GOVERNMENT OF MAHARASHTRA
Public Works Department
Public Works Region, Ch. Sambhajinagar
Public Works Circle, Dharashiv
E-Tender Notice No. ABJ/02/01/2025-2026

B-2

STANDARD BIDDING DOCUMENT

Name of Work

Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

Estimated Cost :-		
A) Part - A (Work Portion)		
Civil Work	**Rs.**	**14,10,95,736.00**
Electrical Work	**Rs.**	**1,48,23,737.00**
Total Part-A (Work Portion)	**Rs.**	**15,59,19,473.00**
B) Part - B	**Rs.**	**10,09,406.00**
(Royalty & Testing Charges)		
Total Amount	**Rs.**	**15,69,28,879.00**
E.M.D.	**Rs.**	**7,85,000.00**

Office of the,
Executive Engineer,
Public Works Division, Ambajogai

INDEX

STANDARD BIDDING DOCUMENT
PROCUREMENT OF
CIVIL WORKS

PART I : COMPLETE BIDDING DOCUMENT

D I S C L A I M E R

1. Detailed Time Table for the various activities to be performed in e-tendering process by the Tenderer for quoting their offer is given in this Tender Document under "Tender Schedule". Contractor should carefully note downthe cut-off dates for the carrying out each e-tendering process / activity.

2. Every effort is being made to keep the Website upto date and running smoothly 24 x 7 by the Government and the Service Provider. However, Government takes no responsibility, and will not be liable for, the website being temporarily unavailable due to any technical issue at any point of time.

3. In that event Public Works Department will not be liable or responsible for any damages or expenses arising from any difficulty, error, imperfection or naccuracy with this Website. It includes all associated services, or due to such unavailability of the Website or any part thereof or any contents or any associated services.

4. Tenderers must follow the time table of e-tendering process and get their activities of e-tendering processes done well in advance so as to avoid any inconvenience due to unforeseen technical problem if any.

5. Public Works Department will not be responsible for any incomplete activity of e-tendering process of the tenderer due to technical error/ failure of website and it cannot be challenged by way of appeal, arbitration and in the Court of Law. Contractors must get done all the e-tendering activities well in advance.

DETAILED TENDERING PROCEDURE: -

1.1. Tender Forms.

1.1.1 Tender Forms can be downloaded from the eTendering portal of Public Works Department, Government of Maharashtra i.e. https://mahatenders.gov.in Document Tender Fee and EMD to be paid Via SBI MOPS Online Payment Gateway Mode Only. And upload successful payment receipt in ENVELOPE NO.1 TECHNICAL BID Documents.

1.1.2 The tender submitted by the tenderer shall be based on the clarification, additional facility offered (if any) by the Department, and this tender shall be unconditional. Conditional tenders will be summarily REJECTED.

1.1.3 All tenderers are cautioned that tenders containing any deviation from the contractual terms and conditions, specifications or other requirements and conditional tenders will be treated as non responsive. The contractor should clearly mention in forwarding letter that his offer (in Envelope No.1 & 2) does not contain any condition, deviations from terms and conditions stipulated in the tender.

1.1.4 Tenderers should have valid Class II / III Digital Signature Certificate (DSC) obtained from any Certifying Authorities.

1.1.5 For any assistance on the use of Electronic Tendering System, the Users may call the below

Toll Free Ph. No. 1800 3070 2232
E-Mail : eproc.support@maharashtra.gov.in, cppp-support@nic.in

1.2 Special Instructions to the Contractors / Bidders for the e-submission of the bids online through this tender site: https://mahatenders.gov.in

1.2.1 Bidder must register themselves on https://mahatenders.gov.in portal by clicking “Online Bidder Enrollment” and then map Digital Signature certificate.

1.2.2 Bidder then login to the site giving User id / Password chosen during registration.

1.2.3 The DSC e-token that is registered should be used by the bidder and should not be misused by others.

1.2.4 The Bidders can update well in advance, the documents such as certificates, purchase order details etc., under My Documents option and these can be selected as per tender requirements and then attached along with bid documents during bid submission.

1.2.5 After downloading / getting the tender schedules, the Bidder should go through them carefully and then submit the documents as asked, otherwise, the bid will be rejected.

1.2.6 If there are any clarifications, this may be obtained online through the tender site, or through the contact details. Bidder should take into account of the corrigendum published before submitting the bids online.

1.2.7 Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender schedule and they should be in PDF/XLS/RAR formats. If there is more than one document, they can be clubbed together.

1.2.8 Document Tender Fee and EMD to be paid via SBI MOPS Online Payment Gateway Mode only and upload successful payment receipt in ENVELOPE NO.1 TECHNICAL BID Documents.

1.2.9 The bidder reads the terms & conditions and accepts the same to proceed further to submit the bids.

1.2.10 The bidder has to submit the tender document online well in advance before the prescribed time to avoid any delay or problem during the submission process.

1.2.11 After the bid submission, the acknowledgement number, given by the e-tendering system should be printed by the bidder and kept as a record of evidence for online submission of bid for the particular tender.

1.2.12 Document Tender Fee and EMD to be paid via SBI MOPS Online Payment Gateway Mode only. And upload successful payment receipt in Envelope No.1 Technical Bid Documents. and BOQ in .xls format file to Uploaded in ENVELOPE NO.2 FINANCIAL BID Documents.

1.2.13 The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders.

1.2.14 The bidder may submit the bid documents either by online mode through the site (https://mahatenders.gov.in) as indicated in the tender.

1.2.15 The tendering system will give a successful bid updating message after uploading all the bid documents submitted & then a bid summary will be shown with the bid no, date & time of submission of the bid with all other relevant details. The documents submitted by the bidders will be digitally signed using the DSC e-token of the bidder and then submitted. The bid summary has to be printed and kept as an acknowledgement as a token of the submission of the bid. The bid summary will act as a proof of bid submission for a tender floated and will also act as an entry point to participate in the bid opening date.

1.2.17 Bidder should log into the site well in advance for bid submission so that he submits the bid in time i.e on or before the bid submission end time. If there is any delay, due to other issues, bidder only is responsible.

1.2.18 The bidder should see that the bid documents submitted should be free from virus and if the documents could not be opened, due to virus, during tender opening, the bid is liable to be rejected.

1.2.19 The time settings fixed in the server side & displayed at the top of the tender site, will be valid for all actions of requesting, bid submission, bid opening etc., in the e-tender system. The bidders should follow this time during bid submission.

1.2.20 All the data being entered by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered will not viewable by unauthorized persons during bid submission & not be viewable by any one until the time of bid opening. Overall, the submitted tender documents become readable only after the tender opening by the authorized individual.

1.2.21 The confidentiality of the bids is maintained since the secured Socket Layer 128 bit encryption technology is used. Data storage encryption of sensitive fields is done.

1.2.22 The bidders are requested to submit the bids through online eTendering System to the TIA well before the bid submission end date & time (as per Server System Clock).

1.2.23 The bidder should logout of the tendering system using the normal logout option available at the top right hand corner and not by selecting the (X) option in the browser.

1.2.24 The bidder should upload the Technical Bid in .rar format single file to upload in Technical cover and then BOQ in .xls format single file to Uploaded in ENVELOPE NO.2 FINANCIAL BID Documents.

GOVERNMENT OF MAHARASHTRA
PUBLIC WORKS DEPARTMENT
PUBLIC WORKS DIVISION, AMBAJOGAI

AGREEMENT No._____

Name of Work	:	**Construction of New Administrative Building at Parali Tq. Parali Dist. Beed**
Period of download of bidding document online	:	As per On-line Tender Schedule
Time and date of pre-bid conference	:	As per On-line Tender Schedule
Last date and time for receipt of online bids (bid due date)	:	As per On-line Tender Schedule
Date & time of submission of bid security and cost of tender fee document in original		As per On-line Tender Schedule
Time, date of opening technical bids	:	As per On-line Tender Schedule
Time, date of opening financial bids	:	Will be announced at the time of opening of technical bids.
Place of opening of technical bids	:	Superintending Engineer, Public Works Circle, Dharashiv
Officer inviting bids	:	Executive Engineer, Public Works Division, Ambajogai- 431517

INVITATION FOR BID
(IFB)

GOVERNMENT OF MAHARASHTRA
PUBLIC WORKS DEPARTMENT
PUBLIC WORKS DIVISION, AMBAJOGAI
NATIONAL COMPETITIVE BIDDING

Bid No. : _____ Date : _____

1. The Executive Engineer, Public Works Division, Ambajogai, Phone No. 02446-247760. E-mail ambejogai.ee@mahapwd.gov.in invites bids for the construction of works detailed in the table. The bidder may submit bids for any or all of the following works.

TABLE

Sr. No.	Name of Work	Approximate Value of Work (Rs.)	Bid Security (Rs.)	Cost of Document (Rs.)	Period of Completion
01	**Construction of New Administrative Building at Parali Tq. Parali Dist. Beed**	**Part-A (Work Portion Civil work Rs. 14,10,95,736/- + Electrical Work Rs. 1,48,23,737/- Total - Part-A Rs. 15,59,19,473/-** **Part-B (Royalty & Testing Charges 10,09,406/-** **Grand Total Rs. 15,69,28,879/-**	**7,85,000/-**	**5,900/**	**18 (Eighteen) Calendar Months including monsoon.**

For more details on the tender and bidding process you may please visit the above mentioned portal. Tender Fee and EMD / Bid Security to be paid via online Payment Gateway Mode Only.

The said amount of bid security shall not carry any interest whatsoever. EMD exemption certificate will not be accepted. Vide GR No. CAT/06/2014/LTN 242/Bldg.2, dt. 24/2/2016

NOTE :

1. All eligible/interested contractors are mandated to get enrolled on e-Tendering portal (https://mahatenders.gov.in)

2. To process the tenders online, to encrypt their bid and to sign the bid hashes, bidders are required to obtain digital certificate. For details bidders be contact Help Desk.

3. Contractors can contact Help Desk for any clarification of their doubts regarding the process of Electronic Tendering System.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Tender form, conditions of contract, specifications and contract drawings can be downloaded from the e-tendering portal of Government of Maharashtra i.e. **https://mahatenders.gov.in** after entering the details of payment of **Rs.5,900/- (Rupees Five Thousand Nine Hundred Sixty Only) shall be paid online using payment gateway. The fees of tender document will be non-refundable**. Further information regarding the work can be obtained from the above office.
The tender form, conditions of contract, specifications & contract drawings can be downloaded online using payment gateway. The "***BID SECURITY"*** applicable amount shall be paid via online mode only. Bids will be opened as per tender schedule, in the presence of such intending tenderers or his/their authorized representatives who may be present at time. Bids must be accompanied by security of the amount specified for the work in the table, payable online. Bid security will have to be paid online.

* **Deleted**
Note: Bid Security will be a fixed sum rounded off to the nearest One thousand Rupees.

Bids must be submitted online as per online time schedule and will be opened by the appointed authority on the day as mentioned in time schedule in the presence of the bidders who wish to attend.

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1.3 The offer shall remain open for acceptance for minimum ***period of 120 days*** from the date of opening of Envelope No. 2 (Financial Bid) and thereafter until it is withdrawn by the contractor by notice in writing duly addressed to the authority.

1.4 The tender notice shall form a part of contract agreement. The tenders are invited on the departmental designs only

1.5 The tenderer if firm or company shall in their forwarding letter mention names of all the partners of the firm or company (as the case may be) and the name of the partner who holds the power of attorney in any, authorizing him to conduct transaction on behalf of the firm or company.

1.6 The right is reserved to revise or amend the contract documents prior to the date notified for the receipt of the tenders or extended date. Such deviations, amendments or extensions, if any, shall be communicated in the form of corrigendum by letter or / and by notice in News paper as may be considered suitable

1.7 The tenderer shall enter his rates in words and figures. In case there is difference between rates written in figures and words, the lower offer will be taken as final.

1.8 No pages should be removed from, added in or replaced in the tender documents.

1.9 Right is reserved to reject any or all tenders without assigning any reasons thereof.

1.10 Tenders which do not fulfill any or all conditions or are incomplete in any respect are liable for summery rejection.

1.11 The bidder may, in forwarding letter, mention any points he may wish to make clear but right is reserved to reject the same in the whole of the tenders if the same become conditional tender thereby.

1.12 All cement concrete items under this contract shall be carried out with **FULLY AUTOMATIC MICRO PROCESSOR BASED PLC WITH SCADA ENABLED CONCRETE REVERSIBLE DRUM MIXER / BATCH MIX PLANT OF MINIMUM 30 CUBIC METRE PER HOUR CAPACITY OF ANY STANDARD COMPANY. (3 BIN TYPE).**

SECTION 1

INSTRUCTIONS TO BIDDERS

(ITB)

SECTION 1 – INSTRUCTIONS TO BIDDERS (ITB)

Table of Clauses

GENERAL

1. Scope of Bid

1.1 The Employer (named in Appendix to ITB) invites bids for the constructions of works (as defined in these documents and referred to as "the works") detailed in the table given in IFB. The bidders may submit bids "ON LINE" for any or all of the works detailed in the table given in IFB.

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 bidding documents, the terms 'bid' and 'tender' and their derivatives (bidder/tenderer, bid/tender, bidding/tendering etc.) are synonymous.

2. Sources of Funds

2.1 The expenditure on this project will be met from the budget of Govt. of Maharashtra.

3. Eligible Bidders

3.1 This invitation for Bids is open to all bidders.

3.2 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a statement that the Bidder is neither associated, nor has been associated, directly or indirectly, with the Consultant or any other entity that has prepared the design, specification, and other documents for the Project or being proposed as Project Manager for the Contract. A firm that has been engaged by the Employer to provide consulting services for the preparation of supervision of the works, and any of its affiliates, shall not be eligible to bid.

4. Qualification of the Bidder

4.1 All bidders shall provide in Section 2, Forms of Bid and Qualification Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary. The proposed methodology should include programme of construction backed with equipment planning and deployment duly supported with broad calculations and quality assurance procedures proposed to be adopted justifying their capability of execution and completion of work as per technical specifications, of civil & electrical works within stipulated period of completion.

4.2 All bidders shall include the following information and documents with their bids in Section 2.

(a) Copies of original documents defining the constitution or legal status, place of registration under partnership or companies Act and principal place of business, written power of attorney of the signatory of the Bid to commit the Bidder; (Civil & Electrical Contractor)

(b) Total monetary value of construction work performed for each of the last five years ;

(c) Experience in works of a similar nature and size for each of the last five years and details of works underway or contractually committed and clients who may be contacted for further information on those contracts ;

(d) Major items of construction equipment proposed to carry out the Contract.

(e) Qualifications and experience of key site management and technical personnel proposed for contract;

(f) Reports on the financial standing of the Bidder, such as profit and loss statements and auditor's reports for the past five years;

(g) Evidence of access to line(s) of credit and availability of other financial resources facilities (10% of contract value) certified by the Nationalized Bankers. (Not more than 3 months old)

(h) Undertaking that the bidder will be able to invest a minimum cash upto 25% of contract value of work during implementation of work;

(i) Authority to seek references from the Bidder's bankers;

(j) Information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties concerned and disputed amount ;

~~**(k)** Proposals for subcontracting components of the Works amounting to more than 10 percent of the Bid Price (for each, the qualifications and experience of the identified sub contractor in the relevant field should be annexed); and~~

(l) The proposed methodology and programme of construction, backed with equipment planning and deployment, duly supported with broad calculations and quality control procedures proposed to be adopted, justifying their capability of execution and completion of the work as per technical specifications of civil & electrical works within the stipulated period of completion as per milestones.

(m) Valid registration certificate under GST Act 2017, GSTN number issued by competent authority. This certificate should be valid on the date of tender opening.

(n) Ownership documents of minimum suggested major equipments in Annexure I such as R.T.O.'s R.C. book, Tax Invoice (invoice with TIN) and documents pertaining the ownership of machinery.

