinkler, Fire Extinguisher Systems- Code of Practice.

(ii) IS: 9972:- Specification for Automatic Sprinkler Heads for Fire Protection Service.

2. GENERAL SPECIFICATION

a) The sprinkler heads are to be fixed into heavy duty (C Class) steel pipes, conforming to 1S:1239. The size of pipe will vary from 25 mm to 150mm to suit the hydraulics of the system and in conformity with the guide lines laid down under IS : 15105-2002. The System shall conform to above code for the installation of sprinkler systems in general for 'Moderate Hazard'

category-in respect of design, density and spacing of sprinkler heads for basement and parking areas. Whereas "Light Hazard" category is to be used for residential apartment floors. Some important points of the system are mentioned below.

b) The entire system shall be capable of with standing an test pressure of 15 Kg / Sq.cm. or the 1.5 times of operating pressure whichever is higher. All pipe fittings shall be malleable cast iron or ductile iron. Pipe of 40mm dia and less shall have screwed joints.

c) Reduction in pipe sizes shall not be made by use of bushings. All piping shall be done by means of V groove welding, screwed & flanged jointing as per codes.

d) Pipe hanger and clamps: Sprinkler system piping attached to structural members of the building, suitable type of hangers of steel bars or angles painted with zinc chromate and synthetic enamel paint of approved shade to protect from corrosive conditions. Due care shall be taken that sprinklers are not applied with paint at the time of applying paint to piping and fittings.

e) Sprinkler System Test Pipe: A test pipe of 25 mm dia in size with a drain valve to test alarm device shall be provided.

f) All control, drain, test and alarm valves shall be provided with signs to identify their purposes, functions, direction of flow the satisfaction of the Engg-in-charge.

g) Testing: Before connecting sprinkler risers for testing, all piping and devices under pressure including yard piping and fire hydrant connections shall be tested hydrostatically for strength and leakage with pressure not less than 15 Kg/Sq.cm or 1.5 times the working pressure whichever is higher for 24 hour.

3. <u>QUARTZOID BULB AUTOMATIC SPRINKLER</u>

a) Sprinkler heads shall be made of gun metal / quartzoid bulb sufficiently strong, in compression to withstand any pressure, surge or hammer likely to occur in the system. The yoke & body shall be made of high quality gun metal with arms streamlined to ensure minimum interference with the spread of water. The deflector of suitable design shall be fitted to give even distribution of water over the area commanded by the sprinkler.

b) The sprinkler heads shall have current certification of underwriter's laboratory (UL) and Factory Manual (FM) approved. The certificate of acceptance shall be obtained from local fire authorities prior to the procurement of sprinkler heads.

c) The bulb shall contain a liquid having a freezing point below any natural climatic figure and a high coefficient of expansion. The temperature rating of the sprinkler shall be stamped on the deflector. The colour of the liquid filled in the bulb shall be according to the temperature rating as per international standard. The sprinkler heads shall be of type & quality approved by the Chief Fire office of the area.

d) The sprinklers shall have 15 mm nominal size of the orifice for light / ordinary hazard and the orifice size shall be marked on the body or the deflector of the

sprinkler.

e) Metal guards for protection of sprinkler against accidental or mechanical damage shall be provided.

4. OPERATING TEMPERATURE

a) The Operating temperature, at which the quartzoid bulb of the sprinkler head shall actuate, shall be 68 degree C or as specifically mentioned.

5. FLOW REQUIREMENTS

a) **Moderate hazard:** The density of water discharge shall be at least 5 lit/min/sqmover an assumed area of operation covering 360 sqm. The flow requirement for sprinkler system shall be 1800 Ipm at not less than 2 bar pressure at installation valve.

b) **Light hazard :** The density of water discharge shall be at least 2.25 lit/min/sqm overan assumed area of operation covering 84 sqm. The flow requirement for sprinkler system shall be 225 Ipm at not less than 2.2 bar pressure at installation valve.

6. PIPE & FITTINGS FOR SPRINKLER SYSTEM

a) Pipes must be of Heavy grade M.S. pipe conforming to IS 1239. The pipes, fittings and installation shall be hydraulically tested to a pressure of 15 Kg/Sq.cm. or 1.5 times the working pressure whichever is higher.

b) Fittings for M.S. pipes shall be of MS (IS 1239) or malleable iron (IS 1879) or Ductile Iron. The fitting of 40 mm dia and less shall be screwed only.

c) All bolt holes & flanges shall be drilled. The drilling of each flange shall be in accordance with the relevant Indian Standard.

d) Flanges shall be faced & shall have jointing of rubber insertions or asbestos compound.

e) All installation pipe work above ground shall be installed at a slope not less than 1:500 for horizontal run of pipes towards the installation control valve for drainage purpose.

f) The necessary MS sleeve of suitable dia and length shall be kept in RCC beams, walls and other structural members during the casting, for the passing of sprinkler piping.

7. ORIFICE PLATES

a) For restricting pressure at lower levels in the sprinkler system, orifice plates of appropriate sizes shall be fitted at different floor levels, at the branching points from Riser Main.

b) The Diameter of such orifice shall not be less than 50% of the dia of pipe into which it is to be fitted, which shall not be less than 50mm dia. These orifice plates must be of stainless steel with plain central hole without burrs, and the thickness shall be 6 mm for pipe size upto 150 mm dia pipes and 9 mm for above 150 mm dia

pipe size.

8. PIPES FOR DRAINAGE

a) Sprinkler pipes shall be so installed that the system can be thoroughly drained. As far as possible all pipes shall be arranged to drain to the installation drain valve as shown in the drawing for ordinary hazard system.

b) In the case of basement & other areas where sprinkler pipe-work is below the installation drain valve & in other trapped points in the system, auxiliary valves of the following sizes shall be provided.

i) 20 mm valves for pipes upto 50mm dia.

ii) 25 mm valves for 80mm dia pipe.

iii) 50 mm valves for pipes larger than 80mm dia.

9. PIPE PROTECTION

All pipes & fittings above ground and in exposed locations shall be painted with two coat of zinc
chromate primer and two or more coats of synthetic enamel of fire red colour paint.

10. SYSTEM DESIGN

The entire piping for sprinkler installation shall be designed to make it a hydraulically balanced system to fulfill the various requirements of IS: 15105. The guidelines given in the IS: 15105 is minimum prescribed.

11. Components of sprinkler system

Following types of valves of are used in the installations.

i) Stop valve

ii) Test Valve.

iii) Drain Valve.

iv) Flushing Valve.

v) Check Valve.

vi) Installation Valve and Alarm Valve.

vii) Pre action Valves.

viii) Subsidiary Valves.

ix) Alarm Device.

x) Pressure Gauges.

The location of above valves shall be as under.

a) Main Stop Valve:- Only one main stop valve shall be provided immediately after main alarm valve at a location which is readily accessible.

b) Test Valve: For testing hydraulic alarm or electric alarm by drawing water from down stream side, test valve shall be connected with down stream of the water flow alarm.

c) Drain Valve:- For drainage of system, drain valve 50 mm. dia shall be provided down stream of installation valve/stop valve or any subsidiary stop valve.

d) A common valve can perform the functions of test drain. The outlet shall be connected with a 50mm dia G. I. drain pipe along with riser pipes.

e) Flushing Valve -: If the water used for sprinkler is not portable. Flushing valves shall be provided at the end of a distribution pipe. The valve size shall be same as distribution pipe. Valve outlet shall be fitted a brass plug and extended to not more than 3 m. above floor

f) Check Valve:- Check valve shall be provided where more than one water supply is available and same shall be fitted on each water supply pipe.

g) Subsidiary Stop Valve:- Subsidiary stop valve which shall be of the same dia. as the pipe line in which they are fitted shall be provided to control water supply to sprinklers of highly sensitive areas like computer rooms.

h) Installation and alarm Valve:- A sprinkler installation shall be fitted with suitable main installation valve to control water supply to the installation. The valve set shall comprise of following:

i) a main stop valve.

ii) an alarm valve.

iii) a water monitor alarm gong.

The main stop valve shall be placed in the vicinity of the main entrance of the protected area at an easily accessible place. The valve shall be secured open by a pad locked and protected against damage. A location plate shall be fixed near the valve bearing the following words in raised letters: **SPRINKLER STOP VALVE**

Alarm valve shall be fitted on the main supply pipe immediately after the main control valve and before any connection is taken off to supply any part of the installation.

h) Alarm Device:- Water monitor alarm suitable for sprinkler services shall be provided very close to the installation and alarm valve. This alarm shall be provided on the out side of an external wall. Strainer shall be fitted between the motor nozzle and the alarm valve connection. The water outlet shall be positioned so that any flow of water can be seen. The alarm device shall provided audibility level of 85 dB above the back ground noise level.

i) Pressure Gauges: - Pressure gauges shall be provided at each of the following points.

j) Immediately down stream of the alarm valve.

k) Immediately up stream of the main stop valve.

Stop cock shall be provided before pressure gauges for removal without interruption of water supply of the installation. Pressure gauges shall be per IS: 3624.

12. SPRINKLER ANNUNCIATION PANEL AND ALARM

Electrically operated alarm shall be provided for indication of operation of sprinkler an area. Water flow switches shall be installed in main distribution pipes which shall be wired to sprinkler annunciation panel. In the event of operation of a sprinkler, the flow switch will operate and give signal to the annunciation panel to indicate operation of sprinkler in the area. This will initiate an electrically operated alarm. The system shall be independent of fire alarm system.

Construction Details

a) The Panel shall be fabricated out of not less than 1.6 mm thick CRCA sheet and powder coated after 9 tank treatment process and shall be totally enclosed damp and vermin proof. Suitable knockout shall be provided for the entry cables. The panel shall be designed such that the equipment for power supply to battery charging are housed in independent compartments. Sealed maintenances free batteries shall also be accommodated inside the panel.

b) Indicating lamps control switches, buttons and fuses shall be suitably located the front and properly labeled.

c) The indicating lamps shall be LED type of following colours. The flow switch operation conditions shall be indicated by twin lamps.
   i) Red to indicate flow switch operation.
   ii) Amber to indicate fault condition.
   iii) Green to indicate healthy condition.

d) The test buttons to test the indication lamps shall be provided.

e) The panel shall be solid state type or microprocessor type as indicated in the tender.

f) The primary function of the panel shall be to respond automatically to the operation of one or more flow switches to give alarm and to indicate area/areas where the device has activated. The operation of one or more flow switches shall result' simultaneous alarm given by the following:-
   i) External alarm hooter(s).
   ii) A visible indication on panel.
   iii) Audible alarm on panel itself (common for all zones.)

g) The panel shall indicate the fault within the system and immediate fault warning shall be given by an audible and visible signal on the panel in case of open circuit short circuit and earth fault in cable between flow switch and annunciation panel.

h) The panel shall be complete with mimic diagram for the areas covered by different flow switches. The layout of mimic diagram shall be got approved from Engineer-in-Charge.

i) Battery backup with trickle cum boost charger shall be provided for operation of the system. Indication of mains failure and low battery voltage shall be provided. The batteries shall be sealed maintenance free. The capacity of the battery shall be 12 Volt 2 Nos. 24 AH each. All standard accessories shall be provided.

13. INSTALLATION

The installation shall be carried out as per good practices. Following additional Points are to be taken care for sprinkler installations.

a) For fixing sprinkler heads, 15 mm. dia. M.S. Socket is to be screwed to range pipes at the locations as' per drawings. Dead plug shall be fixed in the socket.

b) If sprinkler head is to be provided away from range pipe, M.S. Pipe nipple of suitable size be used to extend the sprinkler head and socket is welded at desired location.

c) After completion of the entire work, pressure testing of entire pipe work shall be carried out for 24 hrs. at a pressure of 15 kg/cm2. The drop of pressure up to 0.5 kg/cm2 shall be accepted.

d) The lines shall be flushed before completion of building work so that any foreign matter which might have entered the system is taken out. The pressurization pump (Jockey pump) be operated and valves opened at different locations.

e) During occupation of the building, sprinkler heads shall be provided in place of dead plugs. Teflon tape shall be used on threaded portion. The sprinkler heads shall be properly tightened in the socket.

f) When all sprinklers heads are installed, pressure is built up in the system by pressurization pump slowly and in case no leak is found, desired pressure is developed and maintained. In case any leak is detected, the same shall be attended before pressurizing the system further.

APPROVAL BY LOCAL BODIES

It shall be the responsibility of the contractor to obtain the approval of the system from the Authorities on relevant drawings before actual installation at site and to get the complete installation inspected and passed by the concerned authorities, as may be necessary as per local bye laws.

ELECTRICAL WORK

1. SCOPE

This covers the requirements for the electrical works associated with fighting installations, namely, motors, switch boards, power cabling, control earthing and remote control-cum-indicating panels.

2. GENERAL

a) Unless otherwise specified in the tender specifications, all equipment and materials for electrical works shall be suitable for operations on 415 V / 240 V ± 10%(3 phase/single phase), 50 Hz. AC system.

b) All electrical works shall be carried out complying with the Indian Electricity Rules, 1956 as amended to date.

c) All parts of electrical works shall be carried out as per appropriate General Specifications for Electrical works published by Haryana PWD all amended up to date.

d) All materials and components used shall conform to the relevant IS specifications amended to date.

3. POWER SUPPLY

Following 3 phases, 415 Volts, 50 Hz., supplies shall be made available for fire fighting installations directly from sub-station.

(i) Normal supply for fire pumps near under ground tank.

(ii) Essential supply for terrace pump

In buildings where power failures are likely to be for long duration, in order to facilitate operation of Jockey Pump and maintain pressure in the system, essential supply for Jockey Pump and control for diesel engine shall be made available in the pump house.

a) Power cable of adequate size shall be laid from the sub-station directly to the switch board of above pumps. Independent supply shall be provided for water supply pumps if installed in the same pump house. The power supply for fire fighting is not used for any other purpose.

b) If the fire pump house, is away from the sub-station building, the route of the cable shall not pass under the building or permanent structure. Cable shall be laid along the route which is safe from fire.

c) Sufficient spare power shall always be available to drive pumping sets at all times throughout the year. Suitable capacity ACB/MCCB/Fuse Switches/Switch Fuses shall be provided in the electrical panel for extending supplies to fire pumps. Such switches shall be suitably marked with “FIRE SWITCH” and shall not be switched off without permission/intimation to appropriate authority. In case any maintenance work is to be carried out on the electrical panel where from supplies to fire pumps have been extended, alternative arrangement shall be made to ensure that power supply to fire pumps continue to be available for operation any time.

4. MOTORS

The motors shall be squirrel cage AC induction type. The motors shall be suitable for continuous duty and rating necessary to drive the pumps at 150 percent of its rated discharge with at least 65 percent rated head. The motor shall be totally enclosed fan cooled type confirming to protection clause IP 21 of IS: 4691. The class of insulation shall be ‘F’ having IP 55 protection. The synchronous speed shall be 1500/3000 rpm as per requirement of the pumps. The motor shall conform to IS: 325.

5. MOTOR STARTER

a) The motor starter shall conform to IS: 1822 “Motor starters of voltage not exceeding 1000 volts” and shall be air insulted and suitable for 415 V, ± 10% HZ, 3 phase AC supply and shall be integrated in the panel.

b) Starter for the motor shall be direct on line (D.O.L) for motors up to and including 7.5 H.P. rating and automatic star-delta type for motors of higher rating unless otherwise specified in the tender specifications.

c) Each starter shall be provided with the following protections :-

i) Thermal overload on all the three phases with adjustable settings.

ii) Independent single phase preventer. (current sensing type)

d) Adequate number of extra NO / NC contacts for interlocks, indicating lamps, remote operation etc. shall be provided on the starter / contactor.

e) Under voltage/No volt trip shall not be provided.

6. SWITCH BOARDS

a) The main panel shall be floor mounted, free standing or wall mounted cubical type and shall be factory built fabricated by one of the approved switch board manufacturer. The board shall be fabricated from 2 mm. thick CRCA sheet and powder coated after 9 tank treatment process. The board shall be fabricated with IP 52 degree of protection. It shall be suitable for termination of the incoming cable (s) from bottom.

b) The capacity of switch gear shall be suitable for the requirements of motor fed controlled. Starting currents shall be duly considered.

c) MCCB’s shall be used upto and including 630 amp. and ACB shall be used for 800 amp. and above ratings.

d) All switch fuses/SDFU shall be of AC 23 duty as per IS: 4064-1978 as amend upto date. They shall be complete with suitable HRC cartridge type fuses.

e) Switch boards shall house starters for motors with independent current sensing type single phase preventer for each starter.

f) Volt meter with selector switch, a set of indicating lamps and fuses for voltmeter and lamps shall be provided. Ammeter with CTs, and selector switch shall provided with each motor starter. Instruments shall be flush mounted with the panel and have a class index not higher than 1.0. The instruments and accessories shall be provided whether or not specifically indicated in the tender specifications.

g) The fabrication of switchboard shall be taken up only after the drawings for the fabrication of the same are approved by the Engineer-in-charge.

h) Switchboards shall be fabricated as per specifications indicated in sub-para above.

i) The layout shall be designed for convenient connections and inter-connections with the various switchgear. Connections from individual compartments to cable

alleys shall be such as not to shut down healthy circuits in the event of maintenance work becoming necessary on a defective circuit.

j) Care shall be taken to provide adequate clearances between phase bus bars as well as between phase bus bars, neutral and earth.

k) Where terminations are done on the bus bars by drilling holes therein, extra cross section shall be provided for the bus bars. Alternatively, terminations may be made by clamping.

l) Provision shall be made for proper termination of cables at the switchboards such that there is no strain either on the cables, or on the terminators. Cable connected to the upper tiers shall be duly clamped within the switchboard.

m) Identification labels shall be provided against each switchgear and starter compartment, using Plastic/Aluminium engraved labels.

n) Metallic danger board conforming to relevant IS shall be fixed on each electrical switchboard.

7. SYSTEM ANNUNCIATION

For controlling operation of pumps and indicating fault, system annunciation shall be provided. The system shall consist of relays timer, contactors etc and shall be designed to operate the fire pumps with interlocking and fault indication Annunciation window shall be provided to indicate following faults.

Low water level in UG tank. Main pump failed to start.

Main pump failed during operation. Diesel pump failed to start.

Diesel pump failed during operation. Supply to Main Pump failed.
Supply to Pressurization Pump failed.
Suitable sensors, differential pressure switches, monitors shall be provided at respective location, the control system shall be operational on 12 / 24 volt DC batteries of engine starting. Battery chargers shall be provided to ensure that batteries remain charged. Batteries shall be sealed maintenance free type.

8. REMOTE INDICATING PANEL

a) Remote indicating panel shall be provided in the fire control room. This panel shall have necessary status indication of all electrical motors.

b) Back indication to show the status of operation of all the motors and also pressure in the system, water level in under ground and over head tank etc. shall be provided.

c) Panel shall be fabricated from not less than 1.6 mm thick CRA sheet and powder coated after 7 tank treatment process. The panel shall be dust, damp and vermin proof. This shall be of wall mounting type. This shall be complete with necessary termination arrangements, multicore cables, tag blocks, control transformer, designation plastic labels, double earth studs etc. as required.

9. POWER CABLING

a) Unless otherwise specified, the power cables shall be XLPE insulated, PVC outer sheathed aluminium conductor, armoured cables 1100 V grade.

b) Power cables shall be sizes to meet the starting and running current of motors fed and shall be as approved by the Engineer-in-Charge, after taking into consideration the load, the length of cabling.

c) Cables shall be laid in suitable metallic trays suspended from ceiling, or mounted on walls. Cable ducts shall not be provided in pump rooms. Cable trays shall be of perforated steel sheet with adequate structural strength and rigidity. Necessary supports and suspenders for cable trays shall be provided by the contractor as repaired.

10. CONTROL WIRING

a) Control wiring shall be done using ISI marked FRLS, PVC insulated and PVC sheathed, 2.5 sq. mm, 250 V grade, armoured multi-core copper conductor cable. The control cable shall also be laid in the same manner as power cable.

b) The number and size of the control cables shall be such as to suit the control system design adopted by the contractor.

c) Runs of control wires within the. Switchboard shall be neatly bunched and suitably supported / clamped. Means shall be provided for easy identification of the control wires.

d) Control wiring shall correspond to the circuitry/sequence of operations and interlocks approved by Engineer-in-Charge.

11. EARTHING

a) Provision of earth electrodes and the type of earthing shall be as specified in Schedule of quantities.

b) The earth work shall be carried out in conformity with Haryana PWD / CPWD Specifications for Electrical works.

c) Metallic body of all motors, medium voltage equipments and switch boards shall be connected by two separate and distinct earth conductors to the earth stations of the installations. Looping of such body earth conductors is acceptable from one equipment, or switch board to another.

d) The size of earth conductors for body earthing of equipments shall be 2 Nos. 25 x 3 mm G.I. strip. / 2 Nos. 32 x 6 mm G.I. strip as required & as specified in BOQ.

e) Armouring of cables shall be connected to the body of the equipments/switch board at both the ends. Compression type glands shall be used for all such terminations in the case of PVC cables.