(o) **Scanned copy of** Provident Fund Registration

(p) **Scanned copy** of Valid Professional Tax Registration Certificate in the form of PTR and PTE under Section (1) of Section 5 of Maharashtra State Tax on Profession, trade, calling & employment Act 1975, Rule 3(2) for employees including Technical Personnel from the Professional Tax Officer of the concern districts of Maharashtra with its latest valid clearance certificate upto 31/03/2025 from competent authority should be submitted.

(q) **Scanned copy** of Certified copy of partnership deed, in case of a Non-Proprietary firm tendering for work. (True copy duly attested by a Gazetted Officer)

(r) **Scanned copy** of Power of Attorney if applicable.

(s) **Scanned copy** of Integrity Pact executed on plain paper in the given format only duly signed by Authorised signatory (The Original Copy of the Integrity Pact shall be submitted before award of work to Concerned Division Office)

(t) Authority letter about site visit and confirmation about site location, Quarries of material required for construction of project, leads of quarries, cement, steel (as per Appendix 'M (i)') submitted in two coppies. one copy of Annexure 'M (i)' should be submitted in dropbox provided by the department at the work site and another copy along with Geo Tagged photo copies should upload in the Envelope No.1 (i.e. Technical Envelope) at the time of online submission of the tender. Otherwise tender forms will be rejected outright. (Ref: Water Resources Department's GR dated 08.04.2021)

The contractor or his identified sub-contractor should possess :-

(u) Scanned copy of the contractor or his identified sub-contractor should possess a required Valid Electrical Contractor License issued by I.E.& L Dept Govt of Maharashtra, for executing the building electrification works should be produced by the contractor in Envelope No.1 with the attested copy of Valid electrical license. In absence of these documents in Envelope No.1, the Envelope No.2 of the contractor will not be opened.

(v) Scanned copy of an agreement between civil and prime electrical contractor, Lift & fire fighting executed before Executive Magistrate on Rs.500/- stamp paper should be submitted in original before date of opening of envelope no.1. The agreement should be made with concerned electrical contractor till handing over of work and the copy of the same should be enclosed in an Envelope No.1. However the responsibility of tender conditions for whole works (civil, electrical & Lift & fire fighting works) lies with the prime civil contractor only. Security deposit in the form of bank guarantee or fixed/cash deposit should be submitted, which will be refundable after successful completion of comprehensive maintenance. Once of three years after commissioning of Installation system, it is obligatory to obtain No objection certificate from electrical division or appointed electrical consultant before releasing equal of 10% of security deposit for work.

If the defect liability period is more than two years than after two years of completion of work 90% amount of total security deposit will be released to contractor and remaining 10 % amount of security deposit in the form of DD / FDR /BG in the name of any nationalized bank should be taken from contractor and the same will be released after due quality assurance and satisfactory completion of defect liability period. Contractor Bidder has to submite the original copy of aggreement before opening of the Envelope No.1.

w) Prime Contractor (Electrical) Self Attested Copy of Valid Electrical Contractor License issued by I.E.& L Dept Govt of Maharashtra.

x) Prime Contractor (Electrical) scanned copy of Valid license of Fire Fighting System & Sprinklers system and Fire Detection System of appropriate class issued by director of Maharashtra fire services Mumbai.

y) Prime Contractor (Electrical) Scanned copy of original G.S.T. Registration Certificate

z) Prime Contractor (Electrical) Scanned copy of original Partnership Deed in case of Partnership Firms and attested copies of Memorandum and Articles of Association & copy of Power of Attorney in case of Registered Company.

aa) Prime Contractor (Electrical) scanned copy of details of work tendered for & in hand as per Statement No. I (Work order copy for works in hand must be attached)

ab) Prime Contractor (Electrical) scanned copy of details in Statement No. II (Details of work of similar type and magnitude carried out.)

ac) Prime Contractor (Electrical) scanned copy of details in Statement No. III (Details of Plant and machinery immediately available)

ad) Prime Contractor (Electrical) scanned copy of details of Technical Personnel on the roll of the Bidder who will be exclusively spared for this work as per Statement No. IV.

ae) Prime Contractor (Electrical) scanned copy of Declaration of contractor (Prescribed format attached)

af) Prime Contractor (Electrical) scanned copy of Original Affidavit (on 100/- Stamp Paper) for Technical Documents (Prescribed format attached). Contractor / Bidder has to submit the original copy of affidavit before opening of the envelope No.1. If original copy of affidavit is not submitted then the bid will not be opened.

ag) Prime Contractor (Electrical) scanned copy of Under taking that they have not been Blacklisted /Banned/ Suspended (Prescribed format attached)

ah) Prime Contractor Scanned copy of original acknowledged Income Tax Return filed for the immediate Last 5 years and scanned copy of original PAN Card. (Year 2020-2021 to 2024-2025 (with balance sheet)

ai) Prime Contractor Scanned copy of original valid solvency certificate to the extent of 10% cost of Amount put tender from Nationalized Bank (not issued before 12 months from the date of opening of tender) certifying the financial stability of the tenderer, copy should be attached.

aj) Prime Contractor Scanned copy of details of List of Tools, plant and machinery immediately available with the tenderer for use on this work. (in form no.4)

ak) Prime Contractor should have submit the scanned copy of valid lift contractor license for Lift Erection & Maintenance issued by I E & L Deptt. Government of Maharashtra.

al) Prime Contractor should have submit the technical compliance sheet for Passenger Lift/Elevator duly filled and signed. (Prescribed format attached)

4.3 Bids from Joint ventures are not allowed.

4.4 A. To qualify for award of the contract, each bidder in its name should have in the last five years as referred to in Appendix.

(a) Achieved a Maximum annual financial turnover during any last five years (in all Classes of civil engineering construction work only) of value not less than **Rs. 7.11 Crores** in any one year **AND** achieved a Maximum annual financial turnover during any last five years **(Electrical work only)** of value not less than **Rs. 0.906 Crores** in any one year. Above turn over should be certified by the Registered Charted Accountant.

(b) Satisfactory commenced and completed during last five years as a prime contractor of **at least one similar work of value not less than 80% of the amount put to tender or at least two similar works of value not less than 50% of the amount put to tender or at least three similar works of value not less than 40% of the amount put to tender** at 2025-26 price level. Financial turnover and cost of completed works of previous years shall be given weightage of 10% per year based on Rupee value to bring them to 2025-26 price level.
(Separate details shall be provided for Civil Works (Amount put to tender Rs.14,21,05,128/- and Electrical Installation, CCTV, LAN and Telephone, Water Pump, Fire Fighting, AC & Passenger Lifts work amount put to tender Rs. 181.32 Lakhs)

(c) Executed in any one year of last five years, the minimum quantities of the following items of work as indicated in Appendix.

1)	**Civil Work :-**			
i)	Reinforcement Cement Concrete M-25 and above	=	735.00	Cubic Metre
ii)	TMT Steel FE-500	=	85.00	Metric Tonne
iii)	Wall Punning (P.O.P)	=	3020.00	Sqaure Metre
iv)	Dezzly Texture Paint	=	320.00	Square Metre
v)	All types of Flooring/ Skirting/ Dado	=	2045.00	Square Metre
vi)	Modular False Ceiling	=	125.00	Sqaure Metre

2)	**Electrical Work :-**			
i)	SITC of Point Wiring	=	270	Number
ii)	SITC of Transformer 100 KVA	=	1	Number
iii)	SITC of Generator 82.50 KVA	=	1	Number
iv)	SITC of CCTV	=	20	Number
v)	SITC of 8 Paassenger Lift	=	1	Number
vi)	SITC of Fire Fighting Jocky Pump 7.50 HP	=	1	Number
vii)	Air Condition System 2 Ton	=	5	Numbers

d) For Government/Semi Government Works, Certificates as mentioned in qualification criteria for Sr. No. (b) to be obtained from not below the rank of Executive Engineer/Division of accounts officer.

B. Each bidder should further demonstrate:

(a) Availability (either owned or leased) of the following key and critical equipment for this work:

Based on the studies, carried out by the Engineer the minimum suggested major equipment to attain the completion of works in accordance with the prescribed construction schedule are shown in the Annexure-I. (Page No. 41)

The bidders should, however, undertake their own studies and furnish with their bid, a detailed construction planning and methodology supported with layout and necessary drawings and calculations (detailed) to allow the employer to review their proposals. The numbers, types and capacities of each plant/equipment shall be shown in the proposals along with the cycle time for each operation for the given production capacity to match the requirements.

(b) Availability for this work following key personnel on roll, when the work is in progress with adequate experience as required. (information to be submitted in Annexure B on Page No.55). As per GR No. Sankirn-2021/CR-54/Bld-2 Dt. 07.12.2023, Bidder shall fill the relevant information of key persons and technical staff available with him in the formats and fields specified on https://bidcap.emahapwd.com portal.; as per Annexure-II (Page No.46)

(c) liquid assets and/or availability of credit facilities of no less than amount indicated in Appendix
(Credit lines / letter of credit / certificates from Banks for meeting the funds requirement etc. - usually the equivalent of the estimated cash flow for 3 months in peak construction period.)

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

4.5 Sub-contractors' experience and resources shall not 'be taken into account in determining the bidder's compliance with the qualifying criteria except to the extent stated in 4.4 (A) above.

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

As per GR No. Sankirn-2021/CR-54/Bld-2 Dt. 07.12.2023, Bidders shall upload QR based bid capacity certificate downloaded on or before two days of submission from Portal https://bidcap.emahapwd.com. If this bid capacity certificated is nor uploaded then tender shall be treated as non-responsive.

Information in proforma of Annexure A on Page No.54 to be submitted is also mandatory.

The available bid capacity will be calculated as under.

Assessed Available Bid capacity = (A x N x 2 - B)
where

A = Maximum value of civil engineering works executed in anyone year during the last five years (updated to the price level of the year indicated in Appendix) taking into account the completed as well as works in progress.

N = Number of years prescribed for completion of the works for which bids are invited.

B = Value (updated to the price level of the year indicated in Appendix) of existing commitments and on-going works to be completed during the next **18 (Eighteen)** (period of completion of the works for which bids are invited)

Note: 1. *For Calculating the value, bidder will have to submit existing* commitments*, on-going works, work done details (Last five years i.e 2020-21, 2021-22, 2022-23, 2023-24 & 2024-25), Turnover certified by the registered Chartered Accountant, Yearly Tax Credit Statement - "Form 26A", CIBIL Score, and other required document online as well as in Envelope No.1 in the prescribed format of* ***Annexure-A on Page No.54.***

2. *The Statement showing the value of existing commitments and ongoing works as well as the stipulated period of competion remaining fo each of the work listed should be countersigned by the officer not below the rank of an Executive Engineer/Divisional Account Officer.*

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 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.

5.0 One Bid per Bidder

5.1 Each bidder shall submit only one bid for one work. A bidder who submits or participates in more than one Bid (other than as a subcontractor or in cases of alternatives that have been permitted or requested) will cause all the proposals with the Bidder's participation to be disqualified.

6.0 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 and liable for those costs.

7.0 Site Visit Mandatory

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.

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.

Section	Particulars	Volume No.
	Invitation for Bids	I
1	Instruction to Bidders	
2	Qualification information and other forms	
3	Conditions of Contract	
4	Contract Data	
5	Technical Specification	II
6	Form of Bid	III
7	Bill of Quantities	
8	Securities and other forms	
9	Drawings	IV
10	Documents to be furnished by bidder	V

8.2 One copy of each of the volumes I, II, III and IV will be issued to the bidder. Documents to be furnished by the bidder in compliance to section 2 will be prepared by him and furnished as Volume-V in two parts. (refer clause 12)

8.3 The bidder is expected to examine carefully all instructions, conditions of contract, contract data, forms, terms, technical specifications, bill of quantities, forms, Annexes 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

~~**9.1** A prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing or by cable (hereinafter "cable" includes E mail, telex and facsimile) at the Employer's address indicated in the invitation to bid. The Employer will respond to any request for clarification which he received earlier than 15 days prior to the deadline for submission of bids. Copies of the Employer's response will be forwarded to all purchasers of the bidding documents, including a description of the enquiry but without identifying its source.~~

9.2 Pre-bid meeting

9.2.1 The bidder or his official representative is invited to attend a pre-bid meeting which will take place at the address, venue, time and date as indicated in ONLINE time schedule.

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

9.2.3 The bidder is requested to submit any questions in writing by fax or by e-mail to reach the Employer well before the date & time of prebid meeting.

9.2.4 Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be transmitted ONLINE without delay to all purchaser of the bidding documents Any modifications of the bidding documents listed in sub clause 8.1 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 and not through the minutes of the pre-bid meeting.

9.2.5 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 addenda.

10.2 Any addendum thus issued shall be part of the bidding documents and shall be communicated in writing or by fax or e-mail to all the purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum in writing or by fax or email to the Employer. The Employer will assume no responsibility for postal delays.

10.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may, at his discretion, extend as necessary the deadline for submission of bids, in accordance with Sub-Clause 20.2 below.

C. PREPARATION OF BIDS

11. Language of the Bid

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

12. Documents Comprising the Bid

12.1 The bid to be submitted "online" by the bidder as Volume V of the bid document (refer Clause 8.1) shall be in two separate parts:

Part I shall be named "Technical Bid" and shall comprise

(i) Bid Security in the form specified in section 8

(ii) Qualification Information and supporting documents as specified in Sect. 2.

(iii) Certificates, undertakings, affidavits as specified in Section 2.

(iv) Any other information pursuant to Clause 4.2 of these instructions.

(v) Undertaking that the bid shall remain valid for the period specified in Clause 15.1.

(vi) Acceptance/ non acceptance of Dispute Review Expert proposed in Clause 36.1.

Part II shall be named "Financial Bid" and shall comprise

(i) Form of Bid a specified in Section 6.

(ii) Priced Bill of Quantities for items specified in Section 7.

Each part will be separately "SUBMITTED ONLINE" in accordance with the Sealing and Marking Instructions Clause 19.

12.2 The bidder shall prepare two copies of the bid, marking them 'Original' and 'Copy' respectively.

12.3 Following documents, which are not submitted with the bid, will be deemed to be part of the bid.

Section	Particulars	Volume No.
1	Invitation for Bids (IFB)	VOLUME - I
2	Instruction to Bidders	
3	Conditions of Contract	
4	Contract Data	
5	Specifications	VOLUME - II
6	Drawings	VOLUME - IV

13. Bid Prices.

13.1 The contract shall be for the whole works as described in Sub-Clause 1.1, based on the priced Bill of Quantities submitted by the Bidder.

13.2 The bidder shall fill rates and prices in Part-A of BOQ and line item total (both in figures and words) for all items of the Works described in the Bill of Quantities along with total bid price (both in figures and words). Items for which no rate or price is entered by the bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Bill of Quantities. Corrections of any, shall be made by crossing out, initialing, dating and rewriting.

13.3 All duties, taxes and other levies payable by the contractor under the contract, or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder.

13.4* Deleted

13.4 The rates and prices quoted by the bidder are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 47 of the Conditions of Contract (For contracts more than 18 (Eighteen) period).

14.0 Currencies of Bid and Payment

14.1 The unit rates and the Prices shall be quoted by the bidder entirely in Indian Rupees. All payment shall be made in Indian Rupees.

15.0 Bid Validity

15.1 Bids shall remain valid for a period not less than 120 days after the deadline date for bid submission specified in Clause 20. A bid valid for a shorter period shall be rejected by the Employer as non-responsive. In case of discrepancy in bid validity period between that given in the undertaking pursuant to Clause 12.1 (v) and the Form of Bid submitted by the bidder, the latter shall be deemed to stand corrected in accordance with the former and the bidder has to provide for any additional security that is required.

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 cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid except as provided in 15.3 hereinafter, but will be required to extend the validity of his bid security for a period of the extension, and in compliance with Clause 16 in all respects.

15.3.* In the case of contracts in which the Contract Price is fixed (not subject to price adjustment), in the event that the Employer requests and the Bidder agrees to an extension of the validity period, the contract price, if the Bidder is selected for award shall be the bid price corrected as follows: (delete if the contract is for more than 18 (Eighteen) period)

The price shall be increased by the factor of 0.2% for each week or part of a week that has elapsed from the expiration of the initial bid validity to the date of issue of letter of acceptance to the successful Bidder.