12. PAINTING

All panels shall be supplied with the manufacturer’s standard finish painting or as indicated in the Schedule of Work.

INSTALLATION, TESTING AND COMMISSIONING

1. SCOPE

This covers the requirement of Installation, testing and commissioning fire fighting system.

2. PREPARATION AND APPROVAL OF DRAWING

On award of the work, the contractor has to prepare shop drawings as per special conditions of contract and submit to the Engineer-in-charge for approval. The work is to be executed as per approved drawing. The stage of approval of drawings is therefore very important. All drawings should be carefully and critically examined before approval. The requirements of various components of fire fighting system have been described with the components of fire fighting system. However generally following points are to be taken care while examining and approving the drawings.

a) Site survey should be carried out in detail.

b) In addition to building plans, layout plan along with landscape plan/horticulture plan and other services plans should be consulted while deciding route of under ground pipes from pumps house and around the building.

c) As for as possible, under ground pipe are not to be laid under road, pavement, building and along open spaces. The locations along road, foot path in earth may be preferred.

d) The location of yard hydrants, fire services inlet and fire service connection are to be decided based on National Building code. However necessary adjustments are to be made so that these components do not become hindrance in vehicular movement and entrance to the building. Requirement of other building services are also to be given due consideration. Symmetry should be maintained for aesthetic considerations.

e) Pipe sizes are to be decided in accordance with provision of NBC.

f) Pump House:- The layout of equipment in pump house is very important fromoperation and maintenance considerations. The requirement of pumps and engine have been described in earlier chapters. In case other equipment ‘s i.e. water supply pumps etc are to be installed in the same pump house, sufficient space shall be left for them as well. The dimensioned foundation drawing of pumps should be available for marking in the pump room layout. The layout is to be prepared in such as a way that it should be possible to maintain any equipment without disturbing the adjoining equipment. Electrical panels are to be installed at a location which is easily accessible near the entrance to the pump house and there should be no possibility of water dripping over or near the electrical panel.

g) Electrical Panel:- Complete wiring drawing, layout etc. are to be examined toensure that provisions of agreement are incorporated in the drawing. Sizes of various panel and mounting arrangement may be decided keeping in view ease of operation and aesthetic consideration as well.

3. INSTALLATION

The requirements of installation of various components have been described with different equipments. However following precautions are to be taken during execution of the work.

a) The pump and motor/engine are to be perfectly aligned on the base plate so that there is no vibration during operation. All nuts, bolts, washers shall be of adequate size and galvanized.

b) The pipe supports should be decided in a way that the weight of pipes and valves are not transferred to the pumps and supports do not cause hindrance in movement inside the pump house. As far as possible, floor supports may be provided in pump house.

c) All valves shall be installed at a height and in a position that their operation by right hand is conveniently possible.

d) All pressure gauges should be installed so that the dial is vertical and is visible while entering the pump house.

e) Electrical panels should not be installed at floor level. The panels shall be sufficiently raised above ground level. If panels are to be mounted on wall, an angle iron frame shall be provided so that at least 75 mm space is left behind the panels. The panels shall be easily approachable.

f) Cable trays are to be used for laying of power and control cable inside pump house. No cable is to be laid at floor level/in trench. Cable tray layout should give neat appearance. All cable tray shall be adequately supported from the ceiling /floor.

g) Drain pump of suitable size as per drawings shall be installed in the sump provided in pump house. The pump shall operate automatically for which water level sensor shall be provided.

h) In no case any structural member i.e. RCC wall, column, beam and floor are to be damaged during installation. Mechanical fasteners are to be used for grouting support. U.G. tank wall is not to be used for any support. No pipe/cable is to cross the pump house below ground level. Openings above ground level are only to be used for this purpose.

i) The engine installation work shall be carried out in accordance with the requirement of engine manufacturer and be got approved by the manufacturer or their authorised service centre. The exhaust pipe should be suitably extended out side the pump house so that smoke does not effect nearby structure. Fuel tank shall be properly supported and located in way that the same does not cause hindrance in movement in the pump house.

j) While excavating for laying of external pipes, suitable sign board/ barricading shall be provided to ensure that no person falls in the trench.

k) The width and depth of trench shall be adequate for laying the pipe 1 m below ground level.

l) No earth or any other matter is to be allowed to enter the pipes. The ends shall be kept closed always.

m) The anticorrosive treatment is to be applied on the entire length laid under ground in accordance with specifications. The treatment is not to be damaged.

n) Pressure testing is to be carried out in sections before filling the earth back in the trench.

o) The earth filling is to be done in layers of 20 cm each and properly rammed so as to avoid possibility of settlement. Surplus earth / malba shall be removed from the site by the contractor.

p) where pipes crossing road likely to have heavy traffic, additional protection over pipe shall be provided to ensure that pipe is not damaged.

q) External hydrants and fire service connection/ inlet shall be located parallel to the nearby road/foot path so as to give proper appearance. Foundation shall be raised from below ground level and shall be properly plastered in plumb. The hydrants shall be facing the road/ approach. There shall be no obstruction in approaching the hydrants for operation.

r) Risers shall be parallel to the wall and in plumb. Adequate supports shall be provided from the wall. Opening around the pipe in slab shall be filled with CC and finished with plaster.

s) Internal hydrant shall be provided in the centre and facing out side for ease of operation. Sufficient space shall be provided around the handle for operation. There shall be no hindrance in moving the first aid hose reel.

t) Terrace pipe shall be supported on CC pedestals of adequate height. The pipe route shall be such as no hindrance is created in movement at the terrace. Pipes shall be sufficiently raised above terrace. It is to be ensured that water proofing is not damaged during laying of pipes.

4. TESTING

a) Initial Testing

i) During laying of pipes, the same shall be subjected to 15 kg./cm2 hydraulic pressure for a period of 24 hours, in sections.

ii) After completion of the work, all valves/ fittings shall be installed in position and entire system shall be tested for 24 hours at a pressure of 15 kg/ cm2. The drop of pressure up to 0.5 kg/cm2 shall be accepted.

b) Final Testing

i) After completion, all operation checks shall be carried out for automatic operation of the systems. For this purpose, landing valves may be opens at different locations. The exercise shall be repeated couple of times to ensure trouble free operation of the system.

ii) **Flow Test:-** The design flow of pumps shall be checked. The pump shall beoperated after opening a number of landing valves at different locations. Design pressure is be maintained in the pump house. Water discharge is to be measured by drop in level in UG tank for a certain period. All pumps shall be tested one by one.

The flow rate shall be not less than as specified while maintaining the design pressure in pump house.

5. INSPECTION BY LOCAL FIRE OFFICER AND SAFETY DIRECTOR

After completion of the work and testing to the entire satisfaction of Engineer-in Charge the installation shall be offered for inspection by Chief Fire Officer or his representative. Testing as desired by the Fire Officer shall be carried out. The contractor will extend all help including manpower during testing. The observation of Chief Fire Officer which are a part of agreement shall by attended by the contractor. Nothing extra is to be paid for testing as above. If required installation are to be inspected and approved by Director Safety or his authorized representative.

6. COMMISSIONING

a) **Flushing the System:** - Before commissioning, the entire system shall be flushed toensure that any earth/ foreign matters which might have entered during Installation are taken out. For this, pump may be operated and valves opened at different location.

b) As soon as the work is complete, the system shall be commissioned and made available for use. Requirement of fire fighting installations is equally important during occupation of the building. If the building is to be occupied in part, fire fighting system of building completed shall be commissioned by isolating the system of under construction portion of the building.

c) The fire fighting system shall be maintained and manned from the very first day of its commissioning.

d) Any defects noticed during the warranty period shall be promptly attended by the contractor and availability of the system at all time is to be ensured.

SCHEDULE OF TECHNICAL PARTICULARS		
Sl. No.	**Description**	
	Pumps	**Electrical Motor Driven Main Fire Pump**
01	Make	
02	Pump Model No.	
03	Pump Type	
04	Duty of Pumps	
05	Discharge (LPM)	
06	Head (Mtrs.)	
07	Efficiency	
08	Speed (RPM)	
09	Power Absorbed at duty point (kw)	
10	No. of Stages	
	Pump performance at 150% of D.P.	
11	Capacity (LPM)	
12	Head (Mtrs.)	
13	Efficiency	
14	Power absorbed	
	Material of Constructions	
15	Casing	
16	Impeller	
17	Shaft	
18	Shaft sleeve	
	Prime Mover	
19	Make	
20	Type	
21	H. P.	
22	Full load speed (RPM)	
23	Full load current (amp.)	
24	Design Standard	
25	Supply Voltage & Variations	
26	Frequency & Variations	
27	Cooling Type	
28	Protection Class	
29	Insulation Class	
30	Duty	
31	Colour Shade of Paint	
32	Terminal Connection	
	Pump Accessories	

33	Base Plate	
34	Coupling	
35	Coupling Guard	
36	Foundation bolts, nuts & washers	
37	Mechanical Seal	

Sl. No.	Description	
	Pumps	**Diesel Engine Driven Standby Pump**
01	Make	
02	Pump Model No.	
03	Pump Type	
04	Duty of Pumps	
05	Discharge (LPM)	
06	Head (Mtrs.)	
07	Efficiency	
08	Speed (RPM)	
09	Power Absorbed at duty point (kw)	
10	No. of Stages	
	Pump performance at 150% of D.P.	
11	Capacity (LPM)	
12	Head (Mtrs.)	
13	Efficiency	
14	Power absorbed	
	Material of Constructions	
15	Casing	
16	Impeller	
17	Shaft	
18	Shaft sleeve	
	Prime Mover	
19	Make	
20	Type	
21	Rating (BHP)	
22	Full load speed (RPM)	
23	Engine Starting	
24	Design Standard	
25	Cooling Type	
26	Duty	
27	No. of Cylinder	
28	Silencer Type	
29	Governing Std.	
30	Fuel Tank Capacity	
31	Fuel Consumption at full load	
32	Battery Details	
33	Control Panel & wiring Harness	
	Pump Accessories	

34	Base Plate	
35	Coupling	
36	Coupling Guard	
37	Foundation bolts, nuts & washers	
38	Mechanical Seal	

Sl. No.	Description	
	Pumps	**Jockey Pump**
01	Make	
02	Pump Model No.	
03	Pump Type	
04	Duty of Pumps	
05	Discharge (LPM)	
06	Head (Mtrs.)	
07	Efficiency	
08	Speed (RPM)	
09	Power Absorbed at duty point (kw)	
10	No. of Stages	
	Pump performance at 150% of D.P.	
11	Capacity (LPM)	
12	Head (Mtrs.)	
13	Efficiency	
14	Power absorbed	
	Material of Constructions	
15	Casing	
16	Impeller	
17	Shaft	
18	Shaft sleeve	
	Prime Mover	
19	Make	
20	Type	
21	H. P.	
22	Full load speed (RPM)	
23	Full load current (amp.)	
24	Design Standard	
25	Supply Voltage & Variations	
26	Frequency & Variations	
27	Cooling Type	
28	Protection Class	
29	Insulation Class	
30	Duty	
31	Colour Shade of Paint	
32	Terminal Connection	
	Pump Accessories	
33	Base Plate	
34	Coupling	

35	Coupling Guard	
36	Foundation bolts, nuts & washers	
37	Mechanical Seal	

ANNEXURE – A

LIST OF APPROVED MANUFACTURERS FOR FIRE FIGHTING SYSTEM

S.No.	DESCRIPTION	MANUFACTURER'S NAME
1	Hydrant Valves / Fire Brigade Inlet / Draw out	Newage /Fire cut/ Safeguard / Padmini / Safex/ New age /Minimax/Atasee
2	Sluice Valves / Butterfly valves / Non Return Valves	IVC/ Venus / Audco / Advance / SKS/ CRI / AIP
3	Ball Valves	CIM / Leader / Audco / Advance
4	Air Release Valves	Newage / CIM / Leader / Sant
5	Strainers	Advance / Audco / SKS / AIP
6	Fire Extinguishers	Minimax / Cease Fire / Safex / Safeguard / UFS / Fire cut/ Atasee
7	Fire Mans Axe	Newage / Safeguard / Padmini/ Atasee
8	Air Release Valve	CIM / Newage / Leader / Sant
9	Pressure Reducing Valve	WILKINS (Newage) / AIP / SKS
10	Branch Pipe and Nozzle	Newage /Fire cut/ Safeguard / Padmini /Safex/ New age /Minimax/ Atasee
11	Galvanized Iron Pipe / MS Pipe – IS : 1239	Jindal (Hissar) / Praksh surya
12	G.I. / MS / M.I. Fittings	Unik / Jainsons
13	Ductile Iron Fittings	Jainsons Industries
14	MS Forged Fittings	VS / B M / True forge
15	Fire Hose Pipe	Newage /Fire cut/ Safeguard / Padmini /Safex/ New age /Minimax/ Atasee
16	Hose Reel	Newage /Fire cut/ Safeguard / Padmini / Safex/ New age /Minimax/ Atasee
17	XLPE / PVC Insulated Aluminium Conductor Armoured Cables	Universal (Satna) / CCI / Nicco / Finolex / Polycab / Skytone / RR
18	Copper ConductorArmoured ControlCables	Universal (Satna) / CCI / Nicco / Finolex / Polycab / Skytone / RR
19	Cable Tray	Indiana / Bharti / Slotco / Steelways / Skaber / Profab / Rico / Dynamic
20	MCCB	ABB / L & T / Schneider / Siemens / Legrand
21	Relays / Contactors	L & T / ABB / Siemens / Schneider / Automatic Electric
22	Current Transformer	Kappa / Pragati / AE / Gilbert & Maxwell / Vishal
23	Voltage Transformer	Kappa / AE / Gilbert & Maxwell / Vishal
24	Ammeter / Voltmeter / Metering Equipment’s	L & T / Siemens / Neptune / Enercon / Automatic Electric
25	Selector Switches	Kaycee / Salzer / L & T

26	LED Lamps	L & T / Vaishno / Siemens
27	Pump Control Panel	Tricolite / Advancve (Delhi) / Ambit / Adlec / Milestone / Attack fire / Vidyut control / RST / Dynamic
28	Fire Fighting Pumps	Kirlosker / Mather+ Platt / Grundfos
29	Diesel Engine	Kirlosker / Cummins
30	Electric Motors	Kirlosker / Crompton / Siemens
31	Pressure switches	Danfoss / Indfoss
32	Pressure Guage	H Guru / FIBIG
33	Flow Switches	System sensor / HD
34	Sprinkler Annunciation Panel	Safeway / Agni/ Fire cut / Attack fire Daksh Morley /
35	Sprinklers	Tyco / Globe / Viking / Reliable / Fire cut / HD/ Atasee
36	Sprinklers Flexible Hose	Tyco / Globe / Viking / Padmini / Newage / Fire cut / Attack fire/ Atasee
37	Installation Control valve	
38	Anchor Fastner / U clamp/ Celvis / sprinker hangers	Hilti / Intello tech / Hightech / Fisher / Easyflex
39	Anti Vibration Mounting / Expansion Joint	Easyflex / Resistoflex / Kanwal / Precise
40	Exit Sign	Glow light / Legrand / Autoglow/ Pierlite / Agni / Attack fire / Atasee
41	Paint	Asian / Berger / Nerolac / ICI
42	Any Other Items	On Approval of Consultant or Engineer-In-Charge

S.No	Details of Material /Equipment	Manufacture's Name
1	Pipes	1.Tata 2. Jindal Hissar 3. Surya Roshni
2	Single headed Hydrant valves,three way Fire Brigade inlet,Branch pipe & shut off nozzle	1.Newage 2.Fire cut 3. Safeguard 4. Padmini 5. 6.Safex 7. New age 8.Minimax 9.Suprex 10. Cease fire 11 Atasee
3	20 mm dia rubber pipe for Hose reel	12.Shah Bhogi Lal 13 Atasee
4	Starters,switches,T.P.N switch	1.L&T 2. Siemens 3. GE Power 4. Schneider
5	Pressure Switch	1. Indofoss 2.Switzer
6	Pressure Guages	1.H Guru Fiebig
7	Enamel Painting of Pipes etc.	1.Asian 2.Goodlas 3.Nerolac 4.ICI
8	Paint Primer	1.Asian 2.Jenson Nicholson
9	Fasteners	1.Hilti 2.Fischer 3.Bosch
10	Weld Rods	1.Adwani

11	Fire Extinguishers	1.Superx 2.Fire cut 3. Safeguard 2.Cease Fire 5. 6.Safex 7.Shah Bhogi Lal 8.Minimax 9.Suprex 10. Cease fire 11.Shah Bhogi Lal 12. Atasee
12	RRL Hose	1.Superx 2.Fire cut 3. Safeguard 2.Cease Fire 5. 6.Safex 7.Shah Bhogi Lal 8.Minimax 9.Suprex 10. Cease fire 11.Shah Bhogi Lal 12. Atasee
13	Thermoplastic Hose Reel	1.Superx 2.Fire cut 3. Safeguard 2.Cease Fire 5. 6.Safex 7.Shah Bhogi Lal 8.Minimax 9.Suprex 10. Cease fire 11.Shah Bhogi Lal 12. Atasee
14	Rubber Gaskets	1.CIC 2.Varuna

15	Hose Drum	1.Superx 2.Fire cut 3. Safeguard 2.Cease Fire 5. 6.Safex 7.Shah Bhogi Lal 8.Minimax 9.Suprex 10. Cease fire 11.Shah Bhogi Lal 12. Atasee
16	Mechanical Seal	1.Durametallic 2.Burgmann
17	Strainer	1.NVR 2. LP Valves 3. Castle
18	Installation Control Valve	1.Omaxe 2.HD 3.Grinell 4.Tyco 5.Viking
19	Pipe Supports(Band Hanger)	1.Mupro
20	Flow Switch	1.System Sensor 2.Potter
21	Pipe Fittings	1.New 2. S.S.
22	Sluice,Butterfly and Non Return Valves	1.NVR 2.LP Valves 3.Castle
23	Ball Valve	1.NVR 2.LP Valves 3.Castle
24	Anti Vibration Mounting	1.Dunlop Resistoflex
25	Fire Sealent	1.Birla 3M 2.Hilti
26	Fire Electrical panel	A to Z/Tricolite /Attack fire
27	Fire Sprinkler test and drain assembly	1.Castle 2.Giacomini 3. Fire cut
28	Fire Pumps	1.Lubi 2.Groundfoss 3.Armtrong 4. Kilosker

(Note:Pump and motor shall be assembled in Pump's Manufacturer's works)

ANNEXURE – B

LIST OF RELEVANT INDIAN STANDARDS

S.No	I.S. No.	Title
1	IS-8757	Glossary of terms associated with fire safety
2	IS-884.	Specification for first-aid hose reel for fire fighting
3	IS-901	Specification for couplings, double male and double female instantaneous pattern for fire fighting.
4	IS-902.	Specification for fire hose delivery couplings, branch pipe, nozzles and nozzle spanner.
5	IS-903.	Specification for fire hose delivery couplings, branch pipe, nozzles and nozzle spanner.
6	IS-904	Specification for two way and three – way suction collecting heads for fire fighting purposes.
7	IS-907.	Specification for suction strainers, cylindrical type for fire fighting purpose.
8	IS-908.	Specification for fire hydrant, stand post type
9	IS-909.	Specification for under ground fire hydrant.
10	IS-636.	Non percolating flexible fire fighting delivery hose.
11	IS-7637.	Glossary of terms for fire fighting equipment.
12	IS-937.	Specification for washers for water fittings for fire fighting purposes.
13	IS-1641.	Code of practice for fire safety of buildings (general): General principles.
14	IS-1642.	Code of practice for fire safety of buildings (general): Details of Construction.
15	IS-1643.	Code of practice for fire safety of buildings (general):Exposure hazard.
16	IS-1644.	Code of practice for fire safety of buildings (general): Exit requirements and personal hazard.
17	IS-1646.	Code of practice for fire safety of buildings (general): Electrical installations
18	IS-2871.	Specification for branch pipe, universal for fire fighting purposes.
19	IS-2930.	Functional requirements for hose laying tender for fire brigade use.
20	IS-5290.	Specification for landing valves.
21	IS-8090.	Specification for couplings, branch pipe, nozzle, used in hose feel tubing for fire fighting.
22	IS-8442.	Specification for stand post type water monitor for fire fighting.
23	IS-9972.	Specification for automatic sprinkler heads.
24	IS-12349.	Fire protection-Safety sign.
25	IS-12407.	Graphic symbols for fire protection plan.
26	IS-9668.	Code of practice for provision and maintenance of water supplies and fire fighting.
27	IS-3844.	Code of practice for installation and maintenance of internal fire hydrants and hose reel on premises.
28	IS-12585.	Specification for thermoplastic hose (Textile Reinforced)

29	IS-10221.	Code of practice coating and wrapping of under ground mild steel pipe lines.
30	IS-15105.	Design and installation of fixed automatic sprinkler fire extinguisher system-code of Practice.
31	IS-325.	Three phase induction motors.
32	IS-1822.	Motor starter for voltage not exceeding 1000 volts.
33	IS-3624.	Bourdon tube pressure and vacuum gauges.
34	IS-1520.	Horizontal centrifugal pumps for clear, cold, fresh water.
35	IS-1239.	Mild steel tubes, tubular and other wrought steel fittings.
36	IS-3589.	Electrically welded steel pipes for water, gas and sewage.
37	IS-6392.	Steel pipe flanges.
38	IS-778.	Gun metal gate, globe and check valves for general purpose.
39	IS-2592.	Recommendation for methods of measurement or fluid flow be means of orifice plates and nozzles.
40	IS-732.	Code practice for electrical wiring and fittings of building.
41	IS-900.	Code of practice for installation and maintenance of induction motor.
42	IS-1248.	Direct acting electrical indicating instruments
43	IS-2516.	A.C.circuit breakers for voltages not exceeding 1000 volts.
44	IS-4047.	Heavy duty air break switches and composite units of air break switches and fuses for voltage not exceeding1000 volts.
45	IS-2208.	HRC cartridge fuse links upto 650 volts.
46	IS-1554. (Part – I).	PVC insulated (heavy duty) electric cables for working voltage upto and including 1100 volts.
47	IS-780.	Sluice valve for water works purposes (50 to 300 mm. size).
48	IS-13095.	Butterfly valves.
49	IS-1992.	Selection of Fire Extinguisher
50	IS-694 - 1990	PVC insulated wires / cables for working voltage up to and including 1100V.