15.4 Bid evaluation will be based on the bid prices without taking into consideration the above correction.

16.0 Bid Security

16.1 The Bidder shall ***pay ONLINE***, as part of his Bid, a Bid security in the amount as shown in column 4 of the table of IFB for this particular work. This bid security shall be in favor of Employer as named in Appendix and may be in one of the following forms;

(a) Receipt in challan of cash deposit in the Govt. Treasury in Maharashtra.

(b) Deposit at call Receipt from any scheduled Indian Bank or a foreign Bank located in India and approved by the Reserve Bank of India.

(c) Indian Post Office/National Savings Certificate duly endorsed by the competent postal authority in India.

(d) Bank Guarantee from any scheduled Indian Bank, in the format given in Volume III.

(e) Fixed Deposit Receipt, a certificate cheque or an irrevocable letter of credit, issued by any Scheduled Indian Bank or a Foreign Bank approved by the Reserve Bank of India.

16.2. Bank guarantees (and other instruments having fixed validity) issued as surety for the bid shall be valid for 45 days beyond the validity of the bid.

16.3. Any bid not accompanied by an acceptable Bid Security and not secured as indicated in Sub- Clauses 16.1 and 16.2 above shall be rejected by the Employer as non-responsive.

16.4 The Bid Security of unsuccessful bidders will be returned within 28 days of the end of the bid validity period specified in Sub-Clause 15.1.

16.5 The Bid Security of the successful bidder will be discharged when the bidder has signed the Agreement and furnished the required Performance Security.

16.6 The Bid Security may be forfeited

(a) if the Bidder withdraws the Bid after Bid opening during the period of Bid validity;

(b) if the Bidder does not accept the correction of the Bid Price, pursuant to Clause 27; or

(c) in the case of a successful Bidder, if the Bidder fails within the specified time limit to

(i) sign the Agreement; or

(ii) furnish the required Performance Security.

17.0 Alternative Proposals by Bidders

17.1 Bidders shall submit offers that fully comply with the requirements of the bidding documents, including the conditions of contract (including mobilisation advance or time for completion), basic technical design as indicated in the drawing and specifications. Conditional offer or alternative offers will not be considered further in the process of tender evaluation.

18.0 Format and Signing of Bid

18.1 The Bidder shall submit their bid online at e-tendering portal https://mahatenders.gov.in . Bidder shall refer the same portal for online procedure for submission of bids.

18.2 Deleted

18.3 The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

D. SUBMISSION OF BIDS

19.0 Sealing and Marking of Bids

19.1 Deleted

19.2 Deleted

19.3 Deleted

19.4 Deleted

19.5 Tenders must be electronically submitted (online) on e- tendering portal ***https://mahatenders.gov.in*** ***within*** the date and time published in e- procurement portal. First Cover Tenders will be opened at prescribed time and date in the eprocurement portal, in the presence of the Tenderers who wish to attend at the Office of the ***Executive Engineer, Public Works Division, Ambajogai.***

20.0 Deadline for Submission of the Bids

20.1 Complete Bids (including Technical and Financial) must be received by the Employer ONLINE not later than the date indicated in appendix on Page No. 39

20.2. The Employer may extend the deadline for submission of bids by issuing an amendment in accordance with Clause 10, in which 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. Deleted

22. Deleted

E. BID OPENING AND EVALUATION

23.0 Bid Opening

23.1 The Employer will open all the Bids received "Online" (except those received late), in the presence of the Bidders or their representatives who choose to attend at time, date and the place specified in Appendix in the manner specified in Clause 20 and 23.3. In the event of the specified date of Bid opening being declared a holiday for the Employer, the Bids will be opened at the appointed time and location on the next working day.

23.2 Deleted

23.3 The envelope containing "Technical Bid" shall be opened "Online". The amount, form and validity of the bid security furnished with each bid will be announced. If the bid security furnished does not conform to the amount and validity period as specified in the Invitation for Bid (ref. Column 4 and paragraph 3), and has not been furnished in the form specified in Clause 16, the remaining technical bid and the sealed financial bid will not be opened.

23.4 **(i)** Subject to confirmation of the bid security by the issuing Bank, the bids accompanied with valid bid security 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) After receipt of confirmation of the bid security, the bidder will be asked in writing (usually within 10 days of opening of the Technical Bid) to clarify or modify his technical bid, if necessary, with respect to any rectifiable defects.

(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 (usually on the 21st day of opening of the Technical Bid)

(iv) Immediately (usually within 3 or 4 days), on receipt of these clarifications the Evaluation Committee will finalize the list of responsive bidders whose financial bids are eligible for consideration.

23.5 At the time of opening of "Financial Bid", the names of the bidders were found responsive in accordance with Clause 23.4(iv) will be announced. The bids of only these bidders will be opened. The remaining bids will not be opened. The responsive Bidders' names, the Bid prices, the total amount of each bid, any discounts, Bid

Modifications and withdrawals, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening. Any Bid price or discount, which is not read out and recorded will not be taken into account in Bid Evaluation.

23.6 In case bids are invited in more than one package, the order for opening of the "Financial Bid" shall be that in which they appear in the "Invitation For Bid".

23.7 The Employer shall prepare minutes of the Bid opening, including the information disclosed to those present in accordance with Sub-Clause 23.6.

24.0 Process to be Confidential

24.1. 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 effort by a Bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his Bid.

25.0 Clarification of Financial Bids

25.1 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 cable, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with Clause 27.

25.2. Subject to sub-clause 25.1, no Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, it should do so in writing.

25.3 Any effort by the Bidder to influence the Employer in the Employer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidders' bid.

26.0 Examination of Bids and Determination of Responsiveness

26.1. During the detailed evaluation of "Technical Bids", the Employer will determine whether each Bid (a) meets the eligibility criteria defined in Clause 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 "Financial Bid", the responsiveness of the

bids will be further determined with respect to the remaining bid conditions, i.e., priced bill of quantities, technical specifications, and drawings.

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 "Financial 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.

27.0 Correction of Errors

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

(a) where there is a discrepancy between the rates in figures and in words, the rate in words will govern; and

(b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

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 with the concurrence of the Bidder 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' Such adjusted bid price shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount the Bid will be rejected, and the Bid security may be forfeited in accordance with Sub-Clause 16.6 (b).

28.0 Deleted

29.0 Evaluation and Comparison of Financial Bids

29.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Sub-Clause 26.2.

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) making any correction for errors pursuant to Clause 27; or

(b) making an appropriate adjustments for any other acceptable variations, deviations; and

(c) making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Sub-Clause 23.6.

29.3 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.

29.4 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.

29.5 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 analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Employer may require that the amount of the performance security set forth in Clause 34 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.

29.6 A bid which contains several items in the Bill of Quantities which are unrealistically priced low and which cannot be substantiated satisfactorily by the bidder, may be rejected as non-responsive.

30.0 Deleted

F. AWARD OF CONTRACT

31.0 Award Criteria

31.1 Subject to Clause 32, 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 price, even if the said bid is the lowest evaluated bid. The contract will in such cases be awarded to the next lowest bidder at his evaluated bid price.

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

32.1. Not with standing Clause 31, 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.

33.0 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 cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the *Conditions of Contract* called the "Letter of Acceptance") will state the sum that the Employer will pay the Contractor in consideration of the execution, completion, and maintenance of the Works by the Contractor 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 sent to the successful Bidder, **within 28 days** following the notification of award along with the Letter of Acceptance. Within 21 days of receipt, the successful Bidder will sign the Agreement and deliver it to the Employer.

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.

34.0 Performance Security

34.1 The Security Deposit to be paid shall be 1 % (One percent) of amount put to tender. (50% at the time of Agreement and 50% from R. A. Bills).

Within fifteen 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 1% of the Contract price plus additional security for unbalanced Bids in accordance with Clause 29.5 of ITB and Clause 52 of Conditions of Contract :-

- a bank guarantee in the form given in Section 8; or

- F.D.R /Certified cheque/ Bank Draft as indicated in Appendix.

A) Additional Security Deposit (Performance Security)

If the tenderer has quoted the offer below the estimated rates put to tender, then the tenderer shall have to submit Additional Performance Security in the form of Demand Draft / Bank Guarantee of any Nationalized or Scheduled bank in favour of the Executive Engineer, Public Works Division, Ambajogai, payable at Ambajogai.

The tenderer on intimation as lowest bidder (Confirm L-1 after opening of Envelope No. 2) within eight days from the date of opening of Envelope No.2, should submit Additional Performance Security to the concerned Executive Engineer, no extension shall be granted on any grounds for submission of Additional Performance Security to tenderer and his offer shall be treated as non-responsive. In case the L-1 tenderer fails to submit the Additional Performance Security within eight day, immediately L-2 will be intimated to negotiate the offer below L-1 and pay the Additional Performance Security within eight day.

The amount of the Demand Draft / Bank Guarantee shall be calculated by the tenderer in accordance with the following manner.

1) If the offer below the estimated rates is up to 1 % to 10 % below, then the amount of the Demand Draft / Bank Guarantee shall be of the value of 1% of the cost put to tender.
(For example :- If the rates quoted is 1% to 10% below, then the amount of Demand Draft / Bank Guarantee should be 1% of the cost put to tender)

2) For bids, if tender offer quoted is more than 10 % below the estimated cost put to tender then the performance security shall be 1% of the cost put to tender plus the percentage by which the tender offer is more than 10% below the estimated cost put to tender.
(For example :- If the rates quoted is 14 % below, then the amount of Demand Draft / Bank Guarantee should be 5%, i.e. 1% of the cost Put to tender plus (14-10) % of the cost put to tender)

If this amount is less than Rs.1,000/- then the minimum Rs.1,000/- Demand Draft / Bank Guarantee should be submitted.

3) For bids, if tender offer quoted is more than 15 % below the estimated cost put to tender then the performance security shall be 2 times of the balance percentage by which the tender offer is more than 15% below the estimated cost put to tender.
(For example :- If the rates quoted is 19 % below, then the amount of Demand Draft / Bank Guarantee should be 14%, i.e. 1% (for below offer upto 10 %) of the cost Put to tender plus (15-10) 5 % of the cost put to tender plus (19-15= 4 % X 2 = 8 %) of the cost put to tender)

The Demand Draft / Bank Guarantee shall be valid up to 3 months from the date of submission of this additional performance security. Demand Draft should bear MICR and IFS code. Bank Guarantee shall be extendable for period up to beyond one month of defect liability period.

In case it is found that the documents / demand draft / Bank Guarantee submitted by the tenderer are false, his earnest money shall be forfeited to Government as well as the registration of the tenderer shall be suspended for the period of 1 year in addition to the other legal action necessary to be taken as per the law.

The work order shall be given to the concerned tenderer after the clearance of the Demand Draft or confirmation of Bank Guarantee from concerned bank submitted by him. The amount of the performance security shall be refunded as per the tender conditions.

Non submission of additional security deposit / performance security or submission of less amount of the additional security deposit shall be liable to summarily rejection of his tender.

Additional Performance Security amount shall be calculated for two decimals points of rate quoted by the contractor.

Additional Performance Security of the successful bidder shall be returned immediately upon satisfactory completion of work; the certificate of which shall be issued by the Executive Engineer before releasing the additional security.

34.2 If the performance security is provided by the successful Bidder in the form of a Bank Guarantee, 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 34.1 shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.

35.0 Advance Payment and Security

35.1 The Employer will provide an Advance Payment on the Contract Price as stipulated in the Conditions of Contract, subject to maximum amount, as stated in the Contract Data.

36.0 Dispute Review Expert

36.1. The Employer proposes that [name of proposed Dispute Review Expert as indicated in Appendix on Page No. 38] be appointed as Dispute Review Expert under the Contract, at a daily fee as indicated in Appendix plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should so state in the Bid. If in the Letter of Acceptance, the Employer has not agreed on the appointment of the Dispute Review Expert, the Dispute Review Expert shall be appointed by the Council of Indian Roads Congress at the request of either party.

36.2 For works costing above Rs.5 Crore the procedure for arbitration will be as per G.R of Law & Judiciary Department issued vide Sankirn-2016/C.R. 20/ Ka-19 dt. 13/10/2016 regarding " Institutional Arbitration Policy".

37.0 Corrupt or Fraudulent Practices

37.1 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 with National Highways Authority of India / State PWD and any other agencies, if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for the contractor, or in execution.

37.2 Furthermore, Bidders shall be aware of the provision stated in Sub-Clause 23.2 and Sub-Clause 59.2 of the Conditions of Contract.

38 Instruction to Contractor :-

38.1 As per Government instruction it is proposed to make payment of Contractors bills through ECS / NEFT System. For this purpose Contractor should open his Bank account in a bank having core banking facility only.

38.2 Contractor shall submit a certificate to the effect that ***"All the payments to the labour/staff are made in bank accounts of staff linked to Unique*** **Identification Number (AADHAR CARD)."** The certificate shall be submitted by the contractor within 60 days from the commencement of contract. If the time period of contract is less than 60 days then such certificates shall be submitted within 15 days from the date of commencement of contract.

38.3 Excess quantity should be executed only after permission of the authority granting Administrative Approval of work. It shall be paid at tender rate only.

38.4 Payment of Security Deposit by Bank Guarantee and Online BG Verification : If the contractor wishes to deposit security deposit by Bank Guarantee after tender approval then it is mandatory for contractor to verify the Bank Guarantee by paying verification fees of Rs.1000/- + GST through the link provided below https://onlinebg.emahapwd.com

39. WORK SITE VISIT :

The site of work is **at New Administraive Building, Parali Tq. Parali Dist. Beed.**

The Bidder or his authorized representative shall visit & inspect the actual work site with the concern Sub-Divisional officer or his representative before submission of online tender. The bidder shall confirm visit date & time (working hours) with the concern Sub-Division officer or his representative between working hours from date _____ to _____ The bidder or his authorized representative shall carry his identity proof with him at the time of visit for confirmation. Authorized representative of bidder shall also carry authority letter of bidder on bidder's letterhead.

The Bidder or his authorized representative shall sign two copies of properly filled Annexure-M (I). One copy of Annexure-M (I) shall be submitted in drop box provided by the department at the work site & another copy shall upload along with Geo Tagged Photo copies in the Envelope No.1 (Technical Envelope) at the time of online submission of the tender.

Both the copies of Annexure-M (I) will be cinfirmed at the time of Technical scrutiny. Non Submission of Annexure-M (I) of Discrepancies between physical & online submitted copies of Annexure-M (I) is liable to rejection of tender. (Ref. Government of Maharashtra, Water Conservation Departments Marathi government resolution Corrigendum no.3 –nivida 0417/case no.247/MP-1 dated 08 April 2021.)

APPENDIX TO ITB

<table>
<tr><td></td><td></td><td>Clause Reference With respect to Section – I.</td></tr>
<tr><td>1.</td><td>Name of the Employer is :- Executive Engineer, Public Works Division, Ambajogai</td><td>[Cl. 1.1]</td></tr>
<tr><td rowspan="6">2.</td><td>The last five years</td><td></td></tr>
<tr><td>1. 2024-2025</td><td></td></tr>
<tr><td>2. 2023-2024</td><td></td></tr>
<tr><td>3. 2022-2023</td><td></td></tr>
<tr><td>4. 2021-2022</td><td></td></tr>
<tr><td>5. 2020-2021</td><td></td></tr>
<tr><td>3.</td><td>This annual financial turn over amount is Rs.710.52 Lakhs (Rupees in words Seven Crore Ten Lakhs Fifty Two Thousand Only.) in all classes of civil engineering contruction work only & for Electrical works is Rs.90.66 Lakhs (Rupees in words Ninety Lakhs Sixty Six Thousand only.)</td><td>[Cl. 4.4 A(a)]</td></tr>
<tr><td>4.</td><td>Value of Civil Works :-

i. Three similar works each having minimum estimated cost of Rs. 568.42 Lakhs (40%)
or
ii. Two similar works each having minimum estimated cost of Rs. 710.53 Lakhs (50%)
or
iii. One similar work of value not less than Rs. 1136.84 Lakhs (80%)</td><td>[Cl. 4.4 A(b)]</td></tr>
<tr><td>5.</td><td>Quantities of work are : –

<table>
<tr><td>5.1</td><td>Civil Work :-</td><td></td><td></td></tr>
<tr><td>i)</td><td>Reinforcement Cement Concrete M-25 and above</td><td>735.00</td><td>Cum</td></tr>
<tr><td>ii)</td><td>TMT Steel FE-500</td><td>85.00</td><td>M.T.</td></tr>
<tr><td>iii)</td><td>Wall Punning (P.O.P)</td><td>3020.00</td><td>Sqm</td></tr>
<tr><td>iv)</td><td>Dezzly Texture Paint</td><td>320.00</td><td>Sqm</td></tr>
<tr><td>v)</td><td>All types of Flooring/ Skirting/ Dado</td><td>2045.00</td><td>Sqm</td></tr>
<tr><td>vii)</td><td>Modular False Ceiling</td><td>125.00</td><td>Sqm</td></tr>
</table>
</td><td>[Cl. 4.4 A (c)]</td></tr>
</table>

	5.2	**Electrical Work :-**			
	i)	SITC of Point Wiring	270	Number	
	ii)	SITC of Transformer 100 KVA	1	Number	
	iii)	SITC of Generator 82.50 KVA	1	Number	
	iv)	SITC of CCTV	20	Numbers	
	v)	SITC of 8 Passenger Lift	1	Number	
	vi)	SITC of Fire Fighting Jocky Pump 7.50 HP	1	Number	
	vii)	Air Condition System 2 Ton	20	Numbers	

6. The cost of electric work/s & fire fighting works :- [Cl. 4.4 A(c)]

Prime Contractor/Sub-Contractor (Electrical) must have satisfactory completed **three similar type of work** each of amounting not below to 40% value of the tender cost OR **two similar type of work** each of amounting not below to 50% value of the tender cost OR **one similar type of work** amounting not below to 80% value of the tender cost in Govt. of Maharashtra /Govt. of India / Semi Govt. / PSU. during last five years. at price level of 2024-25 during last five years i.e. 2020-21, 2021-22, 2022-23, 2023-24 & 2024-25.Work completion certificate from competent authority should be attached.

Sr. No	Similar type of Works - SITC i.e. Supplying, installation, testing and commissioning	Satisfactorily completed **Three** similar type of work amounting not below the value (Rs. Lakh)	Satisfactorily completed **Two** similar type of work amounting not below the value (Rs. Lakh)	Satisfactorily completed **One** similar type of work amounting not below the value (Rs. Lakh)
1	Electrical Installation, CCTV, LAN and Telephone, Water Pump, Fire Fighting, AC & Passenger Lifts	72.53	90.66	145.06
	TOTAL	**72.53**	**90.66**	**145.06**

7. ~~The cost of water supply/ sanitory work Rs...Nil~~ ~~[Cl. 4.5 A(e)]~~

8. Liquid assets and/or availability of credit facilities is **Rs. 160.24 Lakhs (Rupees in words One Crore Sixty Lakhs Twenty Four Thousand only.)** [Cl. 4.2 (g)]

9. Price level of the financial year 2025-26 [Cl. 4.4 (b)]

10.	The Pre-bid meeting will take place in the office of the **Chief Engineer, Public Works Region, Bandhkam Bhavan, Ch. Sambhajinagar-431105, (Phone No. 0240 – 2331815, 2331616, Fax No. 0240 – 2332068).** (address of the venue) on as per Tender Schedule.	[Cl. 9.2]
11.	The technical bid will be opened in the Office of the **Superintending Engineer, Public Works Circle, Bandkam Bhavan, Samata Colony, Dharashiv-413501** (address of the venue) on as per Tender Schedule.	
12.	Address of the Employer :- **Executive Engineer, Public Works Division, Ambajogai-431517 Phone (02446) 247760. E-mail ambejogai.ee@mahapwd.gov.in**	
13	**Identification :**	[Cl. 19.2(b)]
	Bid for - **Construction of New Administrative Building at Parali Tq. Parali Dist. Beed**	
	Bid Reference : No. _____ (Insert Number).	
	Do not open before _____ **As per NIT**	
14.	The bid should be submitted latest as per tender schedule (time and date) In addition to online uploading of document the bidder shall have to submit one set of hard copy of bid document bound with the volume containing the "Technical Bid" and "Financial Bid" in separate Envelope and clearly marked at any of the specified location (office) herein. The Bidder shall seal the technical and financial bid in separate envelopes duly marking the envelopes. This to envelopes (call as inner envelopes) shall then be put inside one outer envelope one hard copy of e-tender uploaded on e-portal website should be submitted within 72 hours after "Bid lock". In the event of the specified date for the submission of hard copy declared a holiday by the employer, the bids will be received upto the appointed time on the next working day. Hard copy can be submitted to any of the locations (office) specified herein. a) Executive Engineer, Public Works Division, Bandhkam Bhavan, Ambajogai -413512 Phone: (02446) 247760, E-mail id : ambejogai.ee@mahapwd.gov.in.	[Cl. 20.1]

<table>
<tr><td></td><td>b) Superintending Engineer, Public Works Circle, Bandkam Bhavan, Samata Colony, Dharashiv - 413501, Phone No.(02472) 222883, 227571.

c) Chief Engineer, Public Works Region, Bandhkam Bhavan, Ch. Sambhajinagar – 431005, (Phone No. 0240 - 2331815, 2331616, Fax No. 0240 - 2332068)</td><td></td></tr>
<tr><td>15.</td><td>The Financial bid will be opened in the Office of the Superintending Engineer, Public Works Circle, Bandkam Bhavan, Samata Colony, Dharashiv-413501 (Place) on as per tender schedule.</td><td>[Cl. 23.1]</td></tr>
<tr><td>16.</td><td>The Bank Guarantee / Draft in favour of Executive Engineer, Public Works Division, Ambajogai payable at Ambajogai</td><td>[Cl. 34]</td></tr>
<tr><td>17.</td><td>The name of Dispute Review Expert is to be notified leter.</td><td>[Cl. 36.1]</td></tr>
<tr><td>18.</td><td>Escalation factors (for the cost of works executed and financial figure to a common base value for works completed)
<table>
<tr><th>Year Before</th><th>Multiply factor</th></tr>
<tr><td>One</td><td>1.10</td></tr>
<tr><td>Two</td><td>1.21</td></tr>
<tr><td>Three</td><td>1.33</td></tr>
<tr><td>Four</td><td>1.46</td></tr>
<tr><td>Five</td><td>1.61</td></tr>
</table></td><td></td></tr>
</table>

ANNEXURE-I

A) List of Key Plant and Equipment to be deployed on Contract Work

[Reference Cl. 4.4 (B) (a)]

Sr. No.	Type of Equipment	Quantity / Numbers
1.	Fully Automatic Micro Processor based PLC with SCADA Enabled Concrete Batch Mix Plant of minimum 25 Cubic Metre per hour capacity of any standard company	1 Number (Owned)
2.	Concrete Pump with 100 metre pipe line	2 Numbers (Owned)
3.	Tower Crane	2 Numbers (Owned)
4.	Needle Vibrator	6 Numbers (Owned)
5.	Trimix Floater (0.9 m Dia.)	2 Numbers (Owned)
6.	Water Motor Pump (5 HP)	4 Numbers (Owned)
7.	Sand Screening & Washing Machine	3 Numbers (Owned)
8.	Acro Steel Centering plates	4500.00 Sq. Metre (Owned)
9.	Water Tanker (10000 Liters)	2 Numbers (Owned)
10.	Transit Mixer (6 Cum Capacity)	3 Numbers (Owned) & 3 Numbers (Hired)
11.	Acro Steel Adjustable Props	1800 Numbers (Owned)
12.	Acro Steel Adjustable Span	700 Numbers (Owned)
13.	Cuplock Scaffolding or H Frame Scaffolding	1200.00 Sq. Metre (Owned)
14.	Tipper	3 Numbers (Owned) & 2 Numbers (Hired)
15.	Vibrator Earth Compactor/Rammer	1 Number (Owned)
16.	Plate Vibrator	5 Numbers (Owned)
17.	Diesel Generator - 82.5 KVA	2 Number (Owned)
18.	Excavator with Rock Breaker	1 Number (Owned)
19.	Loader/Back Hole Loader	1 Number (Owned)
20.	Tower Hoist (Lift)	2 Numbers (Owned)
21.	JCB Machine	1 Number (Owned)
22.	Vibrator Roller	1 Number (Owned)

1. If the Contractor owns a Fully Automatic Micro Processor based PLC with SCADA enabled Concrete Batch Mix Plant of minimum 24 Cubic Metre per hour capacity of any standard company as required under this contract then he should give details of its current location and undertaking whether the Concrete Batch Mix Plant needs to be shifted or otherwise for this work. The Current location of the Concrete Batch Mix Plant should be within 20 Kilometres. The sketch has to be uploaded through online. After opening the Envelope No.1 it will be verified by the department that the distance of the plant to the farthest point of work is within 20 kilometers. If the distance found to be more than 20 Kilometers then Envelope No.2 of the bidder will not be opened i.e. bidder will be disqualified.

A) If owned (as specified above) Fully Automatic Micro Processor based PLC with SCADA Enabled Concrete Batch Mix Plant (Pan Mixer) minimum capacity 25 Cum/Hour must be located within 20 Km. form farthest point of work site then Contractor have to installed the same within 20 Km. form farthest point of work site within 30 days of issue of work order In this respect Tenderer have to submit an additional Security of Rs.10,00,000/- (Rupees Ten Lakhs Only.) through RTGS/NEFT in the account of Executive Engineer, Public Works Division, Ambajogai, vide ICICI Bank Branch: Ambajogai Account No. 219205001124,, IFSC Code ICIC0002192 and scanned copy of challan / remittance slip of the same should be uploaded in Envelope No.1. Failing to which tenderers Envelope No. 2 shall not be opened.

B) If contractor fails to give trial run of this Concrete Batch Mix Plant (PAN Mixer) of minimum 24 Cubic Metre per hour capacity of desired number and capacity within 30 days as specified above, his above said additional Security of Rs.10,00,000/- (Rupees Ten Lakhs only.) shall be encashed without any notice to the contractor without considering any force majeure and shall be forfeited to Government.

C) Encashment of additional Security Deposit as mentioned above shall not absolved the Contractor from the responsibility of installing the Concrete Batch Mix Plant of minimum 24 Cubic Metre per hour capacity of desired number and capacity which is required for the concreting works.

D) No extension of time limit shall be granted at any level for giving trial run after 30 day from the date of issue of work order.

Regarding use of machinery :-

1. The life of new machinery will be considered as 15 years.

2. There will no need of fitness certificate from SE (Mechanical) for first 10 years.

3. After 10th year, the machinery shall be checked and certified for its fitness by SE Mechanical/ACE (Mechanical) every year till the 15th year.

4. After the 15th year, the contractor will get machinery certified every year from SE / ACE (Mechanical) and produce the certificate of fitness. The certificate will be required for machinery where it is necessary and not issued by RTO.

5. If the above mentioned machinery in respect Sr. No. 1 to 4 in ANNEXURE- I is less than 6 years old then tenderer shall have to upload the certificate regarding SCADA either from Automation Manifold Services Pvt. Limited Nagpur or Vasundhara IT Pvt. Ltd Pune in lieu of certificate of Assistant Chief Engineer (Mechanical). In all other cases tenderer have to upload certificate of Assistant Chief Engineer (Mechanical) regarding SCADA. In the absence of this certificate, the Envelop No. 2 (Financial Bid) shall not be opened.

   The above required certificates shall be scanned from original / attested copy and submitted in Envelope No.1.

Note :-

(1) If machinery age is above 10 years, the tenderer should have to submit purchase invoice and certificate issued by Assistant Chief Engineer (Mechanical)

(2) If machinery age below 10 years, the tenderer shall have to submit purchase invoice.

3) In the case of pre-owned machinery i.e. purchase / procured from another owner/ user of the Machinery, scanned copy of following documents shall be attached.

   (a) Proof of Ownership of Previous Owner ie. Tax Invoice / Transfer Agreement and Purchase payment transations proof.

   (b) Sale Agreement of Machinery.

4) In respect of Hired Machinery Tenderer must upload the scanned copy of original agreement on appropriate stamp paper executed for hired with the company who possess the said machinery along with the documentary proof of owner ship who owned the machinery in envelope No. 1.

Note:-The Contractor shall submit only those documents which are required/ asked in the tender Documents, uploading of unnecessary attachments with the tender should be avoided.

A. Use of Specialised Machinery :-

1. For carrying out cement concreting items of the work, use of specialised machinery as per latest MORT&H standard list of machineries shown in the Annexure–I above, it is necessary for the contractor to submit the abstract in format given under Section-2 at 1.5. In case, during physical verification of the details supplied by the bidder, if it is found that the machinery is not meeting with the requirement, his Financial Bid will not be opened in any manner/ case.

With a view to ascertain, whether these machinery is in possession of the contractor and whether he can make available such machinery immediately for use on the work, The details of machinery as above, shall be verified by the department, if required, by physical verification of machinery owned by the contractor, by visiting sites. Contractor should produce sufficient documentary evidence regarding ownership machinery in support of having owned the obligatory machinery. The details of these specialized machinery required to be owned as per MORTH direction used on the work are given in Annexure-I above. In case, during physical verification of the details supplied by the bidder if it is found that the machinery is not meeting with the requirement, his tender in Financial Bid will not be opened in any manner / case. The proforma of the statement shall not be altered by contractor in any manner / case.

Signature of the Bidder

ANNEXURE-II

List of Key Personnel to be deployed on Contract Work
[Reference Cl. 4.5 (B) (b)]

Sr. No.	Contractor's Technical Staff	Minimum Qualification and experience required	Number of Technical Person
1	Project Maneger	B.E. Civil + Minimum10 Years experience	1
2	Project Maneger	B.E. Electrical + Minimum 5 Years experience (2 Years as a manager)	1
3	Site Engineer	Diploma in civil engineering+ Minimum 5 Years experience	2
4	Site Engineer	Diploma in Electrical engineer + Minimum 5 Years experience	1
5	Site Engineer	Diploma in Mechanical engineer + Minimum 5 Years experience	1
6	Site Engineer	Diploma in E & TC/IT engineer + Minimum 5 Years experience	1
7	Site Supervisor	Diploma in civil engineering+ Minimum 3 Years experience	1
8	Plant / SCADA system supervisor	Diploma in Mechanical engineering / ITI, Minimum 2 Years experience	1
9	Structural Engineer	M.E. Structural Minimum 3 Years experience /B.E. Civil + Minimum 5 Years good experience in Structural Work	1
10	Quantity Surveyor	B.E. Civil + 5 Years experience or Diploma in civil engineering + 7 Years experience	1
11	GRIHA Consultant (Associate is accepted)	GRIHA certified professional/ Consultant with 3 years experience + minimum 5 buildings of 4 star rating	1
	Total		**12 Numbers**

Out of the total key persons and technical staff available with bidder shall upload the staff he desires to deploy for this work. This statement shall be downloaded from portal https://bidcap.emahapwd.com. Bidder shall upload this QR based statement downloaded on or before two days of submission.

Signature of Contractor **No. of Corrections** **Executive Engineer**

If this certificate is not uploaded then tender shall be treated as non-responsive.

The contractor shall submit the list of technical personnel with their name and qualifications/ experience after work order issued and before the starting of work. Once the list is approved by engineer in charge it should not be changed without his prior approval. The list so approved of the key personnel their required data shall be entered in the attendance machine prescribed below. To ensure Attendance of above key personnel the contractor shall install face recongnisation based GPS AND SCADA ENABLED attendance machine on site and plant. The location of such machine shall be got approved from the engineer in charge. Key personnel shall register his attendance as many times as instructed by engineer in charge. The attendance so registered shall be uploaded to the PWD e-governance server/portal in real time. The analysis of attendance of these key personnel so registered shall be presented /mailed to engineer in charge and his representative in the format and frequency prescribed by engineer in charge. If after analysis of the attendance data if it is found that, the item of work is executed without attendance of the key personnel the work so executed shall be rejected.