STANDARD SPECIFICATIONS FOR 2 Hrs. FIRE CHECK METAL DOORS

ESS Abbreviations:
BS: British Standards
EN: European Standards
IS: Indian Standard
FCD: Fire Check Door
GI: Galvanized Iron

CONTENTS

1.0 GENERAL……
2.0 CODES &SPECIFICATIONS……
3.0 TESTING &CERTIFICATION.……
4.0 FIRE CHECK DOORS.....…….
5.0 INSTALLATION ……
6.0 PACKING.....
7.0 STORAGE.....
8.0 DELIVERABLES BY THE CONTRACTOR…….....

1.0 GENERAL

The Fire & smoke Check Doors/ Fire resistant Doors (hereinafter termed as FCD) shall not collapse during the rated period of fire under the specified fire conditions and shall provide safe access to the escape route.

2.0 CODES & SPECIFICATIONS

The complete assembly of the doors i.e. frame, shutter, vision glass and hardware shall have fire rating as required and shall confirm to:

1. IS 3614 Part II -1992 Fire Resistance test & performance criteria
2. BS:476,Part-6 & 7 Surface spread of flame test for FR Paint.
3. BS:476,Part-20 Method for determination of the fire resistance of elements of construction (general principles).
4. BS:476,Part-22 Method for determination of the fire resistance of non load bearing elements of construction.
5. BS:6206:1981 Specification for impact performance requirements for float safety glass and safety plastics for use in buildings.
6. EN:12600 Specification for impact performance requirements for flat safety glass .
7. EN:1634 Part-1-1999 Fire resistance tests for Glazed doors & Partition and open-able windows
8. EN:1364 Part-1-1999]Fire resistance tests for non-load bearing elements.

3.0 TESTING AND CERTIFICATION

The FCD has been tested earlier at reputed by National or international reputed approved test house Along with all material tests, the complete system along with the framing shall be tested in accordance with the criteria of BS 476: Part 22 1987/EN 1634/EN1363 along with necessary hardware. The door must have been manufactured with galvanised - GI sheet of GPSP Grade as per IS 277. All Fire doors must satisfy the requirement of 120 minutes Fire Rating along with its Stability & Integrity for 120 minutes. The Prototype sample of the door must carry a prior test evidence as per IS 3614 part-2 / BS 476 Part 20 & 22. The manufacturer must submit the copy of test evidence prior to start of production .The offered test certificate should either carries it's Validity or certificate must not be older than 5 years from CBRI / NABL Accredited Lab .

4.0 FIRE CHECK METAL DOORS

4.1 Composition of the Fire Doors

All materials, items, hardware etc. shall be subjected to approval by Engineer-In-Charge. Necessary documentation/ test certificates shall be furnished by the Contractor for such approval. FCD shall be fabricated from ISO 9001:2015 certified Manufacturer only after approval of materials etc, by Engineer-In-Charge.

Each FCD shall be provided with a small metal identification plate in suitable location indicating Fire rating, name of the Manufacturer, date of installation and approval of approved test house.

MATERIAL

Door Frames and Leaves are made from Galvanized Steel sheet of GPSP Grade as per IS 277

DOOR LEAVES

Door leaf shall be minimum 49mm thick fully flush double skin door. The door is duly tested at CBRI /NABL as per IS 3614 part 2 – 1992 , BS 476 part 20 & 22 for minimum 120 minutes fire rating for its Stability & Integrity. Door leaf shall be manufactured from 0.8 mm minimum thick Galvanized steel sheet. The internal construction of the door should be rigid reinforcement pads for receiving appropriate hardware. The infill material shall be Rockwool / Honeycomb. All doors shall be factory prepped for receiving appropriate hardware and provided with necessary reinforcement for hinges, locks, and door closers. The edges should be interlocked with a bending radius of 1.4mm. For pair of doors astragals has to be provided on the meeting stile for both active and inactive leaf. Vision lite wherever applicable should be provided as per manufacturer's recommendation with bedding and screws from inside.

DOOR FRAMES

Door frame shall be double rebate profile of minimum size 100mm X 57 mm made out of 1.2 mm thick galvanized steel sheet. Door frame shall be Single rebate profile with a factory pre-punched groove so as to accommodate Fire & smoke seal size minimum 10x4mm.Frames shall be Butt jointed and field assembled with self-bolted. The frames should be finished with Thermosetting Powder Coating in desired RAL Shade. All provision should be mortised, drilled and tapped for receiving appropriate hardware. Frames should be provided with back plate bracket and anchor fasteners for installation on a finished plastered masonry wall opening.
Unless otherwise mentioned elsewhere, all FCD shall be of two hours (120 Mins.) and all door assemblies (except fully glazed fire door) shall satisfy criteria of fire resistance (stability, fire smoke check integrity with insulation material).

FINISH

The door frames and door shutters to be Powder coating in (70 micron) RAL desired Shades.

4.1.2 IRONMONGERY

HINGES

SS Ball Bearing Hinges of size 100 x 75 x 3mm complete with SS Screws of BB1953 Becker
F.S / 3090F DORMA Make (4 No's per panel) (Required For All Doors)

PANIC BAR

Panic Bar single / double leaf panic exit devices SBL 390/395 Becker F.S. / PHA2000 Series DORMA Make (Required for Fire Staircase Location Doors Only)

PANIC TRIM

Panic Trim For Operation From The Other Side Of The Panic Bar Becker F.S. / PHT-3905 DORMA Make (Required For Fire Staircase Location Doors)

SHASH LOCK
Mortise Sash Lock With SS Lever Handle Of SL7260/ TLH612 Becker F.S. / DORMA TH121 Type 2 Series Make (Required For Service Room Location Such As AHU, Electrical Rooms Etc.)

DEAD LOCK
Mortise Dead Lock DL7260 Becker F.S. / 288A DORMA Make.

PULL HANDLE
Supply & fixing of SS 304 Finish D Type Pull Handle of size 300mm mm Long of PHD Series Becker F.S/ TGDI DORMA Make.

FLUSH BOLTS (DOUBLE DOOR)
Stainless Steel 304 grade 600mm for up to 2100mm & 600mm for up to 2400mm height door Long Concealed Flush Bolt of BFBS1930 Becker FS/ 9114306 DORMA Make with necessary screws as required.

DOOR CLOSERS
Door closers of BLC-604 Becker F.S/ TS-71 DORMA Make. (Required For All Fire Doors except Shaft Door)

SHAFT LOCK
Shaft lock with Allen key of Becker FS/ 9119315 DORMA.

FLUSH PULL HANDLE
Supply & fixing of SS flush pull handle of BFPR1250 Becker FS/ DORMA Make.

ANCHOR FASTENERS
Anchor fasteners of HILTI/ FISHER/ Equivalent of maximum 80mm length.

SMOKE SEAL
Smoke seal batwing type on all side of frame of IS-1212 LORIENT/ Becker FS Make for air tightness.

VISION PANEL for FIRE DOOR
2Hr fire Rated glass, 5mm Keralite of Saint Gobain with UL label , non- removable stamp on every panel to be used as vision panel for Fire door

OPTIONS
Exit, Electro Magnetic Hold Open Device, Door Coordinator, Automatic Door Bottoms etc., can be provided if required.

Note: All Becker Fire Solution or Equivalent Hardware's should cover a minimum 02 Years of manufacturer warrantee from the date of supply. Hardware should pass European certificate "CE" of conformity / UL with required fire ratings.

4. INSTALLATION
Shop drawings of the doors in accordance to the prototype profiles used to obtain fire test certificate by approved national or international test house shall be prepared and submitted for approval by the Engineer-In-Charge. The shop drawings shall include all details of construction, anchoring, connections, fastenings etc. Any suitable modification in fittings, fixtures as required for project specific installations shall have to be

incorporated in door profile and approval obtained prior to the installation of the door.

5.1 Door frame fixing

The door frames should be assembled adjacent to the place of installation as the frames are not designed for transporting in an assembled condition. After assembly it is to be ensured that all threaded preparations are covered from the back of the frame using self adhesive strip to prevent penetration of mortar back-fill into screw threads. The head member of assembled frame shall be positioned against jambs ensuring correct alignment and secured using M8 x 20 long plated bolts together with nuts spring and flat washers. The assembled frame shall be kept in position within the opening by means of bracing. In order to correctly position the frame against finished floor level or equalize on adjustable floor anchors where specified, shim shall be used under jambs. The frame shall be checked for squareness, alignment, twist etc. with carpenters bevel and plumb.
A tie rod shall be fixed to the frame during installation to ensure the correct dimensions between the frame rebated and the same may be removed after installation.
Where a 2nd fix application is required a shim detail is suggested to take up gap between frame and existing opening.

5.1.2 Door shutter fixing

Fix all the hardware to the door shutter like hinges, flush bolts, bolts, Panic Bar, mortise locks, door closer, door stoppers, handles etc. with the appropriate screws and bolts supplied.
The shutter is to be then fixed to the frame, which is already installed. Align the shutter to match the hardware to the cutouts in the frame. Tighten the hinge screws.

4. Packing

Frame & Shutter: Individual frames members & Shutter to be wrapped in protective 70-micron polyethene sheets and placed in individual card board boxes. Individual boxes to be sealed. Frames to be assembled at site with aid of roofing bolts.

5. STORAGE

All knocked down frames shall be stacked flat and shutters vertically on wooden runners and suitably covered as per the instructions of manufacturer to prevent rust and damage.

6. DELIVERABLES BY THE CONTRACTOR

Following documentation/ drawings shall be furnished along with the Doors

1. Prototype Test Certificate by National or international test house as per product.
2. Shop drawings
3. Specification/ Manufacturer’s literature, Test certificates and other documentation for materials and items intended to be used.
4. Test report attested by Fire rated glass manufacturer in case of Glazed fire door.
5. The Fire rated glass applicator has to be approved by Fire rated Glass Manufacturer and Submit the approved applicator certificate.

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Section 6

Bill of Quantities
Preamble

1) The Bill of quantities shall be read in conjunction with the instructions to Bidders, Conditions of contract, Technical Specifications and Drawings.

2) The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the contractor and verified by the Engineer and valued at the rates and prices tendered in the priced Bill of Quantities, where applicable, and otherwise at such rates as the Engineer may fix within the terms of the Contract.

3) The rates and prices tendered in the priced Bill of Quantities shall, except in so far as it is otherwise provided under the Contract, include all constructional plant, labour, supervision, materials, erection, maintenance, insurance, profit, all taxes (but excluding GST) and duties, together with all general risks, liabilities and obligations set out or implied in the Contract.

4) The rates and prices shall be quoted entirely in Indian Currency.

5) A rate or price shall be entered against each item in the Bill of Quantities, whether the quantities are stated or not. The cost of Items against which the contractor has failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

6) The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no Items are provided the cost shall be deemed to be distributed among the rates and prices entered for the related Items of work.

7) General directions and descriptions of work and materials are not necessarily repeated or summarized in the Bill of Quantities. References to the relevant sections of the contract documentation shall be made before entering rates or prices against each item in the Bill of Quantities.

8) Errors will be corrected by the Employer for any arithmetic errors pursuant to clause of the Instructions to Bidders.

9) Any items of work not provided in the contract schedule of rates if required to be executed will be paid as per Haryana PWD schedule of rates 2021 plus ceiling premium as applicable in DNIT subject to the premium tendered by the contractor. In case of non schedule item, these will be paid by the ‘Engineer’ based on market rates of that time after getting approval from the competent authority and will be binding upon the contractor.

10) The work will be carried out strictly in accordance with the PWD book of specification 1990 edition, CPWD Specifications and MoRT&H Specifications as applicable and that will form part and parcel of this contract agreement.

11) The 'Engineer' shall be entitled to order work against any item or work shown in this contract schedule of rates hereinafter called the "Schedule" to any extent and without any limitation whatsoever as may be required in his opinion for the purpose of work irrespective of the fact the quantities are omitted altogether in the "Schedule" or shown more or less than the work ordered to be carried out.

12) In this contract schedule of rates only essential portion of items has been written, but it will deem to cover the entire items as fully described in Haryana PWD schedule rates 2021 till the date of opening of tender and will be applicable on this contract schedule of rates.

13) All the items in this contract schedule of rates 2021 subject to the foot notes given in the Haryana PWD schedule of rates 2021 till the date of opening of tender and will be applicable on this contract schedule of rates.

14) Quantities given in the BOQ may vary at the time of execution of works done at site by the contractor.

15) Unless otherwise specified all material, machinery and labour input are to be arrange by the contractor.

16) All amendments issued to the Haryana PWD schedule of rates will be applicable on the contract schedule of rates.

17) As and when contractor gives condition that arrangement of water shall be made by the department, it shall be deemed that all the charges incurred thereon shall be borne by the department and recovery on the total work done shall be made from him.

18) No claim will be entertained from the contractor in case of any mistake in description, rate or unit occurred on account of typing or comparison or over sight. If there is any mistake, the same shall be rectifiable by the 'Engineer' at any stage as per Haryana PWD schedule of rates 2021 and all the amendments received from time to time.

19) The premium should be quoted above or below for HSR items and individual rates for NS Items. No conditional offer should be made. In case any conditions is tendered, this will be considered as null and void and only the premium or discount quoted by the tender shall be accepted. In case any tender refused to accept the above afterwards, his earnest money will be forfeited or the action as per conditions of Bid Security Declaration Form shall be taken.

20) Tender premium will not be allowed on new N.S. items.

21) Rate quoted by the contractor for each N.S. item shall be for complete job including all taxes (but excluding GST) , carriage etc. Nothing extra on any account shall be paid.

22) The payment will be made according to the actual work done by the contractor.

BILL OF QUANTITIES

Name of work:-Estimate for Construction of District Head Quarter Office Building for Excise and Taxation Department in Sector-3 at Fatehabad in Fatehabad District.

HSR ITEMS:

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
1.	[10.1]Providing and laying of base course of floors consisting of 100 mm thick cement 1:8:16 and 100 mm sand or stone filling. [Through Rate]	248.92	Sqm		
2.	[10.107]Providing and laying tactile tile (for vision impaired persons as per standards) of size 300x300x9.8mm having with water absorption less than 0.5% and conforming to IS:15622 of approved make in all colours and shades in for outdoor floors such as footpath, court yard, multi modals location etc., laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes and patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge. 0 0 0 [Through Rate]	172.59	Sqm		
3.	[10.22.1]Providing and fixing glass strips in joints of terrazzo/ cement concrete floors. 1. 40 mm wide and 4 mm thick [Through Rate]	247.51	Metre		
4.	[10.26.2]Providing and laying of precast terrazzo tiles 20 to 22 mm thick with graded marble chips of size up to 12 mm, laid in floors, and landings, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement:4 coarse sand) : 2. Medium shade pigment using 50% white cement and 50% ordinary cement [Through Rate]	13.39	Sqm		
5.	[10.28.2]Providing and laying of precast terrazzo tiles 20 to 22 mm thick with graded marble chips of sizes up to 12 mm, in skirting and risers of steps not exceeding 30 cm in height, on 12 mm thick cement plaster 1:3 (1 cement : 3 coarse sand), jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete with tiles of : 2. Medium shades pigment using 50% white cement and 50% ordinary cement [Through Rate]	1.38	Sqm		
6.	[10.29.1]Providing and laying of chequered terrazzo tiles 20 to 22 mm thick with graded marble chips of size up to 6 mm in floors, jointed with neat cement slurry mixed with pigment to match the shade of the tiles, including rubbing and polishing complete, on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) : 1. Light shade pigment using white cement [Through Rate]	712.75	Sqm		
7.	[10.33.1]Providing and laying of brick on edge flooring with bricks of class designation 7.5 on a bed of 12 mm cement mortar, including filling the joints with same mortar, with common burnt clay non modular bricks: 1. 1:4 (1 cement : 4 coarse sand) [Through Rate]	17.29	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
8.	[10.37.1]Providing and fixing of Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : 1. 25 mm thick [Through Rate]	1496.03	Sqm		
9.	[10.38]Providing and fixing of Kota stone slabs 20 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement: 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete. [Through Rate]	69.15	Sqm		
10.	[10.4]Providing and laying of screed of 50 mm thick cement concrete 1:8:16 to be laid below the topping. [Through Rate]	6252.86	Sqm		
11.	[10.42]Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab. [Through Rate]	67.11	Metre		
12.	[10.50.1]Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing , curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge. 1. Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent. [Through Rate]	2389.86	Sqm		
13.	[10.51]Providing and fixing granite stone in all shades 15mm to 18 mm thick in skirting /dado, risers of steps, pillars and wall facing, laid in any pattern as specified over base of 12mm thick cement coarse sand mortar 1:3 and jointed with white cement slurry mixed with pigment to match the shade of Granite including labour for fixing cramps pins and dowels etc. [Through Rate]	271.72	Sqm		
14.	[10.58]Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete. [Through Rate]	1228.97	Sqm		
15.	[10.59]Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick bed of cement mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including pointing the joints with white cement and matching pigments etc., complete. [Through Rate]	14.28	Sqm		
16.	[10.63.3]Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS: 15622, of approved make, in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete. 3. Size of Tile 800x800 mm [Through Rate]	2052.91	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
17.	[10.67.3]Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours and shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement and matching pigments etc. complete. 3. Size of Tile 800x800 mm [Through Rate]	123.18	Sqm		
18.	[10.70.2]Extra for grouting the joints of floor tiles having joints of 3 mm width, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling / grouting and finishing complete as per direction of Engineer-in-charge. 2. Size of Tile 600x600 mm [Through Rate]	1088.03	Sqm		
19.	[10.77]Providing and laying 80mm thick factory made cement concrete interlocking paver block of M -35 grade made by block making machine with strong vibratory compaction, of approved size, design and shape, laid in required colour and pattern over (BIS 15658:2006) and including 60mm thick compacted bed of coarse sand, filling the joints with line sand etc. all complete as per the direction of Engineer-in-charge. [Through Rate]	88.23	Sqm		
20.	[11.4.2]10 mm thick cement plaster 2. 1:3 (1 cement: 3 fine sand) [Through Rate]	6619.98	Sqm		
21.	[11.5.1]12 mm cement plaster of mix : 1. 1:2 (1 cement: 2 fine sand) [Through Rate]	70.92	Sqm		
22.	[11.5.3]12 mm cement plaster of mix : 3. 1:4 (1 cement: 4 fine sand) [Through Rate]	551.81	Sqm		
23.	[11.5.4]12 mm cement plaster of mix : 4. 1:6 (1 cement: 6 fine sand) [Through Rate]	10790.82	Sqm		
24.	[11.6.1]15 mm cement plaster on the rough side of single or half brick wall of mix : 1. 1:4 (1 cement: 4 fine sand) [Through Rate]	551.81	Sqm		
25.	[11.6.2]15 mm cement plaster on the rough side of single or half brick wall of mix : 2. 1:6 (1 cement: 6 fine sand) [Through Rate]	12109.71	Sqm		
26.	[11.60]Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete. [Through Rate]	30389.84	Sqm		
27.	[11.64.1]Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade : 1. New work (two or more coats) over and including water thinnable priming coat with cement primer [Through Rate]	24631.53	Sqm		
28.	[11.67.1]Applying one coat of water thinnable cement primer of approved brand and manufacture on wall surface : 1. Water thinnable cement primer [Through Rate]	241.14	Sqm		
29.	[11.68.3]Applying priming coat: 3. With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/ steel works [Through Rate]	2269.54	Sqm		
30.	[11.76]Preparation of ply wood surface for painting including sand papering the surface and applying filling with approved quality filler consisting of white lead, linseed oil, varnish and chalk mitti including finishing the surface to required finish complete. [Through Rate]	1338.56	Sqm		
31.	[11.77]Applying pink primer or aluminium priming coat on wood work including preparation of surface, Knotting and stopping etc. [Through Rate]	1337.91	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
32.	[11.78]Painting two coats excluding priming coat with synthetic enamel paint in all shades on new wood work or metallic or plastered or concrete surfaces to give an even shade. [Through Rate]	1338.56	Sqm		
33.	[11.82.1]Painting the wooden / metal surface with synthetic enamel paint of approved brand and manufacture to give an even shade : 1. Two or more coats on new work [Through Rate]	2382.35	Sqm		
34.	[11.94.1]Finishing walls with textured exterior paint of required shade : 1. New work (Two or more coats applied @ 3.28 litre/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/10 sqm [Through Rate]	433.34	Sqm		
35.	[11.95.1]Finishing walls with Acrylic Smooth exterior paint of required shade : 1. New work (Two or more coat applied @ 1.67 litre/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/10 sqm) [Through Rate]	4254.83	Sqm		
36.	[12.10.2.2]Providing and fixing glazed shutters for doors, windows and clerestory windows using 4 mm thick float glass panes, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws. 2.2. Kiln seasoned and chemically treated Hollock wood 30 mm thick [Through Rate]	160.88	Sqm		
37.	[12.102.1]Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 1. 125 mm [Through Rate]	612.00	Each		
38.	[12.102.2]Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 2. 100 mm [Through Rate]	1100.00	Each		
39.	[12.102.3]Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 3. 75 mm [Through Rate]	574.00	Each		
40.	[12.113.2]Providing and fixing wooden handrail of required shape and design, with necessary screws, including labour, for rounding, vertical and horizontal bends and curves complete fixed in position. 2. commercial hard wood, such as Hollock, champ, chikrassy and chaplash, etc., (Non- coniferous timber other than teak, conforming to I.S.specification no.1003,kiln seasoned) [Through Rate]	0.81	cum		
41.	[12.157.1.1]Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, panelling and dash fasteners to be paid for separately) : 1.1. For fixed portion Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15) [Through Rate]	5484.48	Kg.		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
42.	[12.157.2.1]Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, panelling and dash fasteners to be paid for separately) : 2.1. For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately) Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15) [Through Rate]	2400.44	Kg.		
43.	[12.158.2]Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade l Type ll, in panelling fixed in aluminium doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge. 2. Pre-laminated particle board with decorative lamination on both sides [Through Rate]	158.05	Sqm		
44.	[12.159.2]Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item): 2. With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm) [Through Rate]	257.17	Sqm		
45.	[12.160.1]Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight up to 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge. 1. With stainless steel cover plate minimum 1.25 mm thickness [Through Rate]	60.00	Each		
46.	[12.167.1]Providing and fixing aluminium round shape handle of outer dia 100 mm with SS screws etc. complete as per direction of Engineer-in-charge 1. Anodized (AC 15) aluminium [Through Rate]	120.00	Each		
47.	[12.170]Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment). [Through Rate]	769.65	Kg.		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
48.	[12.176.1]Providing and fixing machine moulded aluminium covering of approved pattern and design, made out of machine cut aluminium sheet and machine holed for receiving dash fastener, over expansion joints on vertical surfaces/ceiling floors, the fixing on plate in one row on one side of joint only shall be done with stainless steel dash fasteners of 8 mm dia and 75 mm long bolt including providing aluminium washers 2 mm thick and 15 mm dia , at a staggered pitch of 200mm centre to centre including drilling holes in the receiving surface and providing expandable plastic sleeves in holes etc. complete as per direction of Engineer-in-charge. 1. Anodised aluminium sheet 2.5mm thick (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15) [Through Rate]	374.05	Kg.		
49.	[12.19.2.1.2]Providing and fixing wire gauge shutters using galvanized M.S. wire gauge of average width of aperture 1.4 mm in both directions with wire of dia 0.63 mm, for doors, windows and clerestory windows with hinges and necessary screws : 2.1.2. 30 mm thick shutters with ISI marked M.S. pressed butt hinges bright finished of required size Kiln seasoned and chemically treated Hollock wood [Through Rate]	160.88	Sqm		
50.	[12.36.1]Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters. 1. 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws [Through Rate]	1.88	Sqm		
51.	[12.36.3]Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters. 3. 25 mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. Piano hinges IS : 3818 marked with necessary screws [Through Rate]	1.41	Sqm		
52.	[12.37.1]Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters: 1. 35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws [Through Rate]	256.20	Sqm		
53.	[12.37.3]Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters: 3. 25 mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws [Through Rate]	123.77	Sqm		
54.	[12.60.1]Providing and fixing bright finished brass hasp and staple (safety type) with necessary screws etc. complete : 1. 150 mm [Through Rate]	25.00	Each		
55.	[12.64.1]Providing and fixing oxidised M.S. double acting spring hinges with necessary screws etc. complete. 1. 150 mm [Through Rate]	25.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
56.	[12.84]Providing and fixing 50 mm bright finished brass cup board or wardrobe knob of approved quality with necessary screws. [Through Rate]	16.00	Each		
57.	[12.88]Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight up to 35 kg and door width up to 700 mm), with necessary accessories and screws etc. complete. [Through Rate]	156.00	Each		
58.	[12.97.1]Providing and fixing ISI marked aluminium butt hinges anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with necessary screws etc. complete: 1. 125x75x4 mm [Through Rate]	931.00	Each		
59.	[12.97.3]Providing and fixing ISI marked aluminium butt hinges anodised (anodic coating not less than grade AC 10 as per IS: 1868) transparent or dyed to required colour or shade with necessary screws etc. complete: 3. 100x75x4 mm [Through Rate]	598.00	Each		
60.	[12.98.1]Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete : 1. 300x16 mm [Through Rate]	365.00	Each		
61.	[12.98.2]Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete : 2. 250x16 mm [Through Rate]	70.00	Each		
62.	[12.99.3]Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 3. 200x10 mm [Through Rate]	614.00	Each		
63.	[12.99.4]Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 4. 150x10 mm [Through Rate]	349.00	Each		
64.	[12.99.5]Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete : 5. 100x10 mm [Through Rate]	574.00	Each		
65.	[13.10.2]Providing and fixing glass panes with putty and glazing clips in steel doors, windows, clerestory windows, all complete with : 2. 5.5 mm thick glass panes [Through Rate]	677.49	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
66.	[13.21.1]Supply and fixing Windows frames (Chowkhats) including mullions consisting frame fabricated from sheet roll formed out of 1.2mm thick galvanized sheet as per IS:277 (Base steel as per IS 513) with zinc of 120 gm/sqm and Powder coated with pure Polyester powder up to 50 microns (as per approved colour), 3 Nos. 100mm butt - hinges 2mm thick, 6 Nos. 1.2mm thick CRCA electroplated stiffner, 6 Nos. M.S hold fast with split and tail welded to stiffner plate 200mm long, receiver for aldrop, weld less corner assembly with brackets and screws, M.S tie rod 50mm x 25mm to be fixed at bottom finished with powder coated total thickness of coating 0.6mm of approved shade, fixed in position including the cost of cement concrete for 1:2:4 for fixing lugs complete in all respects as per drawing, design, specification and entire satisfaction of Engineer-in-charge. 1. Door Frame of size 80mm x 50mm with 37mm wide single rebate for 35mm door shutter [Through Rate]	1958.63	Metre		
67.	[13.22.1]Supply and fixing Windows frames (Chowkhats) including mullions consisting frame fabricated from sheet roll formed out of 0.58mm thick galvanized sheet (Base steel as per IS 513) with zinc of 120 gm/sqm steel sheet pre coated (as per approved colour) with Polyester paint of 12-16 microns thickness under coat of EPOXY primer and back coat with ALKYD backer of 5-7 microns, total sheet thickness with coating 0.58mm of approved shade, weld less corner assembly with brackets and screws, fixed in position by means of PVC and metal hold fastener with PVC cap complete in all respects as per drawing, design, specification and entire satisfaction of Engineer-in-charge. 1. Windows Outer frame of size 72mm x 55mm and central mullion 72mm x 50mm with Double rebate [Through Rate]	2172.45	Metre		
68.	[13.28]Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete. [Through Rate]	25620.00	Kg.		
69.	[13.29.2]Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required. 2. In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works [Through Rate]	46395.56	Kg.		
70.	[13.37.1]Supplying and fixing rolling shutters of approved make, made of required size M.S. laths, interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete, including the cost of providing and fixing necessary 27.5 cm long wire springs manufactured from high tensile steel wire of adequate strength conforming to IS: 4454 - part 1 and M.S. top cover of required thickness for rolling shutters. 1. 80x1.25 mm M.S. laths with 1.25 mm thick top cover [Through Rate]	22.42	Sqm		
71.	[13.39.1]Extra for providing mechanical device chain and crank operation for operating rolling shutters. 1. Exceeding 10.00 sqm and up to 16.80 sqm in the area [Through Rate]	22.42	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
72.	[13.41]Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories and stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.). [Through Rate]	2020.25	Kg.		
73.	[17.14.3]Granular Sub-Base with Close Graded Material - (Table:- 400-1) Plant mix method Construction of granular sub-base by providing Material as per Grading III (Table 400-I of MORTandH 5th revision) mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per technical clause 401 of MORTandH specifications 3. Grading III material [Through Rate]	573.19	cum		
74.	[17.44]Dry Lean Cement Concrete Sub- base Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, aggregate cement ratio not to exceed 15:1, aggregate gradation after blending to be as per table 600-1, cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant, transported to site, laid with a paver with electronic sensor, compacting with 8-10 tonnes vibratory roller, finishing and curing, as per clause 601 of MORT&H specifications [Through Rate]	283.45	cum		
75.	[17.45]Cement Concrete Pavement Construction of un-reinforced M-40 grade concrete pavement with dowel jointed, over a prepared sub base with 43 grade OPC cement concrete coarse and fine aggregate conforming to IS 383, maximum size of coarse aggregate not exceeding 25 mm, mixed in a fully computerised batching and mixing plant as per approved mix design, transported to site in transit mixer with a fixed form or slip form paver, spread, compacted and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, dowel bar, tie rod, admixtures as approved, curing compound, finishing to lines and grades as per drawing, complete as per clause 602 of MORT&H specifications. [Through Rate]	641.63	cum		
76.	[17.5.3]Compacting Original Ground 3. Compaction of Earthwork Compaction of & preparation of sub grade including loosening, levelling of earth 225 mm thick top layer, rough dressing of soil, final dressing of earth to give level, camber, watering, rolling with road roller, compacting the bed to achieve minimum dry density as given in the Table 3000-2 as per technical clause 305 of MORT&H specifications [Through Rate]	2806.76	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
77.	[17.6]Construction of Embankment with Material obtained from Borrow pits NA Construction of Embankment CBR 8% (for new road/ raising/ berms/ etc.) with approved material obtained from borrow pits, including compensation of earth with all lead and lift transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2, as per technical clause 305 of MORT&H specifications. [Through Rate]	1901.99	cum		
78.	[20.24.6]Drilling and tapping cast iron pipe lines of all diameters and screwing in ferrule and connections 6. Ferrule size 40 mm [Through Rate]	3.00	Each		
79.	[20.25.1]Cutting holes up to 23 cm square through brick work in mud walls for pipes and making good including repointing, replastering and finishing according to existing finish where required. 1. 11.43 cm thick wall [Through Rate]	122.00	Each		
80.	[20.25.2]Cutting holes up to 23 cm square through brick work in mud walls for pipes and making good including repointing, replastering and finishing according to existing finish where required. 2. 22.86 cm thick wall [Through Rate]	235.00	Each		
81.	[20.28.2]Cutting holes up to 23 cm square for pipes in floor and roofs of cement concrete reinforced concrete or reinforced brick work and making good including, repointing, replastering, replacing bitumen and colour or white washing where required. 2. 115 mm thickness of roof or floor [Through Rate]	72.00	Each		
82.	[20.28.3]Cutting holes up to 23 cm square for pipes in floor and roofs of cement concrete reinforced concrete or reinforced brick work and making good including, repointing, replastering, replacing bitumen and colour or white washing where required. 3. 150 mm thickness of roof or floor [Through Rate]	90.00	Each		
83.	[20.29.1]Labour our fixing G.I. or W.I. pipe sleeve pieces in holes in walls, floors, and roofs rounds pipes including all cutting and wastage 1. 15 mm internal diameter of sleeve pipe [Through Rate]	5.00	Metre		
84.	[20.29.2]Labour our fixing G.I. or W.I. pipe sleeve pieces in holes in walls, floors, and roofs rounds pipes including all cutting and wastage 2. 20 mm internal diameter of sleeve pipe [Through Rate]	5.00	Metre		
85.	[20.29.3]Labour our fixing G.I. or W.I. pipe sleeve pieces in holes in walls, floors, and roofs rounds pipes including all cutting and wastage 3. 25 mm internal diameter of sleeve pipe [Through Rate]	5.00	Metre		
86.	[20.29.4]Labour our fixing G.I. or W.I. pipe sleeve pieces in holes in walls, floors, and roofs rounds pipes including all cutting and wastage 4. 32 mm internal diameter of sleeve pipe [Through Rate]	3.00	Metre		
87.	[20.29.5]Labour our fixing G.I. or W.I. pipe sleeve pieces in holes in walls, floors, and roofs rounds pipes including all cutting and wastage 5. 40 mm internal diameter of sleeve pipe [Through Rate]	3.00	Metre		
88.	[20.49.1]Bailing out water from the trenches for making new connections in fully charged pipe-lines including cleaning trimming and dressing the trenches to correct alignment and grade as required by the Engineer-in-charge. Size of the main with which connection is to be made. 1. Up to 200 mm internal diametre [Through Rate]	3.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
89.	[21.28]Providing and fixing steel bar embedded plastic steps of size 263mm x 165mm of orange colour, confirming to specification in pump chambers, manholes etc., having minimum 3mm thick polypropylene polymer confirming to is:10910 encapsulated on 12mm dia ribbed steel bars per IS :1786. The rate include cost of setting the same to correct lines and levels duly embedded in 1:2:4 cement concrete including carriage, loading, uploading, stacking, handling, re-handling etc., complete in all respect to the satisfaction of Engineer-in-charge [Through Rate]	48.00	Each		
90.	[21.84.3]Constructing brick masonry inspection Chamber sizes as given below up to 0.60 metre average depth in cement mortar 1:5 lime concrete with 40 per cent lime mortar 2:3 in foundation cement concrete 1:2:4 benching 12mm thick cement plaster 1:2 with a floating coat of 1 mm thick of neat cement R.C.C. 1:2:4 slab 100 mm thick/cement concrete topping, 50mm thick with 455mmx455mm / 455mm x610mm inside light duty C.I. inspection chamber cover and frame weight as per I.S.I. specification painted with 3 coats of black bitumastic superior paint complete as per standard design. 3. Size 600 mm X900 mm inside (with 455 mm x 455 mm cover and frame light duty single seal weighing 20 kg with R.C.C. slab) [Through Rate]	12.00	Each		
91.	[21.85.3]Extra for every 0.30 metre depth of Inspection chamber 3. 600 mm x 900 mm inside [Through Rate]	3.60	Per 0.30 metre depth		
92.	[21.94.3]Providing salt glazed stone ware pipes grade ‘A’ in standard length of 600 mm each pipe marked with IS: 651 and their lowering, cutting, jointing and testing as described in item No. 21.38, 21.39, item 21.40 including the cost of jointing materials as well as carriage, loading, unloading, stacking, handling, re-handling etc. complete in all respects to the satisfaction of Engineer-in-charge. 3. 200mm i/d [Through Rate]	269.56	Per Mtr.		
93.	[21.94.4]Providing salt glazed stone ware pipes grade ‘A’ in standard length of 600 mm each pipe marked with IS: 651 and their lowering, cutting, jointing and testing as described in item No. 21.38, 21.39, item 21.40 including the cost of jointing materials as well as carriage, loading, unloading, stacking, handling, re-handling etc. complete in all respects to the satisfaction of Engineer-in-charge. 4. 250mm i/d [Through Rate]	235.19	Per Mtr.		
94.	[21.95.1]Providing lowering cutting jointing and testing RCC pipe class NP3 as per IS-458-2003 with spigot and socketed joints manufactured with ISI marked sulphate resistance cement as per ISI 12330 with rubber rings ISI marked antiternmite as required at site in to trenches for all depths and laying out the same to correct alignment gradients and levels including dressing and trimming and cutting of concrete beds and side of trenches, if required jointing with rubber rings in trenches and jointing with 1:3/2 cement sand mortar and with end dowels filled with 1:3/2 cement sand mortar and finishing the joints at an angle of 45 degree with faces of spigot of socket joints cutting and finishing the cut surface to a uniform finish etc. as fully described in item No. 21.38, item 21.44, item 21.45, and item 21.46 including cartage loading and unloading complete in all respects. the internal diametric of the sewer being: 1. 350 mm [Through Rate]	280.39	Metre		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
95.	[21.95.2]Providing lowering cutting jointing and testing RCC pipe class NP3 as per IS-458-2003 with spigot and socketed joints manufactured with ISI marked sulphate resistance cement as per ISI 12330 with rubber rings ISI marked antiternmite as required at site in to trenches for all depths and laying out the same to correct alignment gradients and levels including dressing and trimming and cutting of concrete beds and side of trenches, if required jointing with rubber rings in trenches and jointing with 1:3/2 cement sand mortar and with end dowels filled with 1:3/2 cement sand mortar and finishing the joints at an angle of 45 degree with faces of spigot of socket joints cutting and finishing the cut surface to a uniform finish etc. as fully described in item No. 21.38, item 21.44, item 21.45, and item 21.46 including cartage loading and unloading complete in all respects. the internal diametric of the sewer being: 2. 400 mm [Through Rate]	35.84	Metre		
96.	[22.10.2.2]Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required : 2.2. Kitchen sink without drain board610x460 mm bowl depth 200 mm [Through Rate]	8.00	Each		
97.	[22.101.2.1]Providing and fixing Unplasticised PVC connection pipe with brass unions : 2.1. 45 cm length 15 mm nominal bore [Through Rate]	204.00	Each		
98.	[22.102.2]Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet : 2. 150 mm diameter [Through Rate]	2.00	Each		
99.	[22.103.2]Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete : 2. 20 mm nominal bore [Through Rate]	22.00	Each		
100.	[22.103.3]Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete : 3. 25 mm nominal bore [Through Rate]	25.00	Each		
101.	[22.104.1]Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 : 1. 15 mm nominal bore [Through Rate]	56.00	Each		
102.	[22.106.1]Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms. 1. 15 mm nominal bore [Through Rate]	100.00	Each		
103.	[22.107.1]Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931. 1. 15 mm nominal bore [Through Rate]	204.00	Each		
104.	[22.117]Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour, weighing not less than 105 gms. [Through Rate]	46.00	Each		
105.	[22.119.2]Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour. 2. 600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms. [Through Rate]	46.00	Each		
106.	[22.12.1]Providing and fixing CP Brass Single lever telephonic wall mixer of quality and make as approved by Engineer in charge. 1. 15 mm nominal dia [Through Rate]	2.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
107.	[22.14.2.1]Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete. 2.1. Flexible pipe 32 mm dia [Through Rate]	38.00	Each		
108.	[22.15]Providing and fixing CP Brass 32mm size Bottle Trap of approved quality and make and as per the direction of Engineer-in-charge. [Through Rate]	38.00	Each		
109.	[22.16]Providing and fixing 40mm i/d G.I. waste pipe embedded in walls up to floor level including cost of union and plumber joint [Through Rate]	8.00	Each		
110.	[22.164.1]Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design : 1. 100 mm diameter S.W. pipe [Through Rate]	821.00	Metre		
111.	[22.166.1.1]Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design: 1.1. 100x100 mm size P type With common burnt clay non-modular bricks of class designation 7.5 [Through Rate]	25.00	Each		
112.	[22.17.1]Providing and fixing 40mm i/d chromium plated trap with chromium plated pipe to wall with walflange completed for use with sinks 1. With Bottle Trap (Indian make) [Through Rate]	8.00	Each		
113.	[22.179.1.1]Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design: 1.1. Inside dimensions 455x610 mm and 45 cm deep for single pipe line : With common burnt clay non-modular bricks of class designation 7.5 [Through Rate]	13.00	Each		
114.	[22.179.2.1]Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design: 2.1. Inside dimensions 500x700 mm and 45 cm deep for pipe line with one or two inlets : With common burnt clay non-modular bricks of class designation 7.5 [Through Rate]	13.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
115.	[22.179.3.1]Constructing brick masonry chamber for underground C.I. inspection chamber and bends with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover with frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg), R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:5:10 fine sand : 10 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand), finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete as per standard design: 3.1. Inside dimensions 600x 850 mm and 45 cm deep for pipe line with three or more inlets : With common burnt clay non-modular bricks of class designation 7.5 [Through Rate]	13.00	Each		
116.	[22.182]Providing and fixing rectangular high density polyethylene water storage loft tank with cover, conforming to ISI : 12701, colour of opaque white or as approved by Engineer-in-charge. The rate includes making necessary holes for inlet, outlet and over flow pipes. The base support i/c fittings and fixtures for tank shall be paid separately. [Through Rate]	22000.00	Litre		
117.	[22.190.1.1]Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (Zone-III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design : 1.1. Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) : With common burnt clay non-modular bricks of class designation 7.5 [Through Rate]	10.00	Each		
118.	[22.190.2.1]Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (Zone-III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design : 2.1. Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) : With common burnt clay non-modular bricks of class designation 7.5 [Through Rate]	10.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
119.	[22.190.3.1]Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (Zone-III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design : 3.1. Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (heavy duty) 560 mm internal diameter, total weight of cover and frame to be not less than 208 kg (weight of cover 108 kg and weight of frame 100 kg) : With common burnt clay non-modular bricks of class designation 7.5 [Through Rate]	10.00	Each		
120.	[22.202]Supplying and fixing C.I. cover 300x300 mm without frame for gully trap (standard pattern) the weight of cover to be not less than 4.5 kg [Through Rate]	25.00	Each		
121.	[22.205.1]Constructing brick masonry road gully chamber 50x45x60 cm with bricks in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design : 1. With common burnt clay non-modular bricks of class designation 7.5 [Through Rate]	29.00	Each		
122.	[22.209]Providing and fixing 600x450 mm bevelled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete. [Through Rate]	56.00	Each		
123.	[22.211]Providing and fixing 600x120x5 mm glass shelf with edges round off, supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete. [Through Rate]	46.00	Each		
124.	[22.212.1.2]Providing and fixing in position best Indian make coat and hat hooks fixed into wall with C.P. brass screws and rawl plugs etc. complete including cutting and making good the walls etc. 1.2. C.P Brass Two Way [Through Rate]	248.00	Per Set		
125.	[22.213.1]Providing and fixing in position best Indian make C.P. brass Tooth Brush cum Tooth Paste Holder fixed in with rawl plugs with C.P. brass screws complete including cutting and making good the walls etc. 1. Tooth Brush-cum-Tooth Paste holder [Through Rate]	38.00	Per Set		
126.	[22.22.1]Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required: 1. White vitreous chinaware Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests [Through Rate]	14.00	Each		
127.	[22.221.2]Providing and fixing in position vitreous chinaware white lavatory suites of approved make (to the approval of Engineer-in-charge) including Rack Bolt Screw Pair 115mm long without CP fittings complete in all respect. 2. Size 550 mm x 400 mm x 815 mm [Through Rate]	38.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
128.	[22.222.2.2]Providing and fixing in position singel socket SWR UPVC soil waste or antisyphonage pipes as per IS 13592 of E.D.C manufacture or of any other reputed firm including cutting, jointing, wastage, but excluding cost of jointing. 2.2. Single Socket Type B 110mm o/d SWR UPVC pipe lines laid complete [Through Rate]	1121.03	Metre		
129.	[22.222.2.4]Providing and fixing in position singel socket SWR UPVC soil waste or antisyphonage pipes as per IS 13592 of E.D.C manufacture or of any other reputed firm including cutting, jointing, wastage, but excluding cost of jointing. 2.4. Single Socket Type B 75mm o/d SWR UPVC pipe lines laid complete [Through Rate]	825.99	Metre		
130.	[22.25.1]Providing and fixing white vitreous chinaware flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required : 1. One urinal basin with 5 litre white P.V.C. automatic flushing cistern [Through Rate]	26.00	Each		
131.	[22.33]Providing and fixing white vitreous chinaware extended wall mounting water closet of size 780x370x690 mm of approved shape including providing and fixing white vitreous chinaware cistern / PVC cistern (with brass fitting) into the wall with dual flush fitting, of flushing capacity 3 litre/ 6 litre (adjustable to 4 litre/ 8 litres), including seat cover, and cistern fittings, nuts, bolts and gasket etc complete. [Through Rate]	32.00	Each		
132.	[22.42.1]Providing and fixing toilet paper holder : 1. C.P. brass [Through Rate]	34.00	Each		
133.	[22.50.1.2.1]Providing and fixing partitions for different type of urinals. 1.2.1. Vitreous Chinaware Partition plate. Large size 835mm x 355 mm White [Through Rate]	26.00	Each		
134.	[22.53.1]Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including cost of cutting holes and making good the walls etc. : 1. For 100 mm dia pipe [Through Rate]	185.00	Each		
135.	[22.53.2]Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including cost of cutting holes and making good the walls etc. : 2. For 75 mm dia pipe [Through Rate]	225.00	Each		
136.	[22.80.2.1]Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors : 2.1. 100 mm inlet and 75 mm outlet Sand cast iron S&S as per IS - 3989 [Through Rate]	90.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
137.	[22.85.4]Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot and cold water supply, including all CPVC plain and brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes and fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. 4. 32 mm nominal outer dia Pipes [Through Rate]	1341.62	Metre		
138.	[22.85.5]Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot and cold water supply, including all CPVC plain and brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes and fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. 5. 40 mm nominal outer dia Pipes [Through Rate]	223.93	Metre		
139.	[22.86.1]Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot and cold water supply, including all CPVC plain and brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes and fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. 1. 15 mm nominal outer dia Pipes [Through Rate]	507.01	Metre		
140.	[22.86.2]Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot and cold water supply, including all CPVC plain and brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes and fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. 2. 20 mm nominal outer dia Pipes [Through Rate]	635.98	Metre		
141.	[22.86.3]Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot and cold water supply, including all CPVC plain and brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes and fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. 3. 25 mm nominal outer dia Pipes [Through Rate]	610.75	Metre		
142.	[22.94.1]Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) : 1. 15 mm nominal bore [Through Rate]	73.00	Each		
143.	[22.94.2]Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) : 2. 20 mm nominal bore [Through Rate]	96.00	Each		
144.	[22.94.3]Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) : 3. 25 mm nominal bore [Through Rate]	55.00	Each		
145.	[22.94.4]Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) : 4. 32 mm nominal bore [Through Rate]	45.00	Each		
146.	[22.94.5]Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) : 5. 40 mm nominal bore [Through Rate]	35.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
147.	[22.98.1]Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) : 1. 25 mm nominal bore [Through Rate]	85.00	Each		
148.	[22.98.2]Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) : 2. 20 mm nominal bore [Through Rate]	45.00	Each		
149.	[22.98.3]Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) : 3. 32 mm nominal bore. [Through Rate]	25.00	Each		
150.	[22.98.4]Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) : 4. 40 mm nominal bore [Through Rate]	20.00	Each		
151.	[23.6.6.2]MS CONDUIT PIPE ONLY (SURFACE OR RECESSED) FOR ELECTRICAL POINTS 6.2. Supply and erection of MS conduit pipe 1.6 mm thick , ISI marked surface/recessed in slab/wall/ceiling etc. including cost of MS bends, inspection box and all other material required to complete the job in all respect up to the entire satisfaction of Engineer-in-Charge of work. MS pipe of 25 mm dia. [Through Rate]	800.00	Metre		
152.	[24.2.2.2]LT CABLE 2.2. Laying of underground cable 0.75 metre below ground level covered with sand and bricks including excavation and refilling of trenches.:- 16 Sq mm to 35 sqmm 2 to 4 Core [Through Rate]	800.00	Metre		
153.	[24.2.9.1]LT CABLE 9.1. Supply and erection of straight through joint (cable jointing kit) 1.1 KV grade complete with required quantity of resin, hardener, plastic mould G.P. Putty, adhesive, earth continuity, connections and fixing the same in position complete with joint etc. - Straight through Joint. For 1.5 to 6 sqmm Cable 2 Core [Through Rate]	800.00	Set		
154.	[25.1.10]Supplying, fixing, testing and commissioning of condenser water pipes / non insulated chilled water pipes of following sizes of MS C class along with necessary clamps, vibration isolators and fittings such as bends, tees etc. but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/buried in ground excavation and refilling etc. as per specification and as required complete in all respect. 10. 40mm dia. [Through Rate]	106.00	Metre		
155.	[25.1.3]Supplying, fixing, testing and commissioning of condenser water pipes / non insulated chilled water pipes of following sizes of MS C class along with necessary clamps, vibration isolators and fittings such as bends, tees etc. but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/buried in ground excavation and refilling etc. as per specification and as required complete in all respect. 3. 200mm dia. [Through Rate]	36.00	Metre		
156.	[25.1.4]Supplying, fixing, testing and commissioning of condenser water pipes / non insulated chilled water pipes of following sizes of MS C class along with necessary clamps, vibration isolators and fittings such as bends, tees etc. but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/buried in ground excavation and refilling etc. as per specification and as required complete in all respect. 4. 150mm dia. [Through Rate]	141.00	Metre		