SECTION 2

QUALIFICATION INFORMATION

SECTION – 2
QUALIFICATION INFORMATION

The information to be filled in by the bidder 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.

(These are only standard forms. Details are to be furnished in this format in the form of type written statements which shall be Scanned and Enclosed in Technical Bid duly signed)

1. For Individual Bidders

1.1 Constitution or legal status of Bidder

(Attach Copy)

Place of registration: _____

Principal place of business: _____

Power of attorney of signatory of bid

(Attach)

1.2 Total value of civil Engineering

1.3 Construction work performed in the last five years **

(Rs. in lakhs)

2020-2021
2021-2022
2022-2023
2023-2024
2024-2025

β

1.3.1 Work performed as prime contractor, work performed in the past as a nominated sub- contractor will also be considered provided the Sub-contract involved execution of all main items of work described in the bid document, provided further that all other qualification criteria are satisfied (in the same name) on works of a similar nature over the last five years **

Project Name	Name of the Employer *	Descrip-tion of work	Contract No.	Value of Contract (Rs. Crore)	Date of Issue of work order	Stipulated period of completion	Actual date of compl-etion *	Remarks explaining reasons for delay & work complete.

* *Attach certificate(s) from the Engineer(s)-in-charge.*

** *Immediately preceding the financial year in which bid are received.*

β *Attach certificate(s) from Chartered Accountant*

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

(A) Existing commitments and on-going works :

Description of work	place & State	Contract No.	Name & Address of employer	Value of Contract (Rs. Cr.)	stipulated period of completion	Value of works* remaining to be completed (Rs. Cr.)	Anticipated date of completion.
1	2	3	4	5	6	7	8

* *Attach certificate(s) from the Engineer(s)-in-charge.*

@ *The item of works for which data is requested should tally with that specified in ITB clause 4.5A(C).*

** *Immediately preceding the financial year in which bid are received.*

\# *Delete, if prequalification has been carried out.*

(B) Works for which bids already submitted:

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

1.5 Availability of key items of Contractor's Equipment essential for carrying out the Works [Ref. Clause 4.5(B)(a)]. The Bidder should list all the information requested below.

Item of Equipment	Requirement		Availability proposals			Remarks (from whom to be purchased)
	No.	Capacity	Owned/Leased to be procured	Nos./Capacity	*Age l* Condition	
1	2	3	4	5	6	7

Signature of Contractor **No. of Corrections** **Executive Engineer**

1.6 Qualifications and experience of key personnel required for administration and execution of the Contract [Ref. Clause 4.5(B)(b)]. Attach biographical data. Refer also to Sub Clause 4.3 (e) of instructions to Bidders and Sub Clause 9.1 of the Conditions of Contract.

Position	Name	Qualification	Year of Experience (General)	Years of experience in the proposed position
Project Manager				
Etc				

1.7 Proposed sub-contracts and firms involved. [Refer **ITB** Clause 4.3 (k)]

Sanctions of the works	Value of Sub-contract	Sub-contractor (Name & Address)	Experience in similar work

~~*Attach copies of certificates on possession of valid license for executing water supply / sanitary work / building electrification works*~~

***1.8.** Deleted

1.9 Evidence of access to financial resources to meet the qualification requirements: cash in hand, lines of credit. etc. List them below and attach copies of support documents.

1.10 Name, address, and telephone, telex, and fax numbers of the Bidders' bankers who may provide references if contacted by the Employer.

1.11 Information on litigation history in which the Bidder is involved.

Other Party (ies)	Employer	Cause of Dispute	Amount involved	Remarks showing
1	2	3	4	5

1.12 Statement of compliance under the requirements of Sub Clause 3.2 of the instructions to Bidders. (Name of Consultant engaged for project preparation is**.....)

1.13 Proposed work method and schedule. The Bidder should attach descriptions, drawings and charts as necessary to comply with the requirements of the Bidding documents. [Refer ITB Clause 4.1 & 4.3 (I)]

1.14 Programme

1.15 Quality Assurance Programme

2.0. Deleted

3.0 Additional Requirements

3.1 Bidders should provide any additional information required to fulfill the requirements of Clause 4 of the Instructions to the Bidders, if applicable.

(i) Affidavit

(ii) Undertaking

***(iii) Update of original prequalification application

***(iv) Copy of original prequalification application

***(v) Copy of prequalification letter

* Delete, if prequalification has been carried out.

** Fill the Name of Consultant.

*** Delete, if prequalification has not been carried out.

4.0 Following Statement for Electrical Work

STATEMENTNO.I

Details of works tendered for and works in hand as on the date of submission of the tender

Sr. No	Name Of Work	Place And Country	Works In Hand			Works Tendered For			Remarks
			Tendered Cost	Cost Of Tendering Work	Anticipated Date Of Completion	Estimated Cost	Date When Decision Is Expected	Stipulated Date Or Period Of Completion	
1	2	3	4	5	6	7	8	9	10
				SPECIMEN FORM					

Note : Attested copies of work done certificate or work order shoul be attached in support of above statement.

Signature of Prime Contractor/ Sub-Contractor (Electrical)

Signature of Contractor **No. of Corrections** **Executive Engineer**

STATEMENTNO.II
DETAILS OF WORKS OF SIMILAR TYPE & MAGNITUDE CARRIED OUT BY THE TENDERER

Sr. No.	Name Of Works	Cost Of Work	Date Of Starting	Stipulated Date Of Completion	Actual Date Of Completion	Remarks
1	2	3	4	5	6	7
			SPECIMEN FORM			

Signature of Prime Contractor/ Sub-Contractor (Electrical)

STATEMENT NO.III
Details of Plant and machinery immediately available with the Tenderer for this work

Sr. No.	Name Of Equipment	No. of Units	Kind And Make	Capacity	Age and Condition	Present Location	Remarks
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
			SPECIMEN FORM				

Signature of Prime Contractor/ Sub-Contractor (Electrical)

STATEMENT NO.IV
Details Of Technical Person Available with the contractor

Sr. No.	Name Of Person	Qualification	Whether working in field or in office	Experience of execution of similar work	Period for which the person is working with tenderer	Remarks
1	2	3	4	5	6	7
			SPECIMEN FORM			

Signature of Prime Contractor/ Sub-Contractor (Electrical)

Signature of Contractor **No. of Corrections** **Executive Engineer**

Annexure – A

Turnover Details as per Chartered Accountants Certificate (Last 5 years)

Sr. No.	Year	Turnover	Updated Turnover with factor	Remarks
1.	2020-21			
2.	2021-22			
3.	2022-23			
4.	2023-24			
5.	2024-25			

Note :- Bidder shall upload CA certificate regarding annual turnover.

Work Done Details (Last 5 Years)

Sr. No.	Dept. Name	Name of work	Date of work order	Time period of work	Cost of work	Uptodate Yearwise Expenditure / work done					Balance cost	Upload work order
						1	2	3	4	5		
						20-21	21-22	22-23	23-24	24-25		

Note : Bidder shall upload work done certificate of Engineer-in-charge in support.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Annexure – B

(List of Key Personnel to be deployed on contract work)

Sr. No.	Personnel	Qualification	
1.			
2.			
3.			
4.			
5.			

Note : Bidder shall submit the name and C.V.'s of above personnel with all details in filed given in software.

Signature of Contractor **No. of Corrections** **Executive Engineer**

ANNEXURE M(i)

AUTHORITY LETTER

(Ref.Government of Maharashtra, water conservation Department's Marathi Resolution – Corrigendum no.3-nivida 0417/case no.247/MP-1, dated 8th April 2021)

Name of Site/Work : ----------

I/We (Name of contractor) ..... hereby certify that,

1. I/We have visited and inspected actual site (Latitude - (N) & Longitude - (E))

Latitude & Longitude are taken from my own device. Geo tagged photo copies of
the area submitted online in the Envelope No.1 i.e. Technical Envelope.

2. I/We have visited and inspected all quarries of material rwquired for this work and satisfied about the suffient material can be obtained from those quarries.

3. I/We have taken information from the department about quarry, cement & steel leads and I/We am/were satisfied with it.

4. I/We have taken information of proposed project from the department regarding scope of project , foundation details, information of land acquisition.

5. I/We are able to deploy all resoures in time to complete the project.

Visiting Date : Time :

Contractor/Authorised Representative Sub-Divisional Officer/ Representative

Identity Document -

Identity Document Number. -

(This document should be submitted in two coppies . one copy of Annexure 'M (i)' should be submitted in dropbox provided by the department at the work site and another copy along with Geo Tagged photo copies should upload in the Envelope No.1 (i.e. Technical Envelope) at the time of online submission of the tender.)

Signature of Contractor **No. of Corrections** **Executive Engineer**

DECLARATION OF CONTRACTOR (Electrical Work)

Name of Work : Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

I/We here by declare that I/We have made my self/our selves thoroughly conversant with the local conditions regarding all materials and labour on which I/We have base my/our rates for this tender. The specifications and leads on this work have been carefully studied and understood before submitting this tender. I/We undertake to use only the best materials approved by Executive Engineer or his duly authorized assistant during execution of the work and to abide by the decisions

Signature of Prime Contractor/Sub-Contractor (Electrical)

Signature of Contractor **No. of Corrections** **Executive Engineer**

Affidavit (on Rs.100/- Stamp Paper) (Electrical Work)

Name of Work : Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

I ..... age ..... address ..... (Authorized signatory to sign the contract), hereby submit, vide this affidavit in truth, that I am the owner of the contracting firm ..... / authorized signatory and I am submitting the documents in envelope no.1 for the purpose of scrutiny of the contract. I hereby agree to the conditions mentioned below :-

1. I am liable for action under Indian Penal Code for submission of any false / fraudulent paper / information submitted in envelope no.1.

2. I am liable for action under Indian Penal Code if during contract period and defect liability period, any false information, false bill of purchases supporting proof of purchase, proof of testing submitted by my staff, subletting company or by myself, I will be liable for action under Indian Penal Code.

3. I am liable for action under Indian Penal Code if any paper are found false / fraudulent during contract period and even after the completion of contract (finalization of final Bill)

Signature of Prime Contractor/Sub-Contractor (Electrical)

Signature of Contractor **No. of Corrections** **Executive Engineer**

"“UNDERTAKING”

Name of Work : Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

I / We hereby give the undertaking that we have never been Black Listed / Banned / Suspended by any Government , Semi Govt Department , or any other institution / organization.

Signature of Prime Contractor/Sub-Contractor (Electrical)

SAMPLE FORMAT FOR

EVIDENCE OF ACCESS TO

OR

AVAILABILITY OF CREDIT FACILITIES

(CLAUSE 4.2 (i) OF ITB)

BANK CERTIFICATE

This is to certify that M/s. _____ is a reputed company with a good financial standing.

If the contract for the work, namely _____ _____ is awarded to the above firm, we shall be able to provide overdraft/credit facilities to the extent of Rs _____ (Rs. in words _____) to meet their working capital requirements for executing the above contact during the contract period.

(Signature)

Name of Bank
Senior Bank Manager
Address of the Bank

AFFIDAVIT (Civil Work)

1. I, the undersigned, do hereby certify that all the statements made in the required attachments are true and correct.

2. The undersigned also hereby certifies that neither our firm M/s _____ have abandoned any work on Building/Bridges/Roads etc. nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this bid.

3. The undersigned hereby authorize (s) and request(s) any bank, person, firm or corporation to furnish pertinent information deemed necessary and requested by the Department to verify this statement or regarding my (our) competence and general reputation.

4. 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.

_____

(Signed by an Authorised Officer of the Firm)

_____

Title of Officer

_____

Name of Firm

_____

Date

Signature of Contractor **No. of Corrections** **Executive Engineer**

UNDERTAKING (Civil Work)

I, the undersigned do hereby undertake that our firm M/s _____ _____ would invest a minimum cash up to 25% of the work during implementation of the Contract.

_____

(Signed by an Authorised Officer of the Firm)

_____

Title of Officer

_____

Name of Firm

_____

Date

Annexure – A

Affidavit (Civil Work)
(on Stamp paper of Rs.100/- denomination)

I ..... age ..... address ..... (Authorized signatory to sign the contract), hereby submit, vide this affidavit in truth, that I am the owner of the contracting firm ..... / authorized signatory and I am submitting the documents in Envelope No.1 for the purpose of scrutiny of the contract. I hereby agree to the conditions mentioned below :-

1. That, I have submitted online Tender for the work (name of work) on portal http://maharashtra.etenders.in of P.W.D.
2. That, I have carefully gone through, read, thoroughly studied and understood all terms and condition, specification included in the tender document (Tender Form, Detail Tender Notice, conditions and specifications common set of Deviations drawings etc.) I hereby accept all these conditions, I agree to abide by the terms and condition in the tender document and agree to execute the work as per terms and conditions, specifications laid down in the tender document.
3. That, I have furnished EMD (Earnest Money Deposit) from the Bank Account in the name of my firm only.
4. I do here by state on oath that, the documents uploaded by in Envelope No. 1 of this tender are true, correct and bonafied, there are no errors and omissions in the uploaded documents.
5. I am liable for action under Indian Penal Code for submission of any false/ fraudulent paper / information submitted in Envelope No.1.
6. I am liable for action under Indian Penal Code if during contract period and defect liability period, any false information, false bill of purchases supporting proof of purchase, proof of testing submitted by my staff, subletting company or by myself, I will be liable for action under Indian Penal Code.
7. I am liable for action under Indian Penal Code if any paper are found false / fraudulent during contract period and even after the completion of contract (finalisation of final bill).

Place :-
Date :- (Signature of Contractor)

(The Scanned copy of above AFFIDAVITS should be uploaded in Envelope No.1 and The Original Copy of the Bond of the above affidavit should be submitted when demanded by this office or before award of work to concerned Division Office.)

Signature of Contractor **No. of Corrections** **Executive Engineer**

SECTION 3

CONDITIONS OF CONTRACT

Conditions of Contract Table of Contents

CONDITIONS OF CONTRACT
A - GENERAL

Definitions

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

The **Adjudicator** (synonymous with **Dispute Review Expert**) is the person appointed jointly by the Employer and the Contractor to resolve disputes in the first instance, as provided for in Clauses 24 and 25. The name of the Adjudicator is defined in the Contract Data.

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

Compensation Events are those defined in Clause 44 hereunder.

The Completion Date is the date of completion of the Works as certified by the Engineer in accordance with Sub Clause 55.1.

The **Contrac**t 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 below.

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 has been accepted by the Employer.

The **Contractor's Bid** is the completed Bidding document submitted by the Contractor to the Employer and includes Technical and Financial bids.

The **Contract Price** is the price stated in the Letter of Acceptance and thereafter as adjusted in 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.

The **Defects Liability Period** is the period named in the Contract Data and calculated from the Completion Date.

The **Employer** is the party who will employ the Contractor to carry out the, Works.

The **Engineer** is the person named in the Contract Data (or any other competent person appointed and notified to the contractor to act in replacement of the Engineer) who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing and valuing Variations to the Contract, awarding extensions of time, and valuing the Compensation Events.

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 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 which is to have a mechanical, electrical, electronic or chemical or biological function.

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

Site Investigation Reports are those which were included in the Bidding documents and are factual interpretative reports about the surface and sub-surface conditions at the site.

Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer.

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

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

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

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

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

2.0 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 the 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 shall be interpreted in the following order of priority:

(1) Agreement

(2) Letter of Acceptance, notice to proceed with the works

(3) Contractor's Bid

(4) Contract Data

(5) Conditions of Contract including Special Conditions of Contract

(6) Specifications

(7) Drawings

(8) Bill of quantities and

(9) any other document listed in the Contract Data as forming part of the Contract.

3.0 Language and Law

3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

4.0 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.

5.0 Delegation

5.1 The Engineer may delegate any of his duties and responsibilities to other people except to the Adjudicator after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6.0 Communications

6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act).

7.0 Sub-contracting

~~**7.1** The Contractor may sub contract any portion of work, upto a limit specified in Contract Data, with the approval of the Engineer but may not assign the Contract without the approval of the Employer in writing. Sub-contracting does not alter the Contractor's obligations.~~

8.0 Other Contractors

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. The Contractor shall as referred to in the Contract Data, 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.

9.0 Personnel

9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.

9.2. If the Engineer asks the Contractor to remove a person who is a member of the Contractor's staff or his 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 work in the Contract.

10.0 Employer's and Contractor's Risks

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.

11.0 Employer's Risks

11.1 The Employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the Works in India, the risks of war, hostilities, 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, or (b) a cause due solely to the design of the Works, other than the Contractor's design.

12.0 Contractor's Risks

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 are the responsibility of the Contractor.

13.0 Insurance

13.1 The Contractor shall provide, in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Contract Period, 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, Plant and Materials;

(b) loss of or damage to Equipment:

(c) loss of or damage of property (except the Works, Plant, Materials and Equipment) in connection with the Contract; and

(d) personal injury or death.

13.2 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 the types and proportions of currencies required to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

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

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

13.6 ADDITIONAL GENERAL CONDITION ABOUT INSURANCE :-

Contractor shall take out necessary insurance Policy / Policies (viz. Contractors All Risks Insurance Policy, Erection All Risks insurance policy etc. as decided by the Director of Insurance) so as to provide adequate insurance cover for execution of the awarded contract work for total contract value and complete contract period compulsorily from the " Directorate of Insurance, Maharashtra State, Mumbai " only. Its postal address for correspondence is "264, MHADA, First Floor, Opp. Kalanagar, Bandra (E) Mumbai-400 051" (Telephone Nos. 26590403 / 26590690 and Fax Nos. 26592461 / 26590403) similarly all workmen's appointed to complete the contract work are required to insure under workmen's compensation Insurance Policy, Insurance Policy / Policies taken out from any other company will not be accepted. If any contractor has effected insurance with any Insurance Company, the same will not be accepted and the amount of premium calculated by the Government Insurance Fund will be

recovered directly from the amount payable to the contractor, for the executed contract work and paid to the Directorate of Insurance Fund, Maharashtra State. The Director of Insurance reserves the right to distribute the risks of insurance among the other insurers.

13.6 (A) As per the Govt. Resolution No. FD/Insurance-1098/Case No.28/98, dated 19-08-1998 and Director of Insurance Maharashtra, Mumbai letter dated 26-04-2005 Contractor has to submit Govt. Insurance policy before starting the work, failing which an amount equivalent to one percent (1%) of the tendered cost will be recovered from the First Running Account bill of this work.

13.6 (B) BUILDING & OTHER CONSTRUCTION WORKERS WELFARE CESS :

Building and other construction works on @ 1% or at the rate amended from time to time as intimated by the competent authority of building and other construction workers Welfare Dept. 1996 will be deducted from bill amount whether measured bill, advance payment or secured advance.

14.0 Site Investigation Reports

14.1 The Contractor, in preparing the Bid, shall rely on any site Investigation Reports referred to in the Contract Data, supplemented by any information available to the Bidder.

15.0 Queries about the Contract Data

15.1 The Engineer will clarify queries on the Contract Data.

16.0 Contractor to Construct the Works

16.1 The Contractor shall construct and install the Works in accordance with the Specification and Drawings.

17.0 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 program submitted by the Contractor, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

18.0 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 if they comply with the Specifications and Drawings.

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

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

18.4 The Contractor shall obtain approval of third parties to the design 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.

19.0 Safety

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

20.0 Discoveries

20.1. Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Engineer of such discoveries and carry out the Engineer's instructions for dealing with them.

21.0 Possession of the Site

21.1 The Employer shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be Compensation Event.

22.0 Access to the Site

22.1 The Contractor shall allow the Engineer and any person authorized by the Engineer access to the Site, to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured / fabricated / assembled for the works.

23.0 Instructions

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

23.2 The Contractor shall permit the Employer to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Employer, if so required by the Employer.

24.0 Disputes

24.1 If the Contractor believes that a decision taken by the Engineer was either outside the authority given to the Engineer by the Contract or that the decision was wrongly taken, the decision shall be referred to the Dispute Review Expert within 14days of the notification of the Engineer's decision.

25.0 Procedure of Disputes

25.1. The Employer proposes that [name of proposed Dispute Review Expert as indicated in Appendix on Page No. 38] be appointed as Dispute Review Expert under the Contract, at a daily fee as indicated in Appendix plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should so state in the Bid. If in the Letter of Acceptance, the Employer has not agreed on the appointment of the Dispute Review Expert, the Dispute Review Expert shall be appointed by the Council of Indian Roads Congress at the request of either party.

25.2 For works costing above Rs.5 Crore the procedure for arbitration will be as per G.R of Law & Judiciary Department issued vide Sankirn- 2016/C.R. 20/ Ka-19 dt. 13/10/2016 regarding " Institutional Arbitration Policy".

26.0 Replacement of Dispute Review Expert

26.1 Should the Dispute Review Expert resign or die, or should the Employer and the Contractor agree that the Dispute Review Expert is not fulfilling his functions in accordance with the provisions of the Contract, a new Dispute Review Expert will be jointly appointed by the Employer and the Contractor. In case of disagreement between the Employer and (he Contractor, within 30 days, the Dispute Review Expert shall be designated by the Appointing Authority designated in the Contract Data at the request of either party, within 14 days of receipt of such request.

B- TIME CONTROL

27.0 Programme

27.1 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 along with monthly cash flow forecast.

27.2 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 work including any changes to the sequence of the activities.

27.3 The Contractor shall submitted 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.

27.4. 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 is to show the effect of Variations and Compensation Events.

28.0 Extension of the Intended Completion Date

28.1 The Engineer shall extend the Intended Completion Date 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.

28.2 The Engineer shall decide whether and by how much to extend the Intended Completion Date within 35 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 of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

28.3 The Engineer shall within 14 days of receiving full justification from the contractor for extension of Intended Completion Date refer to the Employer his decision. The Employer shall in not more than 21 days communicate to the Engineer the acceptance or otherwise of the Engineer's decision. If the Employer fails to give his acceptance, the Engineer shall not grant the extension and the contractor may refer the matter to the Dispute Review Expert under Clause 24.1.

29.0 Deleted

30.0 Delays Ordered by the Engineer

30.1 The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works.

31.0 Management Meetings

31.1 Either the Engineer or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

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

32.0 Early Warning

32.1 The Contractor is to warn the Engineer at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price or delay the execution of works. The Engineer may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate is to be provided by the Contractor as soon as reasonably possible.

32.2 The Contractor shall cooperate with the Engineer in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer.

C. QUALITY CONTROL

33.0 Identifying Defects

33.1 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.

34.0 Tests

If the Engineer instructs the Contractor to carry out a test not specified in the Specification 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. If there is no Defect the test shall be a Compensation Event.

35.0 Correction of Defects

35.1 The Engineer shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

35.2 Every time notice of a Defect is given, the Contractor shall correct the notified Defect within the length of time specified by the Engineer's notice.

36.0 Uncorrected Defects

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 this amount.

D. COST CONTROL

37.0 Bill of Quantities

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

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

38.0 Claims for quantity entered in the tenders

Excess quantity of any tender item shall be executed by prior permission of competent authorities. These quantities shall be payable at accepted tender rates only.

39.0 Variations - Deleted

40.0 Deleted

41.0 Cash Flow Forecasts

41.1 When the Programme is updated, the contractor is to provide the Engineer with an updated cash flow forecast.

42.0 Payment Certificates

42.1 The Contractor shall submit to the Engineer monthly statements of the estimated value of the work completed less the cumulative amount certified previously.

42.2 The Engineer shall check the Contractor's monthly statement within 14 days and certify the amount to be paid to the Contractor after taking into account any credit or debit for the month in question in respect of materials for the works in the relevant amounts and under conditions set forth in sub-clause 51(3) of the Contract Data (Secured Advance).

42.3 The value of work executed shall be determined by the Engineer.

42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

42.5 The value of work executed shall include the valuation of Variations and Compensation Events.

42.6. The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

43.0 Payments

43.1 Payments shall be adjusted for deductions for advance payments, retention, other recoveries in terms of the contract and taxes at source, as applicable under the law. The bill shall be paid after due verification and upon availability of budget.

43.2 If an amount certified is increased in a later certificate as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

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

44.0 Compensation Events

44.1 Compensation shall be applicable and only extension may be considered on merits if not on part of Contractor

44.2 The Contractor shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Contractor not having given early warning or not having cooperated with the Engineer.

45.0 Tax

45.1 The rates quoted by the contractor shall be deemed to be inclusive of the sales and other taxes except GST that the contractor will have to pay the performance of this contract. The Employer will perform such duties in regard to the deduction of such taxes at source as per applicable law.

45.2 Conditions for G.S.T :- As per government of maharashtra P.W Department english circular No. Sankirna -2017/C.R.121 (Part-ii) / building-2 dt-19/09/2017 & dt. 23.10.2017 GST shall be payable on the accepted contract value at prevailing rates separately. Contractor shall quote his offer excluding GST.
The GST @ 2 % (1% SGST + 1%CGST) of the contract amount will be recovered from the bill of the registered contractors who are registered under GST Act.

Extra Burden of GST any shall be compensated by PWD upon production of authenticated records of net extra burden on account of GST

46.0 Currencies

46.1 All payments shall be made in Indian Rupees.

47.0 Price Adjustment :- <u>Seperately Attached</u>

48.0 Retention

48.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the Contract Data until Completion of the whole of the Works.

48.2 On Completion of the whole of the Works total amount retained is repaid to the Contractor after contract Period has passed and the Engineer has certified that all the works completed as per specification of contract document.

48.3 On completion of the whole works, the contractor may substitute retention money with an "on demand" Bank guarantee.

48.4 INCOME TAX :-

The Income Tax @ 2.00 % and surcharge thereon or at the rates amended from time to time or as intimated by the competent Income Tax authority shall be deducted from bill amount, whether measured bill, advance payment or secured advance.

48.5 GST TAX :-

MGST and CGST has been implemented by the respective government with effect from 01.07.2017. Extra burden of GST if any shall be compensated by PWD upon production of authenticated records of net extra burden on account of GST.

48.6 ROYALTY CHARGES :-

As per instructions issued vide P.W.D. Government of Maharashtra Resolution of Revenue and Forest Department No.Gaukhani-10/1012/CR-603/Kh dated 11/5/2015 while framing the estimates, royalty charges for the items of supply of materials like rubble, metal, crushed metal, soft murum / hard murum, sand and soil shall be considered in the rate analysis of respective items @ 141.34 per Cubic Metre (Rs. 400.00 per brass) or actual and shall be recovered.

The contractor has to pay these charges directly to Revenue Department and original challans, permission documents shall be produced to concerned Executive Engineer, If contractor fails to produce these original documents the royalty charges shall be recovered from contractor's bill.

49.0 Liquidated Damages

49.1 The Contractor shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date (for the whole of the works or the milestone as stated in the contract data). The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages does not affect the Contractor's liabilities.

49.2 If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the over payment calculated from the date of payment to the date of repayment at the rates specified in Sub Clause 43.1.

49.3 If the contractor fails to comply with the time for completion as stipulated in the tender, then the contractor shall pay to the employer the relevant sum stated in the Contract Data as Liquidated damages for such default and not as penalty for everyday or part of day which shall elapse between relevant time for completion and the date stated in the taking over certificate of the whole of the works on the relevant section, subject to the limit stated in the contract data.

The employer may, without prejudice to any other method of recovery deduct the amount of such damages from any monies due or to become due to the contractor. The payment or deduction of such damages shall not relieve the contractor from his obligation to complete the works on from any other of his obligations and liabilities under the contract.

49.4 If, before the Time for Completion of the whole of the Works or, if applicable, any Section, a Taking - Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

50.0 Bonus - Deleted

51.0 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.
The secured advance for material brought to site by the contractor is paid in accordance with para 10.2.21 of account code but it is obligatory to upload photos of materials for which secured advance is sought, with latitude and longitude on official website of PWD and after due verification by engineer in charge on website. Secured advance shall not be paid in the month of march.

52.0 Securities

52.1 The Performance Security (including 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 and additional security for unbalanced bids shall be valid until completion of defect liability period.

53.0 Deleted

54.0 Cost of Repairs

54.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. FINISHING THE CONTRACT

55.0 Completion

55.1 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.

56.0 Taking Over

56.1 The Employer shall take over the Site and the Works within seven days of the Engineer issuing a certificate of Completion.

57.0 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, the 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.

58.0 Operating and Maintenance Manuals-

58.1 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.

59.0 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 Contract 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 28 days;

(c) the Employer or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;

(e) the Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer;

(f) the Contractor does not maintain a security which is required;

(g) the Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data; and

(h) if the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this paragraph: "corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition."

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, Soon as reasonably possible.

60.0 Payment upon Termination

60.1 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 advance payments received up to the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed as indicated in the Contract Data. Additional Liquidated Damages shall not apply. If the total amount due to the Employer exceeds any payment due to the Contractor the difference shall be a debt payable to the Employer.

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.

61.0 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.

62.0 Release from Performance

If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either 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 commitment was made.

F. SPECIAL CONDITIONS OF CONTRACT

1. LABOUR:

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.

The Contractor shall, if required by the Engineer, 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 and his sub-contractors shall abide at all times by all existing labour enactments and rules made there under, 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 made there under, 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/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 and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

SALIENT FEATURES OF SOME MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENTS ENGAGED IN BUILDING AND OTHER CONSTRUCTIONWORK.

(a) Workmen 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) Employees P.P. and Miscellaneous Provision Act 1952: The Act Provides for monthly contributions by the employer plus workers @ 10%or 8.33%. The benefits payable under the Act are:

(i) Pension or family pension on retirement or death, as the case may be.

(ii) Deposit linked insurance on the death in harness of the worker.

(iii) Payment of P.P. accumulation on 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:- Itlays 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) Payment of Bonus Act 1965 :- The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs.3500/-per month or less. The bonus to be paid to employees getting Rs.2500/- per month or above upto Rs.3500/- per month shall be worked out by taking wages as Rs.2500/ -per month only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.

(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 *SO).* 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, travelling expenses from home upto the establishment and back, etc.

(o) The Building and Other Construction Workers (Regulation of Employment and Conditions of Services) Act 1996 and the Cess Act of 1996 :- As per Government of Maharashtra, Industry, Energy & Labour Deptt. G.R. No. BLA 2009/Pra.Kra.108/Kamgar-7A, dt. 17/6/2010& Public Works Department Circular No. BDG-2010/Pra.kra.277/Building-2, dated 28/09/2010, Building and Other Construction Workers Welfare Cess at one percent or at the rates amended from time to time as intimated by the competent authority under Building and Other Constructions Worker Welfare Act 1996 will be deducted from the Bill amount, whether measured Bill, advance payment or Secured Advance.

(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.

(q) The Contractor shall _____ of works DGIC at a. If

3. ARBITRATION

3.1 The Employer proposes that [name of proposed Dispute Review Expert as indicated in Appendix] be appointed as Dispute Review Expert under the Contract, at a daily fee as indicated in Appendix plus reimbursable expenses. If the Bidder disagrees with this proposal, the Bidder should so state in the Bid. If in the Letter of Acceptance, the Employer has not agreed on the appointment of the Dispute Review Expert, the Dispute Review Expert shall be appointed by the Council of Indian Roads Congress at the request of either party.

3.2 For works costing above Rs.5 Crore the procedure for arbitration will be as per G.R of Law & Judiciary Department issued vide Sankirn-2016/C.R. 20/ Ka-19 dt. 13/10/2016 regarding " Institutional Arbitration Policy".