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				In figures	In words
157.	[25.1.6]Supplying, fixing, testing and commissioning of condenser water pipes / non insulated chilled water pipes of following sizes of MS C class along with necessary clamps, vibration isolators and fittings such as bends, tees etc. but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/buried in ground excavation and refilling etc. as per specification and as required complete in all respect. 6. 100mm dia. [Through Rate]	80.00	Metre		
158.	[25.1.7]Supplying, fixing, testing and commissioning of condenser water pipes / non insulated chilled water pipes of following sizes of MS C class along with necessary clamps, vibration isolators and fittings such as bends, tees etc. but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/buried in ground excavation and refilling etc. as per specification and as required complete in all respect. 7. 80mm dia. [Through Rate]	236.00	Metre		
159.	[25.1.8]Supplying, fixing, testing and commissioning of condenser water pipes / non insulated chilled water pipes of following sizes of MS C class along with necessary clamps, vibration isolators and fittings such as bends, tees etc. but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/buried in ground excavation and refilling etc. as per specification and as required complete in all respect. 8. 65mm dia. [Through Rate]	117.00	Metre		
160.	[25.1.9]Supplying, fixing, testing and commissioning of condenser water pipes / non insulated chilled water pipes of following sizes of MS C class along with necessary clamps, vibration isolators and fittings such as bends, tees etc. but excluding valves, strainers, gauges etc. adequately supported on rigid supports duly painted/buried in ground excavation and refilling etc. as per specification and as required complete in all respect. 9. 50mm dia. [Through Rate]	96.00	Metre		
161.	[25.3.3]Supplying, fixing, testing and commissioning of Butterfly valves PN 16 rated without insulation for water circulation as per specifications. 3. 200mm dia. [Through Rate]	5.00	Each		
162.	[25.3.4]Supplying, fixing, testing and commissioning of Butterfly valves PN 16 rated without insulation for water circulation as per specifications. 4. 150mm dia. [Through Rate]	3.00	Each		
163.	[25.3.6]Supplying, fixing, testing and commissioning of Butterfly valves PN 16 rated without insulation for water circulation as per specifications. 6. 100mm dia. [Through Rate]	16.00	Each		
164.	[25.3.7]Supplying, fixing, testing and commissioning of Butterfly valves PN 16 rated without insulation for water circulation as per specifications. 7. 80mm dia. [Through Rate]	36.00	Each		
165.	[25.4.4]Supplying, fixing, testing and commissioning o NON - RETURN VALVE with dual plate of C I body SS plates vulcanized NBR seal flanged end and PN 16 pressure rating as specified. 4. 100mm dia. [Through Rate]	1.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
166.	[28.18]Providing and mixing integral crystalline admixture for water proofing treatment to RCC structures like basement raft, retaining walls, reservoir, sewage and water treatment plant, tunnels / subway and bridge deck etc. at the time of transporting of concrete into the drum of the ready-mix truck , using integral crystalline admixture @0.80% (minimum) to the weight of cement content per cubic meter of concrete) or higher as recommended by the manufacturer`s specification in reinforced cement concrete at site of work. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e. by reducing permeability of concrete by more than 90%, compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure. The crystalline admixture shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the Engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. [Through Rate]	4128.00	Kg.		
167.	[28.20.1]Providing and applying integral crystalline slurry of hydrophilic in nature for waterproofing treatment to the RCC structures like retaining walls of the basement, water tanks, roof slabs, podiums, reservoir, sewage and water treatment plant, tunnels / subway and bridge deck etc., prepared by mixing in the ratio of 5 : 2 (5 parts integral crystalline slurry : 2 parts water) for vertical surfaces and 3 : 1 (3 parts integral crystalline slurry : 1 part water) for horizontal surfaces and applying the same from negative (internal) side with the help of synthetic fibre brush. The material shall meet the requirements as specified in ACI-212-3R-2010 i.e. by reducing permeability of concrete by more than 90% compared with control concrete as per DIN 1048 and resistant to 16 bar hydrostatic pressure on negative side. The crystalline slurry shall be capable of self-healing of cracks up to a width of 0.50mm. The work shall be carried out all complete as per specification and the direction of the engineer-in-charge. The product performance shall carry guarantee for 10 years against any leakage. 1. For vertical surface two coats @ 0.70 kg per sqm [Through Rate]	1382.59	Sqm		
168.	[28.39]Water proofing of roof terraces, Basements, Retaining Walls, Water tanks etc with Zydex Zycoprime / Elastobar / Equivalent solution so as to form a water-resistant cementitious bonding coat and to form on-site seamless cross-linked elastomeric membrane on the concrete surface to reduce its porosity. Creating a cementitious elastomeric polymeric membrane of 2 coats of Elastobar and Zycoprime/Equivalent after application of Zycosil and Zycoprime Solution in New Construction. Take equal parts of Elastobar and Cement and form a paste. Add little water to the paste to make it brush able. Apply the paste on surface with brush. Leave the surface for drying for at least 4 - 6 hours to get elastomeric membrane. After this application, make one more layer of rough cementitious membrane using mixture of 1 Part of Zycoprime plus 1 Part of Cement plus 1 Part of fine sand. Apply paste on the surface with a brush to make a rough texture. Now your surface is ready to bond well with tiles/screed. [Through Rate]	2026.81	Sqm		
169.	[28.40]Providing fixing thermal insulation of ceiling (under deck insulation) with Resin Bonded Fibre glass wool conforming to IS : 8183, density 24kg / m3, 50mm thick, wrapped in 200 G Virgin Polythene bags, fixed to ceiling with metallic cleats (50x50x3 mm) @ 60 cm and wire mesh of 12.5 mm x 24 gauge wire mesh, for top most ceiling of building. [Through Rate]	1088.19	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
170.	[28.43]Providing and fixing Heat Resistant Terrace Tiles (300 mm x 300 mm x 20 mm) with SRI (solar refractive index)) 78, solar reflection) 0.70 and initial emittance) 0.75 on waterproof and sloped surface of terrace, laid on 20 mm thick cement sand mortar in the ratio of 1:4 (1 cement : 4 coarse sand) and grouting the joints with mix of white cement and marble powder in ratio of 1:1, including rubbing and polishing of the surface up to 3 cuts complete, including providing skirting up to 150 mm height along the parapet walls in the same manner. [Through Rate]	1318.99	Sqm		
171.	[28.8]`Supplying and applying waterproofing treatment for `Raft Slab` by using 1.2 mm thick fully bonded HDPE sheet membrane complying to BS8102:2009/ IS 16471-2017. The HDPE shall be virgin HDPE and not recycled, thickness of bare HDPE shall not be less than 0.8 mm coated with pressure sensitive adhesive layer and a trafficable granular top layer. The HDPE membrane shall have the following typical properties: 1. Tensile Strength :)27 Mpa (as per ASTM D412) 2. Puncture Resistance:)1000N±5% (as per ASTM E154) 3. Elongation:)500% 4. Peel adhesion to concrete:)1500N/m (as per ASTM D903 Modified) 5. Resistance to Hydrostatic Head:)70 metre (as per ASTM D751-06(2011) 6. UV exposure test (60 days): No change 7. Lap Joint Strength : 1500N/m (as per ASTM D1876) HDPE Membrane shall be installed over the entire PCC area with standard 75 mm selvedge laps and end laps overlaid with HDPE Sealed Tape as per manufacturer`s instructions. The rates are inclusive of supply and installation of membrane as per manufacturer methodology. The rates are inclusive of surface preparation, injection grouting at honeycombed areas all complete as per manufacturer methodology.  ` [Through Rate]	1834.80	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
172.	[29.6]Designing, fabricating, testing, protection, installing and fixing in position semi (grid) unitized system of structural glazing (with open joints) for linear as well as curvilinear portions of the building for all heights and all levels, including: (a) Structural analysis and design and preparation of shop drawings for the specified design loads conforming to IS 875 part III (the system must passed the proof test at 1.5 times design wind pressure without any failure), including functional design of the aluminium sections for fixing glazing panels of various thicknesses, aluminium cleats, sleeves and splice plates etc. gaskets, screws, toggles, nuts, bolts, clamps etc., structural and weather silicone sealants, flashings, fire stop (barrier)-cum-smoke seals, microwave cured EPDM gaskets for water tightness, pressure equalisation and drainage and protection against fire hazard including: (b) Fabricating and supplying serrated M.S. hot dip galvanised / Aluminium alloy of 6005 T5 brackets of required sizes, sections and profiles etc. to accommodate 3 Dimensional movement for achieving perfect verticality and fixing structural glazing system rigidly to the RCC/ masonry/structural steel framework of building structure using stainless steel anchor fasteners/ bolts, nylon separator to prevent bimetallic contacts with nuts and washers etc. of stainless steel grade 316, of the required capacity and in required numbers. (c) Providing and filling, two part pump filled, structural silicone sealant and one part weather silicone sealant compatible with the structural silicone sealant of required bite size in a clean and controlled factory / work shop environment, including double sided spacer tape, setting blocks and backer rod, all of approved grade, brand and manufacture, as per the approved sealant design, within and all around the perimeter for holding glass. (d) Providing and fixing in position flashings of solid aluminium sheet 1 mm thick and of sizes, shapes and profiles, as required as per the site conditions, to seal the gap between the building structure and all its interfaces with curtain glazing to make it watertight. (e) Making provision for drainage of moisture/ water that enters the curtain glazing system to make it watertight, by incorporating principles of pressure equalization, providing suitable gutter profiles at bottom (if required), making necessary holes of required sizes and of required numbers etc. complete. This item includes cost of all inputs of designing, labour for fabricating and installation of aluminium grid, installation of glazed units, TandP, scaffolding and other incidental charges including wastages etc., enabling temporary structures and services, cranes or cradles etc. as described above and as specified. The item includes the cost of getting all the structural and functional design including shop drawings checked by a structural designer, dully approved by Engineer-in-charge. The item also includes the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working structural glazing as specified, cleaning and protection till the handing over of the building for occupation. In the end, the Contractor shall provide a water tight structural glazing having all the performance characteristics etc. all complete as required, as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer- in-Charge. [Through Rate]	206.86	Sqm		