SECTION - 4
CONTRACT DATA

CONTRACT DATA

			Clause Reference with respect to Section - 3
	Items marked "N/A" do not apply in this Contract		
1.	The Employer is **Executive Engineer, Public Works Division, Ambajogai - 431517** (on behalf of Governer of Maharashtra)		[Cl.1.1]
2.	The Engineer is **Executive Engineer, Public Works Division, Ambajogai - 431517** Name of Authorised Representative :		
3.	The Dispute Review Expert appointed jointly by the employer and Contractor is: * Name : To be notified letter *Address:		[Cl.1.1] 25.1
4.	The Defects Liability Period is **120 (One Hundred Twenty)** months for civil work and **36 (Thirty Six)** months for Electrical work from the date of completion.		[Cl.1.1 & 35]
5.	The Start Date shall be **Seven** days from the date of issue of the Work Order.		[Cl.1.1]
6.	The Intended Completion Date for the whole of the Works is **Eighteen Months** after start of work with the following milestones:		[Cl.1.1,17&28]
	Milestone dates:		[Cl.2.2,& 49.1]
	Physical Works to be completed	Period from the start date	
	Milestone 1 (25% of Contract Price)	06 Months	
	Milestone 2 (50% of Contract Price)	12 Months	
	Milestone 3 (75% of Contract Price)	15 Months	
	Milestone 4 (100% of Contract Price)	18 Months	
7.	The Site Location		[Cl.1.1]
8.	The name and identification number of the Contract is:-		[Cl.1.1]

		Clause Reference with respect to Section - 3
9.	The work consist of ... 1. **Construction of New Administrative Building at Parali Tq. Parali Dist. Beed** The works shall, inter alia, include the following, as specified or as directed:	[Cl.1.1]
	(A) Road Works :- Site Clearance; setting out and layout; widening of existing carriageway and strengthening including camber corrections; construction of new road/parallel service road; bituminous pavements remodelling/ construction of junctions, intersections, bus bays, laybyes; supplying and placing of drainage channels, flumes, guard posts and guard other related items; construction/extension of cross drainage works, bridges, approaches and other related stones; road markings, road signs and kilometre / hectometre stones; protective works for roads/bridges; all aspects of quality assurance of various components of the works rectification of the defects in the completed works during the Defects Liability Period; submission of " As Built" drawings and other related documents; and other item of work as may be required to be carried out for completing the works in accordance with the drawings and provisions of the contract to ensure safety.	
	(B) Bridge Works Site Clearance; setting out, provision of foundations, piers abutments and bearings; pre-stressed / reinforces cement concrete superstructure; wearing coat, hand railing, expansion joints, approach slabs, drainage spouts / down take pipes, arrangements for fixing light posts, water mains, utilities etc. provision of suitably designed protective works, wing / return walls; provision of road markings, road signs etc. all aspects of quality assurance; clearing the site and handing over the works on completion; rectification of the defects during the Defects Liability Period and submission of " As Built" drawings and other related documents; and other item of work as may be required to be carried out for completing the works in accordance with the drawings and provisions of the contract to ensure safety.	

		Clause Reference with respect to Section - 3
	(C) Buildings and Other Items Any other items as required to fulfil all contractual obligations as per the Bid documents	
10.	The following documents also form part of the Contract: Addendum issued under clause 9.24 pursuant to clause 10 on Page No. 23	[Cl. 2.3(9)]
11.	The law, which applies to the Contract, is the **law of Union of India.**	[Cl. 3.1]
12.	The language of the Contract documents is **English**	[Cl. 3.1]
13.	Deleted	[Cl. 7.1]
14.	The Schedule of Other Contractors –	[Cl. 8]
15.	The Schedule of Key personnel - As per Annex-II to section I	[Cl. 9]
16.	The minimum insurance cover for physical property, injury and death is **Rs. 5.00 Lakhs** 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.	[Cl. 13]
17.	Site investigation report	[Cl. 14]
18.	The site possession Dates shall be within three days from issue of notice to proceed with the work.	[Cl. 21]
19.	Fees and types of reimbursable expenses to be paid to the Dispute Review Board (To be inserted later)	[Cl. 25]
20.	Appointing Authority for the Dispute Review Expert-Council, Indian Roads Congress, New Delhi	[Cl. 24, 25, 26]

		Clause Reference with respect to Section - 3
21.	The period for submission of the programme for approval of Engineer shall be 21 days from the issue of letter of Acceptance	[Cl. 27.1]
22.	The period between programme updates shall be **30 day.**	[Cl. 27.3]
23.	The amount to be withheld for late submission of an update programme shall be **Rs. 5.00 lakhs**	[Cl. 27.3]
24.	The following events shall also be Compensation Events:	[Cl. 44]
	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 mobilisation 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, archaeological or religious structures, monuments interfering with the works	
	(viii) Restriction of access to ground imposed by civil. judicial, or military authority.	
25.	The currency of the Contract is **Indian Rupees**	[Cl. 46]

				Clause Reference with respect to Section - 3
26.	The Proportion of payments retained (retention money) shall be 2 % from each bill subject to maximum of 2 % of final contract price.			[Cl. 48]
27	Amount of liquidated damages for delay in completion of works		(I) For Whole of work $(1/2000)^{th}$ of the initial contract price rounded off to the nearest thousand per day. (II) for sectional completion maximum amount will be equal to security deposit.	[Cl. 49]
28.	The amount of the advance payment are			
	Nature of Advances		**Conditions to be fulfilled**	
	ii. Secured advance for non-perishable materials brought to site	75% of Invoice Value	a) The materials are in accordance with the specification for works. b) Such materials have been delivered to site, and are properly stored and protected against damage or deterioration to the satisfaction of the Engineer. The Contractor shall store the bulk material in measurable stacks; c) The Contractor's records of the requirements, orders, receipt and use of materials are kept in a form approved by the Engineer and such records shall be available for inspection by the Engineer. d) The contractor has submitted with his monthly statement the estimated value of the materials on site together with such documents as may be required by the Engineer for the purpose of valuation of the materials and providing evidence of ownership and payment thereof. e) Ownership of such materials shall be deemed to vest in the Employer for which the Contractor has submitted an Indemnity Bond in an acceptable format, and	[Cl. 51]

				Clause Reference with respect to Section - 3
			f) The quantities of materials are not excessive and shall be used within a reasonable time as determined by the Engineer	
	(The advance payment will be paid to the Contractor no later than 28 days after fulfillment of the above conditions).			
29.	**Repayment of Secured advance :**			[Cl. 51.4]
	The advance shall be repaid from each monthly payments to the extent materials [for which advance was previously paid have been incorporated into the works.			
30.	The Securities shall be for the following minimum amounts equivalent as a percentage of the Contract Price:			[Cl. 52]
	Performance Security Rs..... (to be decided after evaluation of the bid) as additional security in terms of ITB Clause 29.5			
	The Standard form of Performance Security acceptable to the Employer shall be an unconditional Bank Guarantee of the type as presented in Section 8 of the Bidding Documents.			
31.	The Schedule of Operating and Maintenance Manuals _____ N/A			[Cl. 58]
32.	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]
33.	The amount to be withheld for failing to supply "as-built" drawings by the date required is **Rs. 10.00 Lakhs.**			[Cl. 58]
34.	The following events shall also be fundamental breach of contract : "The Contractor has contravened Clause 9 of GCC."			[Cl. 59.2]
35.	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 percent.			[Cl. 60]

SECTION 5

TECHNICAL SPECIFICATIONS

ADDITIONAL GENERAL CONDITIONS AND SPECIFICATIONS

Note: These are to apply as additional Specifications and Conditions unless otherwise already provided for contradictorily elsewhere in this contract.

1 CONTRACTOR TO STUDY SITE CONDITIONS:

The Contractor shall be deemed to have carefully examined the work and site conditions including labour the general and the special conditions, the specification schedules, and drawings and shall be deemed to have, visited the site of the works and to have fully informed himself regarding the local condition and carried out his own investigations to arrive at the rates quoted in the tender. in this regard, he will be given necessary information to the best of knowledge of department but without any guarantee about it.

If he shall have any doubt as to the meaning of any portion of these general condition or the special conditions or the scope of work or the specifications and drawings or any other matter concerning the contract, he shall in good time before submitting his tender set forth the particulars thereof and submit them to the **Executive Engineer, Public Works Division, Ambajogai** in writing in order that such doubts may be clarified authoritatively before tendering. Once a tender is submitted the matter will be decided in accordance to tender condition in absence of such authentic pre-clarification.

1 A. Competency of Tender

The work will be awarded only to those contractors who are considered to be substantially responsive bidders, capable of performing the class of work to be completed, before passing the final award any or all bidders may have to show that he has the necessary experience, facilities, ability and financial resources to execute the work in satisfactory manner and also within the stipulated time.

2 INDEMNITY :

The contractor shall indemnify the Government against all actions, suites, suites claims and demands brought or made against it in respect of any thing done or omitted to be done by the contractor in execution of or in connection with the work of this contract and against any loss or damage to the Government in consequence of any action or suit being brought against the contractor for any thing done or committed to be done in the execution of the works of this contract.

3. DEFINITIONS : Unless excluded by or repugnant to the context : -

a) The expression "**Government**" as used in the tender documents shall mean the Public Works Department of the Government of Maharashtra.

b) The expression "**Chief Engineer**" as used anywhere in the tender papers shall mean Officer for the time being of Government of Maharashtra who is designated as such.

c) The expression "**Superintending Engineer**" as used in the tender papers shall mean an officer of Superintending Engineer's rank (by whatever designation he may be known) under whose control the work lies for the time being.

d) The expression "**Engineer" or "Engineer-in-charge**" as used in the tender papers shall mean the Executive Engineer, in charge of the work for the time being.

e) The expression "**Employee**" used in the tender papers shall mean the party who will employ the contractor to carry out the work.

f) The expression "**Deputy Chief Architect**" as used in the tender paper shall mean the Deputy Chief Architect, P.W.D. for this work at Auranagabd.

g) The expression "**Contractor**" used in the tender papers shall mean the successful tenderer whose tender has been accepted, and who has been authorised to proceed with the work.

h) The expression "**Contract**" as used in the tender papers shall mean the deed of contract together with its original accompaniment and those later incorporated in it by mutual consent.

i) The expression "**Plant**" as used in the tender papers shall mean every machinery, necessary or considered necessary by the Engineer to execute, construct, complete and maintain the works and used in, altered, modified, substituted and additional work ordered in the time and in the manner herein provided and all temporary materials and special and other articles of appliances of every sort, kind and description whatsoever intended or used hereof.

j) "**Drawing**" shall mean the drawings referred to in the specifications and any modifications of such drawings approved in writing by Engineer and such other drawings as may from time to time be furnished or approved in writing by the Engineer.

k) '**Engineer's Representative**" shall mean an assistance of the Engineer notified in writing to the Contractor by the Engineer.

l) "**Provisional items**" shall mean items for which approximate quantities have been included in the tender documents.

m) The "**Site**" shall mean the lands and/or other places, on, under in or through which the work is to be executed under the contract including any other lands or places which may be allotted by Government or used for the purpose of contract.

n) The "**Work**" shall mean the works to be executed in accordance with the contract or part(s) thereof as the case may be and shall include all extra, additional, altered or substituted works as required for performance of the contract.

o) The "**Contract Sum**" shall mean the sum for which the tender is accepted.

p) The "**Accepting Authority**" shall mean the officer competent to accept the tender.

q) The "**Day**" shall mean a day of 24 hours from midnight to midnight irrespective of the number of hours worked in any day in that week.

r) "**Temporary works**" shall mean all temporary works of every kind required in or about the execution, completion or ,maintenance of the works.

s) "**Urgent works**" shall mean any measure which, in the opinion of the Engineer-in-charge, become necessary during the progress of the work to obviate any risk or accident or failure or which become necessary for security of the work or the persons working, thereon.

(t) The expression " **Latest Valid Certificate** " as used in the tender papers shall mean certificate valid as on 31/03/2025 or issued after 31/03/2025.

Where the context so required, words importing the singular only also include the plural and Vice-versa.

Heading and marginal notes, if any, to the general conditions shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof of the contract.

Wherever there is mention of "**Schedule of Rates**" of the Division or simply **S.S.R.** in this tender, it will be taken to mean as "The schedule of the rates of the division in whose jurisdiction the work lies".

4 ERRORS, OMISSIONS AND DISCREPANCIES:

a) In case of errors, omissions and/or disagreement between written and scaled dimensions on the drawings or between the drawings and specifications etc., the following order of preference shall apply.

i. Between actual scaled and written dimensions or description on a drawing the latter shall be adopted.

ii. Between the written or shown description or dimensions in the drawing and the corresponding one in the specification the latter shall apply.

iii. Between the quantities shown in the schedule of quantities and those arrived at from the drawing the latter shall be preferred.

iv. Between the written description or the item in the schedule of quantities and detailed description in the specifications of the same item, the latter shall be adopted.

b) In case of discrepancy between the rate percentage quoted rate in figures and words the lowest of the two will be consider for acceptance of the tender.

c) In all cases of omissions and / or doubts or discrepancies in the dimensions or description of any item of specifications a reference shall be made to the **Executive Engineer, Public Works Division, Ambajogai** whose elucidation, elaboration or decision shall be considered as authentic. The contractor shall be held responsible for any errors that may occur in the work through lack of such reference and precautions.

d) The special provision in detailed specifications and wording of any item shall gain precedence over corresponding contradictory provisions (if any) in the standard specification of Public Works Department Hand Book where reference to such specifications is given without reproducing the details in contract.

5 METHODOLOGY OF CONSTRUCTION & CONSTRUCTION EQUIPMENT :-

A) METHODOLOGY OF CONSTRUCTION :-

Contractor shall submit within the time stipulated by the Engineer in charge in writing the details of actual methods that would be adopted by the contractor for the execution, of any items as required by Engineer at each of the location, supported by necessary detailed drawings and sketches including those of the plant and machinery that would be used, their locations, arrangements for conveying and handling materials etc.

and obtain prior approval of the Engineer in charge well in advance of starting of such items of work. The Engineer in charge reserves the right to suggest modifications or make complete change in the method proposed by the contractor, whether accepted previously or not, at any stage of the work, to obtain the desired accuracy, quality and progress of the work which shall be binding on the contractor and no claims on account of such change in method of execution will be entertained by Government so long as specification of the item remains unaltered.

The sole responsibility for the safety and adequacy of the methods adopted by the contractor will however rest on the contractor irrespective of any approval of any given by the Engineer. In case of spillage from the approved work programme at any stage, the contractor shall furnish revised programme to make up the slippage within the stipulated time scheduled and obtain the approval of the Engineer to the revised programme.

b) The contractor shall be required to give a trial run of the Equipments for establishing their capacity to achieve the laid down specifications and tolerance to the satisfaction of the Engineer before commencement of the work. All equipments provided shall be proven efficiency and shall be operated and maintained at all times, in a manner acceptable to the Engineer and no equipment or personnel will be removed from site without permission of the Engineer.

c) PROGRESS SCHEDULE:

i) The contractor shall furnish within the period stipulated in writing by the Engineer-in charge, of the order to start the work, a progress schedule in quadruplicate indicating the date of actual start, the monthly progress expected to be achieved and the anticipated completion date of each major item of work to be done by him, also indicating dates of procurement and setting up of materials, plant and machinery. The schedule is to be such as is practicable of achievement towards the completion of the whole work in the time limit, the particular items, if any, on the due dates specified in the contract and shall have the approval of *the* Engineer-in-charge. No revised schedule shall be operative without such acceptance in writing. The Engineer is further empowered to ask for more detailed schedule or schedules say week by week for any item, in case of urgency of work as will be directed by him and the contractor shall supply the same as and when asked for.

ii) The contractor shall furnish sufficient plant, equipment and labour as may be necessary to maintain the progress schedule. The working and shift hours restricted to one shift a day for operations to be done under the Government supervision shall be such as may be approved by the Engineer-in-charge. They shall not be varied without the prior approval of the Engineer. Night work which requires supervision shall not be permitted except when specifically allowed by Engineer each time, if requested by the contractor. The Contractor shall provide necessary lighting arrangements etc. for night work as directed by Engineer without extra cost.

iii) Further, the contractor shall submit the progress report of work in prescribed forms and charts etc. at periodical intervals as may be specified by the Engineer-in-charge, schedule shall be in form of progress charts, forms, progress statement and/or reports as may be approved by the Engineer.

iv) The contractor shall maintain proforma, charts, details regarding machinery, equipment, labour, materials, personnel etc. as may be specified by the Engineer and submit periodical returns thereof as may be specified by the Engineer-in-charge.