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				In figures	In words
173.	[32.39]Providing and fixing 50 mm thick extruded polystyrene rigid insulation board of required size between cavity wall, complying with ISO 4898:2008 and ASTM C 578-08b - type VI, having thermal conductivity of 0.0289 W/m K as per ASTM C 578 (measured as per IS 3346), compressive strength of) 350 kPa listed as per ASTM D 1621, density of 34-36 kg/m³ as per ASTM D 1622, water absorptions = 1% by volume as per ASTM D 2842, oxygen index of 24.1 to 28.1 listed as per ASTM D 2863, cell size 0.4 mm of dia (max) as per ASTM D 3576. Fire retardant property as per DIN 4102, Part 1 of class B2 and as per ASTM E84 class A, fixed with suitable water based adhesive and fastener, complete in all respect as per the direction of Engineer-in-Charge. [Through Rate]	1216.63	Sqm		
174.	[33.12]Supplying, filling, spreading and levelling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads and lifts, all complete as per direction of Engineer-in-charge. [Through Rate]	21.03	cum		
175.	[33.13]Supplying, filling, spreading and levelling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads and lifts, all complete as per direction of Engineer-in-charge. [Through Rate]	21.03	cum		
176.	[33.14]Supplying, filling, spreading and levelling coarse sand of size range 1.5 mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads and lifts, all complete as per direction of Engineer -in-charge. [Through Rate]	21.03	cum		
177.	[33.15]Gravel packing in tube well construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading and sizes as per actual requirement, all complete as per direction of Engineer-in-charge. [Through Rate]	76.30	cum		
178.	[33.6.1.3]Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire and running charges of all equipments, tools, plants and machineries required for the job, all complete as per direction of Engineer-in-charge, up to 90 metre depth below ground level. 1.3. All types of soil 400 mm dia [Through Rate]	360.00	Metre		
179.	[33.8.3]Supplying, assembling, lowering and fixing in vertical position in bore well, Unplasticised PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings and accessories etc. all complete, for all depths, as per direction of Engineer -in-charge. 3. 200 mm nominal size dia [Through Rate]	360.00	Metre		
180.	[4.12.1]Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead up to 50 m and lift up to 1.5 m, as directed by Engineer-in-charge. 1. All kinds of soil [Through Rate]	2012.61	cum		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
181.	[4.16.1.3]Excavating trenches of required width and depth for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m. 1.3. All kind of soil Pipes, cables etc, exceeding 300 mm dia but not exceeding 600 mm dia. [Through Rate]	674.66	Metre		
182.	[4.32]Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m. [Through Rate]	1704.29	cum		
183.	[4.33]Excavating, supplying and filling of local earth (including royalty) by mechanical transport up to a lead of 1 km also including ramming and watering of the earth in layers not exceeding 20 cm in trenches, plinth, sides of foundation etc. complete. [Through Rate]	156.77	cum		
184.	[4.39]Providing and injection chemical emulsion for PRE-CONSTRUCTIONAL ant termite treatment (excluding the cost of chemical emulsion) and creating a chemical barrier under and around the column pits, wall trenches, basement excavation, top surface of plinth filing junction of wall and floor, along with the external perimetre of building, expansion joints surrounding of pipes and conduit etc, complete (plinth area of the building at ground floor only shall be measured) using Chlorpyriphos/ Lindane emulsifiable concentrate of 20% [Through Rate]	1718.85	Sqm		
185.	[6.1.2]Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work below plinth level and up to Floor IV level: 2. 1:2:4 (1 cement : 2 coarse sand (zone-III) : 4 graded stone aggregate 20 mm nominal size) [Through Rate]	68.30	cum		
186.	[6.1.6]Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work below plinth level and up to Floor IV level: 6. 1:4:8 (1 Cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size) [Through Rate]	492.62	cum		
187.	[6.1.7]Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work below plinth level and up to Floor IV level: 7. 1:5:10 (1 cement : 5 coarse sand (zone-III): 10 graded stone aggregate 40 mm nominal size) [Through Rate]	66.21	cum		
188.	[6.12.1]20 mm thick cement plaster damp-proof course 1:3 with 2 coats of bitumen at 1.65 kg. per sqm, laid hot and sanded: 1. Vertical [Through Rate]	198.44	Sqm		
189.	[6.13]Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including necessary excavation, levelling and dressing and finishing the top smooth. [Through Rate]	299.95	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
190.	[6.15.1]Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above plinth level up to floor four level, excluding cost of centering, shuttering, finishing and reinforcement : 1. 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size) [Through Rate]	53.35	cum		
191.	[6.16]Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor four level, excluding the cost of centering, shuttering, finishing and reinforcement with 1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size). [Through Rate]	12.81	cum		
192.	[6.25.1]Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. 1. All works up to plinth level [Through Rate]	1719.25	cum		
193.	[6.25.2]Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. 2. All works above plinth level up to floor IV level [Through Rate]	2535.39	cum		
194.	[6.26.1]Extra for providing richer mixes up to plinth and at all floor levels. 1. Providing M-30 grade concrete instead of M-25 grade BMC/ RMC. (Note:- Cement content considered in M-30 is @ 340 kg/cum) [Through Rate]	367.91	cum		
195.	[6.27]Extra for R.C.C./ B.M.C/ R.M.C. work above floor IV level for each three floors or part thereof. [Through Rate]	746.14	cum		
196.	[6.29.1]Centering and shuttering including strutting, propping etc. and removal of form work for : 1. Foundations, footings, bases for columns [Through Rate]	1820.49	Sqm		
197.	[6.29.2]Centering and shuttering including strutting, propping etc. and removal of form work for : 2. Retaining walls, return walls, walls (any thickness) including attached pilasters, buttresses, plinth and string courses fillets, kerbs and steps etc. [Through Rate]	1663.54	Sqm		
198.	[6.29.3]Centering and shuttering including strutting, propping etc. and removal of form work for : 3. Columns, piers, abutments, pillars, posts and struts [Through Rate]	462.62	Sqm		
199.	[6.30.13]Centering and shuttering including strutting, propping etc. and removal of form for 13. Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards [Through Rate]	981.02	Sqm		
200.	[6.30.2]Centering and shuttering including strutting, propping etc. and removal of form for 2. Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc. [Through Rate]	3032.42	Sqm		

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				In figures	In words
201.	[6.30.3]Centering and shuttering including strutting, propping etc. and removal of form for 3. Suspended floors, roofs, landings, balconies and access platform [Through Rate]	7772.82	Sqm		
202.	[6.30.5]Centering and shuttering including strutting, propping etc. and removal of form for 5. Lintels, beams, plinth beams, girders, bressumers and cantilevers [Through Rate]	5809.16	Sqm		
203.	[6.30.6]Centering and shuttering including strutting, propping etc. and removal of form for 6. Columns, Pillars, Piers, Abutments, Posts and Struts [Through Rate]	2654.96	Sqm		
204.	[6.32.1]Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentring at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured). 1. Suspended floors, roofs, landing, beams and balconies (Plan area to be measured) [Through Rate]	18407.06	Sqm		
205.	[6.33.6]Steel reinforcement for R.C.C. work, where not included in the complete rate of RCC, including straightening, cutting, bending, placing in position, binding, wastage, overlaps, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire etc. complete in all respect below plinth level Note: Reinforcement shall be measured in length including hooks, if any, separately for different diameters as actually used in work , excluding overlaps. Wastage, overlaps, couplings, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire or other methods of binding & placing shall not be measured and cost of these items shall be deemed to be included in the rates for reinforcement. 6. Thermo-Mechanically Treated bars of grade Fe-500D or more [Through Rate]	165597.99	Kg.		
206.	[6.34.6]Steel reinforcement for R.C.C. work, where not included in the complete rate of RCC, including straightening, cutting, bending, placing in position, binding, wastage, overlaps, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire etc. complete in all respect above plinth level Note:- Reinforcement shall be measured in length including hooks, if any, separately for different diameters as actually used in work , excluding overlaps. Wastage, overlaps, couplings, welded joints, spacer bars, chairs, stays, hangers and annealed steel wire or other methods of binding & placing shall not be measured and cost of these items shall be deemed to be included in the rates for reinforcement. 6. Thermo-Mechanically Treated bars of grade Fe-500D or more. [Through Rate]	391043.00	Kg.		
207.	[6.39.1]Providing and fixing at or near ground level precast cement concrete in kerbs, edgings etc. as per approved pattern and setting in position with cement mortar 1:3 (1 Cement : 3 coarse sand), including the cost of required centering, shuttering complete. 1. 1:1½:3 (1 Cement: 1½ coarse sand(zone-III) : 3 graded stone aggregate 20 mm nominal size). [Through Rate]	35.79	cum		
208.	[7.21.1]Brick work with common burnt clay non-modular bricks of class designation 10.5 in foundation and plinth in: 1. Cement mortar 1:4 (1 cement : 4 coarse sand) [Through Rate]	57.43	cum		
209.	[7.21.2]Brick work with common burnt clay non-modular bricks of class designation 10.5 in foundation and plinth in: 2. Cement mortar 1:6 (1 cement : 6 coarse sand) [Through Rate]	184.84	cum		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
210.	[7.22.2]Brick work with common burnt clay non-modular bricks of class designation 10.5 in superstructure above plinth level up to floor IV level in all shapes and sizes in : 2. Cement mortar 1:6 (1 cement : 6 coarse sand) [Through Rate]	1043.22	cum		
211.	[7.28.2]Half brick masonry with common burnt clay non-modular bricks of class designation 10.5 in superstructure above plinth level up to floor IV level. 2. Cement mortar 1:4 (1 cement :4 coarse sand) [Through Rate]	2976.10	Sqm		
212.	[7.47.1]Brick work with non modular fly ash bricks conforming to IS:12894, class designation 10 average compressive strength in super structure above plinth level up to floor IV level in : 1. Cement mortar 1:4 (1 cement: 4 coarse sand) [Through Rate]	126.14	cum		
213.	[7.47.2]Brick work with non modular fly ash bricks conforming to IS:12894, class designation 10 average compressive strength in super structure above plinth level up to floor IV level in : 2. Cement mortar 1:6 (1 cement: 6 Coarse sand) [Through Rate]	1027.90	cum		
214.	[7.48.1]Brick work with modular extruded brunt fly ash clay sewer bricks (Conforming to IS: 4885) in cement mortar 1:4 (1 cement : 4 coarse sand) in foundation and plinth : 1. Cement Mortar 1:4 (1 cement: 4 coarse sand) [Through Rate]	115.69	cum		
215.	[8.27.2]Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge. 2. Granite work [Through Rate]	81.71	Metre		
216.	[8.31]Providing and fixing facing extruded clay Tile (Glass Reinforced Clay Tiles (GRC)) any size any shade and design on wall with under layer of 12 mm thick cement plaster 1:3 and jointed with neat cement matched with pigment complete as per drawings, specifications and to the entire satisfaction of engineer- in- charge. [Through Rate]	1300.01	Sqm		
217.	[9.17.1]Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10 mm and down gauge), including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : 1. In 75x75 mm deep chase [Through Rate]	627.22	Metre		
218.	[9.18]Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete. [Through Rate]	46.00	Each		
219.	[9.32.2]Providing and fixing UV stabilised fibreglass reinforced plastic sheet roofing up to any pitch, including fixing with polymer coated `J` or `L` hooks, bolts and nuts 8mm dia. G.I plain/bitumen washers complete but excluding the cost of purlins, rafters, trusses etc. The sheets shall be manufactured out of 2400 TEX panel rovigs incorporating minimum 0.3% ultra-violet stabiliser in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall conform to IS 10192 and IS 12866.The sheets shall be opaque or translucent, clear or pigmented, textured or smooth as specified. 2. 2 mm thick flat [Through Rate]	793.80	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
220.	[9.47.1]Providing and fixing tiled false ceiling of specified materials of size 595x595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanized steel sections (galvanized @ 120 grams/ sqm, both side inclusive) consisting of main `T` runner with suitably spaced joints to get required length and of size 24x38 mm made from 0.30 mm thick (minimum) sheet, spaced at 1200 mm centre to centre and cross `T` of size 24x25 mm made of 0.30 mm thick (minimum) sheet, 1200 mm long spaced between main `T` at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross `T` of length 600 mm and size 24x25 mm made of 0.30 mm thick (minimum) sheet to be interlocked at middle of the 1200x600 mm panel to form grids of 600x600 mm and wall angle of size 24x24x0.3 mm and laying false ceiling tiles of approved texture in the grid including, required cutting/making, opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc. Main `T` runners to be suspended from ceiling using GI slotted cleats of size 27 x 37 x 25 x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm GI adjustable rods with galvanised butterfly level clips of size 85 x 30 x 0.8 mm spaced at 1200 mm centre to centre along main T, bottom exposed width of 24 mm of all T-sections shall be pre-painted with polyester paint, all complete for all heights as per specifications, drawings and as directed by Engineer-in-charge. 1. GI Metal Ceiling Lay in plain Tegular edge Global white colour tiles of size 595x595 mm, and 0.5 mm thick with 8 mm drop; made of G I sheet having galvanizing of 100 gms/sqm (both sides inclusive) and electro statically polyester powder coated of thickness 60 microns (minimum), including factory painted after bending. [Through Rate]	937.79	Sqm		
221.	[9.48]Providing and Fixing 15 mm thick densified tegular edged eco friendly light weight calcium silicate false ceiling tiles of approved texture of size 595 x 595 mm in true horizontal level, suspended on inter locking metal grid of hot dipped galvanised steel sections (galvanising @ 120 grams per sqm including both side) consisting of main ‘T’ runner suitably spaced at joints to get required length and of size 24x38 mm made from 0.33 mm thick (minimum) sheet, spaced 1200 mm centre to centre, and cross “T” of size 24x28 mm made out of 0.33 mm (Minimum) sheet, 1200 mm long spaced between main’T’ at 600 mm centre to centre to form a grid of 1200x600 mm and secondary cross ‘T’ of length 600 mm and size 24 x28 mm made of 0.33 mm thick (Minimum) sheet to be inter locked at middle of the 1200x 600 mm panel to from grid of size 600x600 mm, resting on periphery walls /partitions on a Perimeter wall angle pre-coated steel of size(24x24X3000 mm made of 0.40 mm thick (minimum) sheet with the help of rawl plugs at 450 mm centre to centre with 25 mm long dry wall screws @ 230 mm interval and laying 15 mm thick densified edges calcium silicate ceiling tiles of approved texture in the grid, including, cutting/ making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required. Main ‘T’ runners to be suspended from ceiling using G.I. slotted cleats of size 25x35x1.6 mm fixed to ceiling with 12.5 mm dia and 50 mm long dash fasteners, 4 mm G.I. adjustable rods with galvanised steel level clips of size 85 x 30 x 0.8 mm, spaced at 1200 mm centre to centre along main ‘T’, bottom exposed with 24 mm of all Tsections shall be pre-painted with polyester baked paint, for all heights, as per specifications, drawings and as directed by Engineer-in-Charge. [Through Rate]	5314.13	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate to be quoted by the contractor/ society	
				In figures	In words
222.	[9.55.5]Supplying and fixing in position 60 cm long G.I. pipe class 'B' spouts in chajjas and cantilevers 5. 50 mm internal dia [Through Rate]	42.41	Metre		
223.	[9.57.2]Providing and fixing on wall face Unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 2. 110 mm diameter [Through Rate]	53.65	Metre		
224.	[9.57.3]Providing and fixing on wall face Unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes. 3. 150 mm diameter [Through Rate]	371.25	Metre		
225.	[9.58.5.2]Providing and fixing on wall face Unplasticised - PVC moulded fittings/ accessories for Unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion. 5.2. Bend 87.5° 110 mm bend [Through Rate]	24.00	Each		
226.	[9.58.5.3]Providing and fixing on wall face Unplasticised - PVC moulded fittings/ accessories for Unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion. 5.3. Bend 87.5° 150 mm bend [Through Rate]	28.00	Each		

NS ITEMS:

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate(Rs.) to be quoted by the contractor/ society	
				In figures	In words
1.	Providing, laying, testing and commissioning of `C` class heavy duty MS pipe conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required. (DSR)	518.00	Metre		
2.	25 MM dia	516.00	Metre		
3.	Providing, fixing, testing and commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 degree centigrade with required accessories.(DSR-21.1) Pendent Sprinkler	470.00	Nos.		
4.	`Supplying and fixing single headed internal hydrant valve with instantaneous Gunmetal/Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked conforming to IS 5290 (Type -A) with blank Gunmetal/Stainless Steel cap and chain as required : (DSR - 9.2) Single headed Stainless steel `	19.00	Each		
5.	SITC Of Internal Fire Hose Box , Wall Mounting Or Free Standing Type , Made Out Of Fibre Glass Reinforced Plastic Of Approved Colour Of Weather proof hose cabinet of size 750 x 600 x 250mm, to accommoate Two 15 m Length Of Delivery Hoses And A Branch Pipes With Glass Fronted Double Door With Lock And Keys And Break Glass Recess For Keys ,Complete In All Manners .MAKE: G.TECH / FIRE CUT / MINIMAX / NEW AGE/ SUPEREX / KARTAR padmini/ Omax/ Life Guard. (NS)	5.00	Each		
6.	Supplying and fixing 63 mm dia, 15 m long RRL hose pipe with 63 mm dia male and female couplings duly bound with GI wire, rivets etc. conforming to IS 636 (type-A) as required : (DSR - 16.2) Stainless Steel (Grade 304)	38.00	Each		
7.	Supplying and fixing 63 mm dia gun metal short branch pipe with 20 mm nominal internal diameter size nozzle conforming to IS 903 suitable for instantaneous connection to interconnect hose pipe coupling as required. (DSR -18.2) Stainless Steel (Grade 304)	22.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate(Rs.) to be quoted by the contractor/ society	
				In figures	In words
8.	`Supplying and fixing first-aid Hose Reel with MS construction spray painted in post office red, conforming to IS 884 complete with the following as required. 20 mm nominal internal dia water hose thermoplastic (Textile reinforced) type -2 as per IS: 12585 20 mm nominal internal dia gun metal globe valve and nozzle. Drum and brackets for fixing the equipmets on wall. Connections from riser with 25 mm dia stop gun metal valve and M.S. Pipe and socket. (DSR -17.1) 30 MM `	15.00	Each		
9.	Supplying and fixing of fire brigade connection of cast iron body with gun metal male instantaneous inlet couplings complete with cap and chain as reqd. for suitable dia MS pipe connection conforming to IS 904 as required : (DSR - 19.1) 2 way-100 mm dia M.S. Pipe	2.00	Each		
10.	12 Supplying and fixing of 4 Way Fire Brigade Connection of cast iron body with gun metal male instantaneous inlet couplings complete with cap and chain as reqd. for suitable dia MS pipe connection conforming to IS 904 as required . MAKE: AS PER LIST ATTACHED IN BID DOCUMENTS.(DSR - 19.2) 1 Each 9090 9090	1.00	Each		
11.	Supplying and fixing Air Vessel Made of 250mm mm dia, 8 mm thick MS sheet, 1200 mm in height with air release valve on top and flanged connection to riser, drain arrangement with 25 mm dia gun metal wheel valve with required accessories, pressure gauge and paintingwith synthetic enamel paint of approved shade as required. MAKE: AS PER LIST ATTACHED IN BID DOCUMENTS.(DSR 20)	2.00	Each		
12.	Supplying, installation, testing and commissioning of sprinkler flexible pipe (UL Listed) of stainless steel complete with 15 NPT on reducer thread with maximum working pressure of 175 PSI test pressure of 875 PSI (Burst) with branch line (Inlet) 25mm NPT male thread to sprinkler head (Outlet) 15mm NPT female thread with reducer, nipple, 2 side brackets, center bracket, stockbar of following sizes complete as required. (DSR-25.3) 1200MM	470.00	Each		
13.	`Providing and fixing of pressure switch in M.S. pipe line including connection etc. as required.(DSR - 22)`	4.00	Each		
14.	Supply of burden type Stainless Steel dial type pressure gauge with brass isolation valve and pipe. (For each Pump room). (NS)	24.00	Each		
15.	`Supply OF Co2 type fire extinguisher ISI mark IS code 15683 – 2006 capacity: 4.5 kg with 1 mtr long hosepipe. (NS) `	46.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate(Rs.) to be quoted by the contractor/ society	
				In figures	In words
16.	`Supply OF ABC type fire extinguisher ISI mark IS code 15683 –2006 capacity: 06 kgs 90 % MAP(Mono Amonium phosphate) pressurized with dry nitrogen . (NS) `	46.00	Each		
17.	Providing and fixing flow switch in following sizes M.S. pipe including connection etc as required. (DSR-23)	14.00	Each		
18.	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with stainless steel flange. (DSR -15.4) 250mm dia	2.00	Each		
19.	Supply of fire brigade Draw out connection confirming to IS : 4038-1986 with 150 mm Non return valve/ strainer incluiding necessary fittings the word FIRE BRIGADE DRAW OFF to be painted on the box complete all as specified and directed . (NS)	1.00	Each		
20.	Tank Refilling fire Brigade Connection 150mm dia 4 way (NS)	1.00	Each		
21.	`Supplying, installation, testing and commissioning of diesel engine driven main fire pump suitable for automatic operation and consisting of following, complete in all respects, as required : (Diesel Driven Pump)Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520. Suitable HP, 1500 RPM water cooled with radiator,diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12 /24 volts electric starting equipment, diesel tank, exhaust pipe extended upto 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required. M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required. Suitable cement concrete foundation duly plastered and with anti vibration pads. Diesel Driven Pump 2280 LPM, 88 Mtr Head (DSR -2.4) `	1.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate(Rs.) to be quoted by the contractor/ society	
				In figures	In words
22.	`Supplying, installation, testing and commissioning of Electric driven Main Fire Pump suitable for automatic operation and consisting of following, complete in all respects, as required : (a) Horizontal type, multistage, centrifugal, split casing pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520. (b) Suitable HP Squirrel cage induction motor, TEFC, synchronous speed 1500 RPM, suitable for operation on 415 volts, 3 phase 50 Hz, AC supply with IP 55 protection for enclosure, horizontal foot mounted type with Class-`F` insulation, conforming to IS-325. (c) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. (d) Suitable cement concrete foundation duly plastered with anti vibration pads. Main Fire Pump for Sprinkler Pump Discharge:2280 LPM HEAD - 88 Mtr (DSR - 1.4) `	1.00	Each		
23.	`Supplying, installation, testing and commissioning of Electric driven Main Fire Pump suitable for automatic operation and consisting of following, complete in all respects, as required : (a) Horizontal type, multistage, centrifugal, split casing pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520. (b) Suitable HP Squirrel cage induction motor, TEFC, synchronous speed 1500 RPM, suitable for operation on 415 volts, 3 phase 50 Hz, AC supply with IP 55 protection for enclosure, horizontal foot mounted type with Class-`F` insulation, conforming to IS-325. (c) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. (d) Suitable cement concrete foundation duly plastered with anti vibration pads. Main Fire Pump for HYDRANT Pump Discharge:2280 LPM HEAD - 88 Mtr (DSR - 1.4) `	1.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate(Rs.) to be quoted by the contractor/ society	
				In figures	In words
24.	Supplying, installation, testing and commissioning of electric driven pressurisation pump suitable for automatic operation and consisting of following,complete in all respects, as required : (Jockey Pump) Horizontal type, multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS : 1520. Suitable HP squirell cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz AC supply with IP 55 class of protection for enclosure, horizontal foot mounted type with Class-`F` insulation, conforming to IS : 325. M.S.fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. Suitable cement concrete foundation duly plastered and with anti vibration pads. Jockey Pump 180LPM, HEAD 88 Mtr (DSR - 3.1)	1.00	Each		
25.	`DIESEL ENGINE CONTROL Control for diesel engine comprising - Automatic/Manual selctor switch and 3 attempts starting device, timers and relays as required, push buttons, start/stop in manual mode Indicating lamp for high/ Low Lub. Oil pressure, High Water Temp and Engine on indication Battery charger suitbale for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC volt meter, and 0- 20 A DC Ammeter All standard relays and accessories for automatic operation of diesel engine System Controller Designing, Supply, Installation, Testing and commissioning of system controller to control operation of main electric fire pump, diesel pump, Pressurization pump, Terrace pump in sequence as per specification consisting of relays, timers. Sensors, annunciation window for fault indication, complete as per specification.`	1.00	Each		
26.	Providing and Fixing and Customized of Standard FHC DOOR (FIRE HOSE CABINTE)with frame suitable to fit in the duct made of not less than 18 Gauge Pressed CR Steel Sheet pressed from to Single Rebate Over Leaf Profile of size 50 mm x 70 mm. with Provision for M.S. Fasteners on each vertical jamb to fix to wall/RCC Surface also Frame shall be join with shutter by MS Concelled / Out Side Invisiable Hinges , Shutter made 18 Gauge CR Pressed Steel Sheet of 20 mm thick with of the Shutter with Hardware of L – Key Lock 3 Nos. (Top and Centre and Bottom) and Concelled PVC Handle to be fixed on the shutter The Doors are finally finished with Powder Coating as per approved shade. (NS)	7.00	Each		
27.	Providing and placing on terrace (at all floor levels) polyethylene water litre 7 8 storage tank, IS: 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. (HSR 22.181)	2000.00	Litre		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate(Rs.) to be quoted by the contractor/ society	
				In figures	In words
28.	Providing and placing on terrace (at all floor levels) polyethylene water litre 7 8 storage tank, IS: 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank. (HSR 22.181) DOMESTIC TERRACE FIRE TANK 5 KL	5000.00	Litre		
29.	Smoke Detector Conventional Type electric Shaft. (NS)	191.00	Each		
30.	Smoke Main Pannel 8 ZONE. (NS)	1.00	Each		
31.	Sub Pannel 2 ZONE. (NS)	7.00	Each		
32.	HEAT Detector Conventional Type electric Shaft.(NS)	8.00	Each		
33.	MCD (Multi-criteria Detector) (IN BASEMENT DETECTOR).(NS)	54.00	Each		
34.	MCP/TBS. (NS)	35.00	Each		
35.	HOOTER. (NS)	35.00	Each		
36.	Electric Shaft Fire Door 900*2100=1890.00 (1.89 MTR EACH DOOR (Gallexy Fire Door,SHIVAM FIRE DOOR, MANGUS FIRE PVT.LTD).(NS)	21.00	Each		
37.	Exit Signage Electrical. (NS)	57.00	Each		
38.	Lift Pressurization Fan 9500 CFM (NS)	4.00	Each		
39.	Lift Pressurization Fan Panel (NS)	4.00	Each		
40.	LIFT LOBBY PRESSURIZATION FAN 16500 CFM (NS)	2.00	Each		
41.	LIFT LOBBY PRESSURIZATION FAN PANELS (NS)	2.00	Each		
42.	STAIRCASE PRESSURIZATION FAN 16500 CFM (NS)	2.00	Each		
43.	STAIRCASE PRESSURIZATION FAN PANELS (NS)	2.00	Each		
44.	EARTHING AND LIGHTENING ARRESTOR Earthing with GL earth pipe 4.5 m long and 40 mm dia with masonry enclosures on the top etc. (HSR.24.1.1)	4.00	Each		
45.	Required open window as par NBC 500MMX500MM Required louver window = 1000mmx1000mm (NS)	27.00	Sqm		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate(Rs.) to be quoted by the contractor/ society	
				In figures	In words
46.	`Supply and Installtion of 2 Hrs. (120 minutes) Fire Rated Galaxy Make G.I- Steel Door with Powder Coating Finish As Per IS-3614 and BS-476N Part 20 and 22. Frame :- Profile to be Single Rebate of dimention 143 mm X 57 mm made out by 18 gauges G.I- Sheet, with bending radius of 1.2 mm with mortar guard and reinforcement pads for fixing of hardware. Finaly finish with stove zinc phosphate etched primer coating, with anti- corrosive Pure Polyester of 80-90 MICRON approved / desire shade. Shutter : - To be Prass Formed to 46 mm thick made out by 2 nos. of 20 gauges G.I Sheets, with lock seam joints at stile edges , have no visible screws, Internal reinforcement to be provided at top, bottom, stile edges for desired fire rating, Shutter to be factory prepared with pre-punched cut outs and reinforcements to receive ironmongery. Finaly finish with Powder Coating Finish with Powder Coating Finish with anti corrosive Pure Polyester of 80-90 MICRON approved / desire shade. (NS) `	62.00	Sqm		
47.	PA SYSTEM. (NS)	1.00	Each		
48.	Earth work in Excavation by mechanical/manual means in foundation and basement for all widths up to a depth of 4.5 Mtrs. and for in all type of soil/Rock/ boulder/kankar etc. as encountered at site including disposal of excavated material for all lead and lift. The Excavated material shall be the Property of department. This Material shall be disposed as per direction of the department. The permission required from mining department shall be obtaining by the contractor at his cost. Part of the excavated material shall be used for refilling as per direction of the Department. (NS)	8467.67	cum		
49.	Recovery of excavated earth and disposal there of to any lead and lift upto the entire satisfaction of Engineer in Charge. (Min. reserve price i.e. Rs.46/-cum) (NS). Note:- The quantity for recovery of excavated earth is minimum. If the quantity exceeds then recovery shall be done on the basis of actual quantity calculated at site.	-5290.70	cum		
50.	Cast Iron Dual Plate (Wafer Type) Check Valve, Design standard API 594. Wafer Type Design, to take lesser space than the conventional Check Valve. Being light in weight, is more rigid than the standard Swing Type Check Valve, which needs expensive foundation and special supports. Being cylindrical body, stresses are uniformly distributed. Much longer seat life because of Bronze / S.S to Rubber contact. Less wear and tear of seat surfaces. End connections are designed to suit flanges drilled to ANSI B Class-125/ASME B Class-150. Water hammering effect is minimized in this design, since the closing of valve does not depend upon any back pressure or flow. Each plate being half of the size of the swing check valve disc, provides straight flow path offering minimal resistance because of the spring`s assistance as closing of the valve initiates as soon as flow velocity dips below the designated minimum velocity. (NS) 200MM Dia (NS)	3.00	Each		

Sr. No	Description of Item with brief specification and reference to book of specification.	Quantity	Unit	Rate(Rs.) to be quoted by the contractor/ society	
				In figures	In words
51.	Cast Iron Dual Plate (Wafer Type) Check Valve, Design standard API 594. Wafer Type Design, to take lesser space than the conventional Check Valve. Being light in weight, is more rigid than the standard Swing Type Check Valve, which needs expensive foundation and special supports. Being cylindrical body, stresses are uniformly distributed. Much longer seat life because of Bronze / S.S to Rubber contact. Less wear and tear of seat surfaces. End connections are designed to suit flanges drilled to ANSI B Class-125/ASME B Class-150. Water hammering effect is minimized in this design, since the closing of valve does not depend upon any back pressure or flow. Each plate being half of the size of the swing check valve disc, provides straight flow path offering minimal resistance because of the spring`s assistance as closing of the valve initiates as soon as flow velocity dips below the designated minimum velocity. (NS) 80MM Dia (NS)	1.00	Each		

Total Bid Price (in figures) ----------

(in words) ----------

Signature_____

Notes:-

1. The item for which no rate or price has been entered in will not be paid for by the Employer when executed and shall be deemed to be covered by the other rates and prices in the Bill of Quantities (Refer: ITB Clause 13.2).

2. Unit rates and prices shall be quoted by the bidder in Indian rupees excluding GST [ITB Clause 14.1].

Section 7

Standard Forms

Letter of Acceptance

and

Other Forms

Standard Forms

(A) Letter of Acceptance

LETTER OF ACCEPTANCE

(Letterhead paper of the Employer)

No._____
Dated_____

To

_____ (Name and address of the Contractor)
_____
_____

Dear Sirs,

This is to notify you that your Bid dated _____ for execution of the _____ (name of the contract and identification number as given in the contract data) for the contract Price of Rupees _____ (amount in words and figures), as corrected and modified in accordance with the Instructions to Bidders1 is hereby accepted.

You are hereby requested to furnish Performance Security, (and additional security for unbalanced bids in terms of ITB Clause 29.3) *[where applicable]* in the form detailed in Clause 34.1 of ITB for an amount equivalent to Rs. _____ within 15 days of the receipt of this letter of acceptance valid up to 28 days from the date of expiry of **Defect Liability-cum-Maintenance Period** i.e. up to _____ and sign the contract, failing which action as stated in Clause 34.3 of ITB will be taken.

Yours faithfully,

Authorized Signature
Name and title of Signatory
Name of Employer
for and on behalf of Governor of Haryana

(B) Issue of Notice to Proceed with the Work

ISSUE OF NOTICE TO PROCEED WITH THE WORK

(Letter head of the Employer)

No. _____ Dated _____

To

_____ (Name and address of the Contractor)

_____

_____

Dear Sirs:

Pursuant to your furnishing the requisite Performance Security as stipulated in ITB Clause 34 and signing of the Contract for the work of _____

_____ at a bid price of Rs. _____.

You are hereby instructed to proceed with the execution of the said works in accordance with the contract documents.

Yours faithfully,

(Signature, name and title of signatory,
authorized to sign on behalf of Employer)

(C) Standard Form of Agreement

STANDARD FORM: AGREEMENT

This Agreement, made the _____day of _____20_____,
between_____

_____ [name and address of Employer]

(hereinafter called "the Employer") of the one part, and

_____

_____

_____

[name and address of Contractor] (hereinafter called "the Contractor" of the other part).

Whereas the Employer is desirous that the Contractor execute

_____

_____

_____

_____[name and identification number of Contract]

(hereinafter called "the Works") and the Employer has accepted the Bid by the Contractor for the execution and completion of such Works and the remedying of any defects therein at a cost of Rupees.....

NOW THIS AGREEMENT WITNESSETH as follows:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to, and they shall be deemed to form and be read and construed as part of this Agreement.

2. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy any defects therein in conformity in all aspects with the provisions of the Contract.

3. The Employer hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and remedying the defects within the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

4. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz:

i) Letter of Acceptance;
ii) Notice to Proceed with the works;
iii) Contractor's Bid;
iv) Contract Data;
v) Special Conditions of Contract and General Conditions of Contract;
vi) Specifications;
vii) Drawings;
viii) Bill of Quantities; and
ix) Any other document listed in the Contract Data as forming part of the Contract.

In witness whereof, the parties thereto have caused this Agreement to be executed the day and year first
before written.

The Common Seal of _____

was hereunto affixed in the presence of:

Signed, Sealed and Delivered by the said _____
_____

in the presence of:

Binding Signature of Employer _____

Binding Signature of Contractor _____

(D) Form of Unconditional Bank Guarantee from Contractor for Performance Bank Guarantee

(BANK GUARANTEE)

WHEREAS, _____ [Name of Bidder] (hereinafter called "the Bidder") has submitted his Bid dated _____ [date] for the construction of _____ [name of contract hereinafter called "the Bid"].

KNOW ALL PEOPLE by these presents that
We_____
[name of Bank] of _____ [name of country] having our registered office at _____ (hereinafter called "the Bank") are bound unto _____[name of Employer] (hereinafter called "the Employer") in the sum of _____ * for which payment well and truly be made to the said Employer the Bank itself, his successors and assigns by these presents.

SEALED with the common seal of the said Bank this _____ day of _____, 20

THE CONDITIONS of this obligation are;

(1) If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the from of tender.

OR

(2) If the Bidder having been notified to the acceptance of his bid by the Employer during the period of Bid validity:

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or

(b) fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders; or

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

This Guarantee will remain in force up to and including the date _____ ** days after the deadline for submission of Bids or as such deadline as is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE _____
SIGNATURE_____

WITNESS_____ SEAL
_____

[Signature, name and address]

* The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees.

** 45 days after the end of the validity period of the Bid. Date should be inserted by the employer before the Bidding documents are issued.

Earnest Money Declaration Form

(in case of bidder is registered as contractor with Haryana Government on Haryana Engineering Works Portal)

(refer Clause 16.2 of Section 1)

1. I hereby submit a declaration that the bid submitted by the undersigned, on behalf of the bidder, (name of the Bidder), shall not be withdrawn or modified during the period of validity i.e. not less than 120 (one hundred twenty) days from the bid due date.

2. I, on behalf of the bidder, (Name of Bidder), also accept the fact that in case the bid is withdrawn or modified during the period of its validity or if we fail to sign the contract in case the work is awarded to us or we fail to submit a performance security before the deadline defined in clause 34.1 of the tender document, then (Name of Bidder) will be debarred for participation in the tendering process in any of the Department/Boards/Corporations etc. of the Government of Haryana for a period of Two year from the bid due date of this work

(Signature of the Authorized Signatory)
(Official Seal)

PERFORMANCE BANK GUARANTEE

To

_____ [name of Employer]
_____ [address of Employer]
_____

WHEREAS _____ [name and address of Contractor] (hereafter called "the contractor") has undertaken, in pursuance of Contract No. _____ dated _____ to execute _____ [name of Contract and brief description of Works] (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligation in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee:

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor, up to a total of _____ [amount of guarantee]* _____ (in words), such sum being payable in the types and proportions of currencies in which the Contract Price is Payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____[amount of guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until 28 days from the expiry of the **Defect Liability-cum-Maintenance Period**.

Signature and Seal of the guarantor_____
Name of Bank_____
Address _____
Date_____

* An amount shall be inserted by the Guarantor, representing the percentage the Contract Price specified in the Contract including additional security for unbalanced Bids, if any and denominated in Indian Rupees.

(E) Format for Equipment/Machinery Lease Agreement

EQUIPMENT/MACHINERY LEASE AGREEMENT

The Lease Agreement (the "agreement") is made and entered on dated_____, by and between ("Lessor) and (" Lessee") (collectively referred to as the parties).

The parties agree as follows:-

1. Lessor hereby leases to Lessee the following machinery and equipment:
   _____
   _____
   _____

2. LEASE TERM: The Lessee will start on dated _____ (begin date) and will end on dated _____ (end date).

3. LEASE PAYMENT: Lessee agrees to pay lessor as rent for the equipment/ machinery the amount of Rs._____ ("RENT") each month in advance on the first day of each month at_____(Address for rent payment) or at any other address designated by Lessor. s

4. LATE PAYMENT: If any amount under this agreement is more than _____ days late, lessee agree to pay a late fees of Rs. _____ per day.

5. SECURITY DEPOSIT: Prior to taking possession of the Equipment/ machinery, Lessee shall deposit with Lessor in trust, a security deposit of Rs. _____ as security for the performance by Lessee of the terms under this agreement and for any damages caused by Lessee or Lessee's agents to the equipment/ machinery during the lease term. Lessor may use part or all of security deposit to repair any damage to Equipment/ machinery caused by Lessee or Lessee's agents. However, lessor is not just limited to security deposit amount and lessee remains liable for any balance. Lessee shall not use or apply any such security at any time in lieu of payment of rent. If lessee breaches any terms or conditions of this Agreement, Lessee shall forfeit any deposit, as permitted by law.

6. DELIVERY: Lessee shall not be responsible for all expenses and costs i) at the beginning of the Lease Term, of transporting the equipment/ machinery Lessee's premises and ii) at the end of the Lease Term, of transporting the equipment/ machinery back to Lessor's premises.s

7. POSSESSION AND SURRENDER OF EQUIPMENT/ MACHINERY: Lessee shall be entitled to possession of the equipment/ machinery on the first day of Lease Term. At the expiration of the lease term, Lessee shall surrender the equipment/ machinery to Lessor by delivering the equipment/ machinery to Lessor or Lessor agents in good condition and working order, ordinary wear and tear excepted, as it was at the commencement of the agreement.

8. USE OF EQUIPMENT/ MACHINERY: Lessee shall only use the equipment/ machinery in a careful and proper manner and will comply with all laws, rules, ordinances, statues and orders regarding the use, maintenance of storage of the equipment/ machinery.

9. CONDITIONS OF EQUIPMENT/ MACHINERY AND REPAIR: Lessee or Lessee's agent has inspected the equipment/ machinery and acknowledges that the equipment/ machinery is in good and acceptable condition.

10. MAINTENANCE, DAMAGE AND LOSS:- Lessee will, at Lessee's sole expense, keep and maintain the equipment/ machinery clean and in good working order and repair during the Lessee Term. In the event the equipment/ machinery is lost or damaged beyond repair, Lessee shall pay to Lessor the replacement cost of equipment/ machinery, in addition, the obligations of this Agreement shall continue in full force and effect through the Lease term.

11. INSURANCE: Lessee shall be responsible to maintain insurance on the equipment/ machinery with losses payable to Lessor against fire, theft, collision and other such risks as are appropriate and specified by Lessor, upon request by Lessor, Lessee shall provide proof of such insurance.

12. OWNERSHIP: The equipment/ machinery is and shall remain the exclusive property of Lessor.

13. BINDING EFFECT: The covenants and conditions contained in the Agreements shall apply to and bind the Parties and the heirs, legal representatives, successors and permitted assigns of the Parties.

14. GOVERNING LAW: This agreement shall be governed and constructed in accordance with the Laws of State of Haryana.

15. NOTICE: Any notice required or otherwise given pursuant to this Agreement shall be in writing and mailed certified return receipt requested, postage prepaid, or delivered by courier or speed post to Lessor/ Lessee.

Address of the Lessor	Address of the Lessee

Either party may change such address from time to time by providing notice as set for the above.

In witness whereof, the parties have caused this Agreement to be executed the day and year first above written.

LESSOR

_____

_____

LESSEE

_____

_____

(F) Format For Joint Venture Memorandum of Understanding/Agreement (wherever applicable)

FORMAT FOR JOINT VENTURE MEMORANDUM OF UNDERSTANDING/AGREEMENT

THIS JOINT VENTURE MEMORANDUM OF UNDERSTANDING (MOU)/AGREEMENT EXECUTED AT …… ON THIS …….. DAY OF …….. 2021 BETWEEN M/s ……. Registered office at_____ _____ as the first party and M/s _____ _____ Registered office at _____ _____ as the Second party _____ as thirty party. (The expression and words of the first and second and third party shall mean and include their heirs successors, assigns, nominees execution, administrators and legal representatives respectively.)

WHEREAS the parties herein above mentioned are desirous of entering into a Joint Venture for carrying on Engineering and/or contract works, in connection with _____ and other works mentioned in Tender Notice No. _____ Dated _____ of PWD B&R Department or any other work or works, as mutually decided between the parties to this Joint Venture.

WHEREAS all the parties are desirous of recording the terms and conditions of this Joint Venture to avoid future disputes.

NOW THIS MoU/AGREEMENT WITNESSTH AS UNDER:

1. That in and under this Joint Venture agreement the work will be done jointly by the First Party and Second Party in the name and style of M/s _____ _____M/s _____ and M/s._____).

2. This all the parties shall be legally liable, severally and or jointly responsible for the satisfactory/successful execution/completion of the work in all respects and in accordance with terms and conditions of the contract.

3. That the role of each constituent of the said Joint Venture in details shall be as under:-

The first party shall be responsible for _____

The second party shall be responsible for _____

The third party shall be responsible for _____

4. The share of profit and loss of each constituent of the said Joint venture shall be as under:-

5. That all the parties of this Joint Venture shall depute their experienced staff as committed commensuration with their role and responsibility and as required for the successful completion of the works in close consultation with each other.

6. That the investment required for the works under this Joint Venture shall be brought in by the parties as agreed to between them from time to time.

7. That all the Bank guarantee shall be furnished jointly by the parties in the name of Joint Venture.

8. That the party number _____ to this Joint Venture shall be the prime (lead) contractor and will be responsible for timely completion of work and to coordinate with the Department to receive payments and also to make all correspondence on behalf of this Consortium/Joint Venture.

9. That all the above noted parties i.e. _____ not to make any change in the agreement without prior written consent of the competent authority of the department.

NOW THE PARTIES HAVE JOINED HANDS TO FORM THIS JOINT VENTURE ON THIS _____DAY OF _____ TWO THOUSAND WITH REFERENCE TO AND IN CONFIRMATION OF THEIR DISCUSSIONS AND UNDERSTANDING BROUGHT ON RECORD ON _____.

IN WITNESS THEREOF ALL/BOTH THE ABOVE NAMED PARTIES HAVE SET THEIR RESPECTIVE HANDS
ON THIS JOINT VENTURE AGREEMENT ON THE DAY, MONTH AND YEAR FIRST ABOVE MENTIONED IN THE PRESENCE OF THE FOLLOWING WITNESS;

WITNESSES:

1. FIRST PARTY
2. SECOND PARTY

(G) Bank Guarantee for Advance Payment

BANK GUARANTEE FOR ADVANCE PAYMENT

To

_____ [name of Employer]
_____ [address of Employer]
_____ [name of Contractor]

Gentlemen :

In accordance with the provisions of the Conditions of Contract, sub-clause 51.1 ("Advance Payment") of the above-mentioned Contract, _____ [name and address of Contractor] (hereinafter called "the Contractor") shall deposit with _____ [name of Employer] a bank guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of _____ [amount of Guarantee]* _____ [in words].

We, the _____ [bank of financial institution], as instructed by the Contractor, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to _____ [name of Employer] on his first demand without whatsoever right of obligation on our part and without his first claim to the Contractor, in the amount not exceeding _____ [amount of guarantee]* _____ [in words].

We further agree that no change or addition to or other modification of terms of the Contractor or Works to be performed thereunder or of any of the Contract documents which may be made between _____ [name of Employer] and the Contractor, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until _____ [name of Employer] receives full repayment of the same amount from the Contractor.

Yours truly,

Signature and Seal of the guarantor _____
Name of Bank _____
Address _____
Date _____

* An amount shall be inserted by the Bank or Financial Institution representing the amount of the Advance Payment, and denominated in Indian Rupees.

(H) Indenture For Secured Advances

INDENTURE FOR SECURED ADVANCES

FORM 31

(for use in cases in which the contract is for finished work and the contractor has entered into an agreement for the execution of a certain specified quantity of work in a given time).

This indenture made the _____ day of _____, 20___ BETWEEN _____(hereinafter called the contractor which expression shall where the context so admits or implies be deemed to include his executors, administrators and assigns) or the one part and the Employer of the other part.

Whereas by an agreement dated _____ (hereinafter called the said agreement) the contractor has agreed.

AND WHEREAS the contractor has applied to the Employer that he may be allowed advanced on the security of materials absolutely belonging to him and brought by him to the site of the works the subject of the said agreement for use in the constructions of such of the works as he has undertaken to executive at rates fixed for the finished work (inclusive of the cost of materials and labour and other charges).

AND WHEREAS the Employer has agreed to advance to the Contractor the sum of Rupees _____ on the security of materials the quantities and other particulars of which are detailed in Accounts of Secured Advances attached to the Running Account bill for the said works signed by the Contractor on_____ and the Employer has reserved to himself the option of making any further advance or advances on the security of other materials brought by the Contractor to the site of the said works.

Now THIS INDENTURE WITNESSETH that in pursuance of the said agreement and in consideration of the sum of Rupees _____ on or before the execution of these presents paid to the Contractor by the Employer (the receipt where of the Contractor doth hereby acknowledge) and of such further advances (if any) as may be made to him as a for said the Contractor doth hereby covenant and agree with the President and declare as follows:

(1) That the said sum of Rupees _____ so advanced by the Employer to the Contractor as aforesaid and all or any further sum of sums advanced as aforesaid shall be employed by the Contractor in or towards expending the execution of the said works and for no other purpose whatsoever.

(2) That the materials details in the said Account of Secured Advances which have been offered to an accepted by the Employer as security are absolutely the Contractor's own propriety and free from encumbrances of any kind and the contractor will not make any application for or receive a further advance on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the Contractor indemnified the Employer against all claims to any materials in respect of which an advance has be made to him as aforesaid.

(3) That the materials detailed in the said account of Secured Advances and all other materials on the security of which any further advance or advances may hereafter be made as aforesaid (hereafter called the said materials) shall be used by the Contractor solely in the execution of the said works in accordance with the directions of the 'Engineer'.

(4) That the Contractor shall make at his own cost all necessary and adequate arrangements for the proper watch, safe custody and protection against all risks of the said materials and that until used in construction as aforesaid the said materials shall remain at the site of the said works in the Contractor's custody and on his own responsibility and shall at all times be open to inspection by the 'Engineer' or any officer authorized by him. In the event of the said materials or any part thereof being stolen, destroyed or damaged or becoming deteriorated in a greater degree than is due to reasonable use and wear thereof the Contractor will forthwith replace the same with other materials of like quality or repair and make good the same required by the 'Engineer'.

(5) That the said materials shall not be any account be removed from the site of the said works except with the written permission of the 'Engineer' or an officer authorized by him on that behalf.

(6) That the advances shall be repayable in full when or before the Contractor receives payment from the Employer of the price payable to him for the said works under the terms and provisions of the said agreement. Provided that if any intermediate payments are made to the Contractor on account of work done than on the occasion of each such payment the Employer will be at liberty to make a recovery from the Contractor's bill for such payment by deducting there from the value of the said materials than actually used in the construction and in respect of which recovery has not been made previously, the value for this purpose being determined in respect of each description of materials at the rates at which the amounts of the advances made under these presents were calculated.

(7) That if the Contractor shall at any time make any default in the performance or observance in any respect of any of the terms and provisions of the said agreement or of these presents the total amount of the advance or advances that may still be owing of the Employer shall immediately on the happening of such default be re-payable by the Contractor to be the Employer together with interest thereon at twelve per cent per annum from the date or respective dates of such advance or advances to the date of repayment and with all costs, charges, damages and expenses incurred by the **Employer** in or for the recovery thereof or the enforcement of this security or otherwise by reason of the default of the Contractor and the Contractor hereby covenants and agrees with the **Employer** to reply and pay the same respectively to him accordingly.

(8) That the Contractor hereby charges all the said materials with the repayment to the Employer of the said sum of Rupees _____ and any further sum of sums advanced as aforesaid and all costs, charges, damages and expenses payable under these presents PROVIDED ALWAYS and it is hereby agreed and declared that notwithstanding anything in the said agreement and with- out prejudice to the power contained therein if and whenever the covenant for payment and repayment here-in-before contained shall become enforceable and the money owing shall not be paid in accordance there with the **Employer** may at any time thereafter adopt all or any of the following courses as he may deem best :

(a) Seize and utilize the said materials or any part thereof in the completion of the said works on behalf of the contractor in accordance with the provisions in that behalf contained in the said agreement debiting the contractor with the actual cost of effecting such completion and the amount due to the contractor with the value of work done as if he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the contractor, he is to pay same to the **Employer** on demand.

(b) Remove and sell by public auction the seized materials or any part there of and out of the

moneys arising from the sale retain all the sums aforesaid repayable or payable to the **Employer** under these presents and pay over the surplus (if any) to the Contractor.

(c) Deduct all or any part of the moneys owing out of the security deposit or any sum due to the Contractor under the said agreement.

(9) That except in the event of such default on the part of the contractor as aforesaid interest on the said advance shall not be payable.

(10) That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevails and in the event of any dispute or difference arising over the construction or effect of these presents the settlement of which has not been here-in-before expressly provided for the same shall be referred to the Employer whose decision shall be final and the provision of the Indian Arbitration Act for the time being in force shall apply to any such reference.

(I) Integrity Pact Format

INTEGRITY PACT FORMAT

(To be executed on plain paper and submitted alongwith Technical Bid/Tender documents for tenders having a value of Rs 1 cr. or above. To be signed by the bidder and same signatory competent/ authorized to sign the relevant contract on behalf of the State)

This integrity Pact is made at on this day of **2025**.

BETWEEN

Engineer-in-Chief on the behalf of Governor of Haryana through its Superintending Engineer or Executive Engineer "Employer" through which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns)

AND

{*Name and address of the Firm/Company*}, (hereinafter referred to as "The Bidder(s)/Contractor(s) /Concessionaire (s)/Consultant(s) and which expression shall unless repugnant to be meaning or context thereof include its successors and permitted assigns.)

Preamble

Whereas, the Employer has floated the Tender (NIT No.....dtd .....} (hereinafter referred 'to as "Tender/Bid") and intends to award, under laid down organizational procedure, contract/s for {Name of the work}(hereinafter referred to as the "Contract").

And Whereas the Employer values full compliance with all relevant laws of the land, rules of land, regulations, economic use of resources and of fairness/ transparency in its relations with its Bidder(s) and/ or Contractor(s)/Concessionaire (s)/Consultant(s).

And whereas to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact (hereafter referred to as "Integrity Pact" or "Pact") the terms and conditions of which shall also be read as integral part and parcel of the Tender documents and contract between the parties.

Now, therefore, in consideration of mutual covenants contained in this pact, the parties hereby agree as follows and this pact witnesses as under:

Article-1: Commitments of the Employer

(1) The Employer commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

a) No employee of the Employer, personally or through family members, will in connection with the Tender for, or the execution of a Contract, demand, take a promise for or accept, for self, or third person, any material of immaterial benefit which the person is not legally entitled to.

b) The Employer will, during the Tender process treat all Bidder(s) with equity and reason. The Employer will in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to

the tender process or the contract execution.

c) The Employer will exclude all known prejudiced persons from the process, whose conduct in the past has been of biased nature.

(2) If the Employer obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act or any other Statutory Acts or if there be a substantive suspicion in this regard, the Employer will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions as per its internal laid down Rules/Regulations.

Article-2: Commitments of the Bidder(s) / Contractor(s) / Concessionaires) / Consultant(s)

The Bidder(s)/ Contractor(s)/Concessionaire (s)/Consultant(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

a) The Bidder(s)/Contractor(s) /Concessionaire (s)/Consultant(s) will not, directly or through any other person or firm, offer, promise or give to any of the Employer's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which lie/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b) The Bidder(s)/Contractor(s) /Concessionaire (s)/Consultant(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contract, submission or non submission or bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

c) The Bidder(s) /Contractor(s) / Concessionaire(s) /Consultant(s) will notcommit any offence under the relevant IPC/ PC Act and other Statutory Acts; further the Bidder(s) / Contractor(s) / Concessionaire(s) / Consultant(s) will not use improperly, for purposes of completion or personal gain, or pass on to others, any information or document provided by the Principal as paid of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d) The Bidder(s) / Contractor(s) / Concessionaire(s) / Consultant(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract. He shall also disclose the details of services agreed upon for such payments.

e) The Bidder(s) / Contractor(s) / Concessionaire(s) / Consultant(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

f) The Bidder(s) / Contractor(s) / Concessionaire(s) / Consultant(s) will not bring any outside influence through any Govt. bodies/quarters directly or indirectly on the bidding process in furtherance of his bid.

Article-3 Disqualification from tender process and exclusion from future contracts.

1. If the Bidder(s) / Contractor(s) / Concessionaire(s) / Consultant(s) before award or during execution has committed a transgression through a violation of any provision of Article- 2, above or in any other form such as to put his reliability or credibility in question, the Employer is entitled to disqualify the Bidder(s)/ Contractor(s)/Concessionaire

(s)/Consultant(s) from the tender process.

2. If the Bidder(s) / Contractor(s) / Concessionaire(s) / Consultant(s) has committed a transgression through a violation of Article-2 such as to put his reliability or credibility into question, the Employer shall be entitled to exclude including blacklist and put on holiday the Bidder(s)/Contractor(s)/Concessionaire (s)/Consultant(s) for any future tenders/ contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Employer taking into consideration the full facts and circumstances of each case particularly taking into account the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder(s) / Contractor(s) /Concessionaire(s) / Consultant(s) and the amount of the damage. The exclusion will be imposed for a maximum of 3 years.

3. A transgression is considered to have occurred if the Employer after due consideration of the available evidence concludes that "On the basis of facts available there are no material doubts".

4. The Bidder(s) / Contractor(s) / Concessionaire(s) / Consultant(s) with its free consent and without any influence agrees and undertakes to respect and uphold the Employer absolute rights to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

5. The decision of the Employer to the effect that a breach of the provisions of this Integrity Pact has been committed by the Bidder(s) / Contractor(s) shall be final and binding on the Bidder(s) / Contractor(s) / Concessionaire(s) /Consultant(s) however, the Bidder(s) / Contractor(s) / Concessionaire(s) / Consultant(s) can approach IEM(s) appointed for the purpose of this Pact.

6. On occurrence of any sanctions/ disqualification etc arising out from violation of integrity pact, the Bidder(s)/Contractor(s)/Concessionaire (s)/Consultant(s) shall not be entitled for any compensation on this account.

7. Subject to full satisfaction of the Employer, the exclusion of the Bidder(s)/ Contractor(s) /Concessionaire (s)/Consultant(s) could be revoked by the Principal if the Bidder(s)/ Contractor(s)/Concessionaire (s)/Consultant(s) can prove that he has restored/recouped the damage caused by him and has installed a suitable corruption prevention system in his organization.

Article-4: Compensation for Damages.

1. If the Employer has disqualified the Bidder(s) from the tender process prior to the award according to Article-3, the Employer shall be entitled to forfeit the Earnest Money Deposit/ Bid Security or demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security apart from any other legal right that may have accrued to the Employer.

2. In addition to I above, the Employer shall be entitled to take recourse to the relevant provisions of the contract related to Termination of Contract due to Contractor Default. In such case, the Employer shall be entitled to forfeit the Performance Bank Guarantee of the Contractor demand and recover liquidated and all damages as per the provisions of the contract/concession agreement against Termination.

Article-5: Previous Transgressions

1. The Bidder declares that no previous transgressions occurred in the last 3 years immediately before signing of this Integrity Pact with any other Company in any country conforming to the anti corruption/ Transparency International (TI) approach or with any other Public Sector Enterprise/ Undertaking in India or any Government Department in India that could justify his exclusion from the tender process.

2. If the Bidder makes incorrect statement on this subject, lie can be disqualified from the tender process oi action for his exclusion can be taken as mentioned under Article-3 above for transgressions of Article-2 and shall be liable for compensation for damages as per Article-4 above.

Article-6: Equal treatment of all Bidders/Contractors//Concessionaire (s)/Consultant(s).

1. The Bidder(s)/Contractor(s)/Concessionaire (s)/Consultant(s) undertake(s) to demand from all commitment in conformity with this Integrity Pact, and to submit it to the Employer before contract signing.

2. The Employer will enter into agreements with identical conditions as this one with all Bidders/Contractors//Concessionaire (s)/Consultant(s)

3. The Employer will disqualify from the tender process all Bidders who do not sign this Pact or violate its provisions.

Article-7: Criminal charges against violating Bidder(s)/ Contractor(s)/Concessionaire (s)/Consultant(s).

If the Employer obtains knowledge of conduct of a Bidder/Contractor/Concessionaire/ Consultant or of an employee or a representative or an associate of a Bidder/Contractor, which constitutes corruption, or if the Employer has substantive suspicion in this regard, the Employer will inform the same to the Chief Vigilance Officer.

Article-8: Independent External Monitor (IEM)

1. The Employer has appointed a Independent External Monitor (herein after referred to as "Monitor") for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

2. The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Engineer – In – Chief.

3. The Bidder(s)/Contractor(s)/Concessionaire (s)/Consultant(s) accepts that the Monitor has the right to access without restriction to all project documentation of the Employer including that provided by the Bidder(s)/ Contractor(s)/ Concessionaire(s)/Consultant(s). The Bidder (s)/Contactor(s)/Concessionaire (s)/Consultant(s) will also grant the Monitor, upon his request and demonstration of a valid interest, unrestrictedand unconditional access to his project documentation.The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s) with confidentiality.

4. The Employer will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor

the option to participate in such meetings.

5. As soon as the monitor notices, or has reason to believe, a violation of this Pact, lie will so inform the Management of the Employer and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

6. The Monitor will submit a written report to the Engineer – In – Chief within 8 to 10 weeks from the date of reference or intimation to him by the Employer and, should the occasion arise, submit proposals for correcting problematic situations.

7. If the Monitor has reported to the Engineer – In – Chief , a substantiated suspicion of an offence under relevant IPC/PC Act, and the Engineer – In – Chief has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Chief Vigilance Officer.

8. The word 'Monitor" would include both singular and plural.

Article — 9 Pact Duration

This Pact begins when both parties have 1egally signed it. It expires 12 months after the Defect Liability period is over or 12 months after his last payment under the contract whichever is later and for all other unsuccessful Bidders 06 months after this Contract has been awarded. If any claim is made/ lodged during his time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by the Engineer – In – Chief.

Article - 10 Other Provisions.

1. This pact is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Employer

2. Changes and supplements as well as termination notices need to be made in writing.

3. If the Bidder/Contractor/Concessionaire(s)/Consultant(s) is a partnership or a consortium, this pact must be signed by all partners or consortium members.

4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

5. Any disputes/ differences arising between the parties with regard to term of this pact, any action taken by the Employer in accordance with this Pact or interpretation thereof shall not be subject to any Arbitration.

6. The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provision of the extent law in force relating to any civil or criminal proceedings.

In witness whereof the parties have signed and executed this Pact at the place and date first done mentioned in the presence of following witness:-

(For & On behalf of the Employer)

(For & On behalf of the Bidder/ ContractorConcessionaire (s)/Consultant(s)/)

(Office Seal)
Place Date
Witness I : (Name & Address):
Witness 2 : (Name & Address):

(J) Undertaking

UNDERTAKING

Description of the Works :

_____
_____
_____

To :

Address :

1. With full understanding that Part II of our bid (Financial bid) will be opened only if I/We qualify on the basis of evaluation in Part I of the Bid (Technical bid), I/We offer to execute the Works described above and remedy any defects therein in conformity with the conditions of Contract, specifications, drawings, Bill of Quantities and Addenda for an amount quoted in the Financial Bid.

2. I/We agree to abide by this Bid for the period of 120 days from the date fixed for receiving the same, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

3. Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

4. I/We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer's notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the document.

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

Signature of Authorised Signatory .....
Name and Title of Signatory.....
Name of Bidder .....
Authorised Address of Communication.....
Telephone Nos (Office) ……
Mobile No. ……
Facsimile (Fax) No. …….
Electronic Mail Identification (Email ID) ……
Place: ……
Date: ……

(K) AFFIDAVIT

FORMAT FOR THE AFFIDAVIT

(NOTE: This affidavit should be on a non-judicial stamp paper of Rs.10/- and shall be attested by Magistrate/Sub-Judge/ Notary Public)

Name of work _____

I, ……..… (name of the authorised representative of the bidder) son/daughter of …….…… resident of

……. (full address), aforesaid solemnly affirm and state as under:

1. I, undersigned, do hereby certify that all the information furnished and statement's made in response to this notice inviting bid are true and correct and nothing has been concealed.

2. I, undersigned or our firm M/s _____ have never been blacklisted or debarred by any State Govt. /Central Government/Autonomous Body/Authority in Law.

3. I, undersigned or our firm M/s _____ have never been declared bankrupt/ insolvent as on date.

4. The undersigned hereby authorize(s) and request(s) any bank, person, firm PSU/ Authority or Corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding may (our) competence and general reputation.

5. The undersigned understand and agrees that further qualifying information may be requested, and agrees to furnish any such information at the request of the Department/ Project implementing agency.

6. I, the undersigned do hereby undertake that our firm M/s _____would invest a minimum cash upto 25% of the value of the work during implementation of the Contract.

7. I, the undersigned do hereby undertake that our firm M/s _____ agree to abide by this bid for a period of 120 days from the date fixed for receiving the same and it shall be binding on us and may be accepted at any time before the expiration of that period.

8. I, the undersigned do hereby undertake that our firm M/s _____ agree to deploy on this work the machinery, equipment and technical personnels as mentioned in the bid document.

9. *I hereby certify that I have been authorised by …… …….. ……..…… (the bidder) to sign on their behalf, the bid mentioned in paragraph 1 above.

Deponent
Signed by an
Authorized
Officer of the firm
(Deponent)

Place: ……..
Date: ……

* not applicable if the bidder is an individual and is signing the bid on his own behalf.