6) AGENT AND WORK ORDER BOOK :

The contractor shall himself engage an authorised all time agent on the work capable of managing and guiding the work and understanding the specifications and contract conditions. A qualified and experienced Engineer shall be provided by the contractor as his agent for technical matters in case the Engineer-in-charge considers this as essential for the work and so directs the contractor. He will take orders as will be given by the Executive Engineer or his representative and shall be responsible for carrying them out. This agent shall not be changed without prior intimation to the Executive Engineer and his representative on the work site.

The Engineer-in-charge has the unquestionable right to ask for changes in the quality and strength of contractor's supervisory staff and to order removal from work of any of such staff. The contractor shall comply with such orders and effect replacements to the satisfaction of the Engineer-in-charge.

A work order book shall be maintained on site and it shall be the property of Government and the contractor shall promptly sign orders given there in by the Executive Engineer or his representative and his superior officers and comply with them.

The compliance shall be reported by the contractor to the Engineer in good time so that it can be checked. The Blank work order book with machine numbered pages will be provided by the Department free of charge for this purpose. The contractor will be allowed to copy out instructions therein from time to time.

7. SETTING OUT :-

(I) SETTING-OUT FOR BUILDING WORKS

The Engineer-In-Charge shall furnish the Contractor with only the four corners of the work site and a level bench marks and the contractor shall set-out the marks and shall provide an efficient staff for the purpose and shall be solely responsible for the accuracy of such setting-out.

The contractor shall provide, fix and be responsible for the maintenance of all stacks, templates, level marks, profiles and other similar things and shall take all necessary precautions to prevent their removal or disturbance and shall be responsible for the consequence of such removal or disturbance should the same take place and for their efficient and timely reinstatement. The contractor shall also be responsible for the maintenance of all existing survey marks, boundary marks, distance marks and centre line marks, either existing or supplied and fixed by the contractor. The work shall be set out to the satisfaction of the Engineer-In-Charge. The approval thereof or joining with the contractor by the Engineer-In-Charge in setting out the work, shall not relieve the contractor of any of the responsibilities.

Before beginning the work, the contractor shall at his own cost provide all necessary reference and level posts, pegs, bamboos, flags, ranging rods, strings and other materials for proper lay-out of the work in accordance with the scheme for bearing marks acceptable to the Engineer-In-Charge. The centre, longitudinal or face lines and cross lines shall be marked by means of small masonry pillars. Each pillar shall have distance mark at the centre to enable theodolite to be set over it. No work shall be started until all these points are checked and approved by the Engineer-In- Charge in writing but such approval shall not relieve the contractor of any of his responsibilities. the Contractor shall also provide all labour, material and other facilities as necessary for the proper checking of layout and inspection of the points during construction.

Pillars bearing geodetic marks located at the site of units of work under construction should be protected and fenced by the contractor.

On completion of works, the contractor must submit the geodetic documents according to which the work was carried out.

8 RESPONSIBILITIES FOR LEVEL AND ALIGNMENT. :-

The Contractor shall be entirely and exclusively responsible for the horizontal and vertical alignment, the levels and correctness of every part of the work and shall rectify effectively any errors or imperfections therein, such rectifications shall be carried out by the Contractor, at its own cost, when instructions are issued to that effect by the Engineer- in-charge.

9 LEVELLING INSTRUMENTS:

If measurements of items of the work are based on volumetric measurements calculated from levels taken before and after construction of the item, a large number of leveling staffs, tapes etc. will have to be kept available by the Contractor at the site of work for this purpose. Lack of such leveling staffs, tapes etc. in required numbers may cause delay in measurements and the work. The Contractor will have therefore to keep sufficient number of these readily available at site and in good working condition.

10. AUTHORITIES OF THE ENGINEER-IN-CHARGE'S REPRESENTATIVE:

The duties of the representative of the Engineer-in-charge are to watch and supervise the work and test and examine any material to be used or workmanship employed in connection with the works.

The Engineer-in-charge may from time to time, in writing delegate to this representative any of the powers and authorities vested in the Engineer-in-charge and shall furnish to the contractor copy of all such delegations or power and authorities. Any written instruction of approval given by the representative of the Engineer-in-charge to the contractor within the terms of such delegations (but not otherwise) shall bind the contractor and the department as though it had been given by the Engineer-in-charge, provided always as follows.

Failure of the representative of the Engineer-in-charge to disapprove any work or material shall not prejudice the power of the Engineer-in-charge thereafter to disapprove such work or materials so order the putting down removal or breaking up thereof.

11 CO-ORDINATION :

When several agencies for different sub-works of the project are to work simultaneously on the project site there must be full co-ordination and co-operation between different contractors to ensure timely completion of whole project smoothly. The scheduled dates for completion specified in each contract shall therefore be strictly adhered to Each contractor may make his independent arrangements for water, power, housing etc. if they so desire. On the other hand the contractors are at liberty to come to mutual agreement in this behalf and make joint arrangements with the approval of the Engineer. No contractor shall take or cause to be taken any steps or action that may cause, description, discontent or disturbance to work, labour or arrangement, etc. of other contractors in the project localities any action by any contractor which the Engineer, in his unquestioned discretion may consider as infringement of the above code would be considered as a breach of the contract conditions and shall dealt with as such.

In case of any dispute or disagreement between the contractors, the Engineer's decisions regarding the co-ordinations, Co-operation and facilities to be provided by any of the contractors shall be final and binding on the contractor concerned and such a decision or decisions shall not vitiate any contract nor absolve the contractor(s) of his/ their obligations under the contract not form the grounds for any claims or compensation.

12. ASSISTANCE IN PROCURING PRIORITIES, PERMITS ETC. :-

The Engineer, on a written request by the contractor, will if in his opinion, the request is reasonable and in the interest of work and its progress, assist the contractor in Securing, the priorities for deliveries,

transport permits for controlled materials etc., where such are needed. The Government, will not, however be responsible for the non-availability of such facilities or delay in this behalf and no claims on account of such failures or delays shall be allowed by the Government.

The Contractor shall have to make his own arrangement for machinery required for the work. Such machinery conveniently available with the Department may be spared as the rules in force on recovery of necessary Security Deposit and rent with Agreement in the prescribed Signature of Contractor form. Such an Agreement shall be independent of this contract and the supply of machinery shall not form a ground for any claim or extension of time limit for this work.

9) QUARRIES :-

9.1 The contractor(s) shall have to arrange himself / themselves to procure the quarry. However necessary assistance will be rendered by the Department for procuring the quarries if required by the Contractor.

9.2 The quarrying operations shall be carried out by the Contractor with proper equipment such as compressors. Jack-hammers, drill bits, explosives etc. and sufficient number of workmen shall be employed so as to get the required out turn.

9.3 The Contractor shall carry out the works in the quarries in conformity with all the rules and regulations already laid down or may be laid down from time to time by Government. Any cost incurred by Government due to non-compliance of any rules or regulations or due to damages by the contractor shall be the responsibility of the Contractor. The Engineer- in-charge or his representative shall be given full facilities by the Contractor for inspection at all times of the working of the quarry, records maintained, the stocks of the explosives and detonators etc. so as to enable him to check that the working records and storage are all in accordance with the relevant rule. The Engineer-in-charge or his representative shall at any time be allowed to inspect the works, buildings, and equipment at the quarters.

9.4 The Contractor shall maintain at its own cost, the book registers etc. required to be maintained under the relevant rules and regulations and as directed by the Engineering-charge. These books shall be open for inspection at all times by the Engineer-in charge or his representative and the Contractor shall furnish the copies or extracts of books or register as and when required.

9.5 All quarrying operations shall be carried out by the Contractor in organized and expeditious manner systematically and with proper planning. The Contractor shall engage licensed blaster and adopt electric blasting and/or any other approved method which would ensure complete safety to all the men engaged in the quarry and its surroundings. The Contractor shall himself provide suitable magazines and arrange to pre

and store explosive etc. as required under the rules at his own cost. The designs and the location of the magazine shall be got approved in advance from the Chief Inspector of Explosives and the rules and regulations in this connection as laid down by the Chief Inspector of Explosives from' time to time shall be strictly adhered to by the Contractor. It is generally experienced that it takes time to obtain the necessary license for blasting & license for storage of material from the concerned authorities. The contractor must therefore take timely advance action for procuring all such licenses so that the work progress may not be hampered.

9.6 The approaches to the quarrying place from the existing public roads shall have to be arranged by the Contractor at his own cost, and the approach shall be maintained by the contractor at his own cost till the work is over.

9.7 The quarrying operations shall be carried out by the Contractor to the entire satisfaction of the Engineer-in-charge and the development of the quarry shall be made efficiently so as to avoid wastage of stones. Only such stones as are of the required quality shall be used on the work. Any stone such is in the opinion of the Engineer-in-charge, not in accordance with the specifications or of required quality will be rejected at any time, at the quarry or at the site of work. The rejected stones shall not be used on the work and such rejected materials shall be removed to the place shown at the Contractor's cost.

9.8 Since all stones quarried from Government quarry (if made available) by the contractor including the excavated over burden are the property of the Govt. no stones or earth shall be supplied by the Contractor to any other agencies or works are allowed to be taken away for any other works. All such surplus quarried materials not required for work under this contract shall be the property of the Govt. And shall be handed over by the Contractor to Government free of cost at quarry site duly heaped at the spots indicated by the Engineer-in charge. The contractor will be entitled to the refund of default if any, paid by him for such quantity handed over to Govt. for which necessary certificate will be issued by Executive Engineer as per usual procedure, if however, the Government does not required such surplus material the contractor may be allowed to dispose off or such surplus material elsewhere with prior written permission of Engineer-in-charge. Leaving off a quarry face or opening of a new quarry face shall be done only on the approval of the Engineer-in-charge.

9.9 Quarrying permission will have to be directly obtained by the Contractor, from the Collector of the District concerned for which purpose the department will render necessary assistance. All quarry fees, royalty charges, octroi duties, ground rent for staking material etc. and charges shall be paid directly to Revenue Department by the contractor as per rules in force.

9.10 The contractor will be permitted to erect at his own risk and cost at the quarry site if suitable vacant space of Government area is available for the purpose, his own structures for stores, offices etc. At places approved by the Engineer- in-charge. On completion of the work the contractor shall remove all the structures erected by him and restore the site to its original condition.

9.11 The Contractor shall not use any Sand in the quarry either for cultivation or for any other purpose except that required for breaking or stacking or transporting stones.

9.12 The contractor shall will be responsible to make all payments of quarries fees, royalty etc. No claim on this account will be entertained.

9.13 The claims / representation on account of change of source of material or closing of quarries by the revenue or change in lead eccetra shall not be entertained. The contractor shall study the lead for material including sand carefully before quoting rates.

10) COLLECTION OF MATERIALS :-

i) Where suitable and approved P. W. Department's quarries exist, the Contractor or piece worker will be allowed if otherwise there is no objection to obtain the materials to the extent required for the work from the quarry. He will be however, liable to pay compensation, if any damage is caused to the quarry either deliberately or through negligence or for wastage of materials by himself or his staff or labour. The contractor shall pay necessary royalty in advance.

ii) Where no suitable P. W. Department's quarries exist or when the quality of the material required cannot be obtained from P. W. Department quarry the contractor or piece-worker shall make his own arrangement to obtain the material from existing or a new quarry in Government waste land, private land or land belonging to other States or Talukas, etc. After opening the quarry but before starting collection, the quarry shall be got approved by the Engineer-in-charge or his representatives. The Contractor or piece workers shall pay all royalty charges compensation etc. No claims or responsibility on account of any obstructions caused to execution of the work by difficulties arising out of private owners of land, will be entertained.

iii) The rates in the tender includes all incidental charges such as opening of new quarry, opening out a new portion in a existing quarry, removing top soil and the unsuitable material, dewatering a quarry, cost of blasting powder and fuse, lift, lead, repairs of existing cart tracks, making new cart tracks, control charges of Central/State Government or Municipal taxes.

iv) The rates in the tender are for the delivery of approved material on road side properly stacked at places specified by Engineer-in-charge and are

inclusive of conveyance charges in respect of the leads and lifts. No claim on account of the charges in lead will be entertained.

v) No material shall be removed from the land within road boundary or from the land touching it without the written permission of the Engineer-incharge or his authorized agent. If any material is unauthorisely obtained from such places, the contractor or piece worker shall have to make good the damages and pay such compensation, in addition as may be decided by the Executive Engineer and will have to stop further collection.

vi) Any material that falls on any P. W. D. road from the cart etc. during conveyance shall be immediately picked up and removed by the contractor or piece worker failing which it will be got removed departmentally at his cost. No heap shall be left prior to stacking even temporarily on the road surface or in any way so as to cause any obstruction or danger to the traffic. The contractor or the piece worker shall be liable to pay for any claims of compensation etc. arising out of accident etc. Any such material causing obstruction or danger etc. will be got removed departmentally at his cost and no claims for any loss or damage to the material, thus removed, will be entertained. The contractor shall also be responsible for the damage or accident etc. arising out of any material that falls on the road or track, not in charge of the Department & shall attend to any complaints which may be received.

vii) The material shall not be stacked in place where it is liable to be damaged or lost due to traffic passing over it, to be washed away by rains or flood, to be buried under the land slide etc. or to slip down on embankment or hill side etc. No claims for any loss due to these and similar causes will be entertained.

viii) Before stacking, the material shall be free from all earth, rubbish, vegetable matter, and other extraneous substance and in the case of metal, screened to gauge, if so directed. When ready, it shall be stacked entirely clear of the road way, on ground which has been cleaned of vegetation and leveled. On high banks, ghat roads etc. where it may not be practicable to stack it entirely clear of the road way, it may be stacked with the permission of the Engineer-in-charge on berms in such a way as to cause minimum danger and obstruction to the traffic or as may be directed by him.

ix) Unless otherwise directed, the materials shall be collected in the following order according to availability of space :-

(1) Rubble (if included in tender.)

(2) Metal,

(3) Soft Murum and

(4) Hard Murum :- Hard murum shall be stacked on the side opposite to that on which soft murum has been stacked. Similarly metal collected for

petty repairs shall be stacked on the side opposite to metal for new layer. Where metal for two layers has been stacked as in the case of new roads, the metal for each layer shall be stacked on opposite sides of the road.

No deduction will be made for voids.

11) SUPERVISION AND INSPECTION OF WORKS AND QUALITY CONTROL:-

11.1 SUPERVISION :-

The Contractor shall either himself supervise the execution of the works or shall appoint the competent agent approved by the Engineer-in-charge, to act on his behalf. If in the opinion of the Engineer-in-charge, the Contractor has himself no sufficient knowledge and experience of receiving instructions or cannot give his full attention to the works, the Contractor shall at his own expenses empty as his accredited agent & qualified Engineer approved by the Engineer-in-charge.

Orders given to the Contractor's agent shall be considered to have the force as if these had been given to the Contractor himself. If the Contractor fails to appoint a suitable agent as directed by the Engineer-in-charge, the Engineer-in-charge shall have full power to suspend the execution of the work until such date a suitable agent is appointed and the Contractor shall be responsible for the delay so caused to the works and the Contractor shall not be entitled for any compensation on this behalf.

11.2 INSPECTION:-

The Contractor shall inform the Engineer-in-charge in writing -when any portion of the work is ready for inspection giving him sufficient notice to enable him to inspect the same without affecting the further progress of the work. The work shall not be considered to have been completed in accordance with the terms of the contract until the Engineer-in-charge shall have certified in writing to that effect. Approval of materials or workmanship or approval of part of the work during the progress of execution shall not bind the Engineer-in-charge or in any way affect him even to reject the work which is alleged to be completed and to suspend the issue of his certificate of completion until such alteration and modifications or reconstruction have been effected at the cost of the Contractor as shall enable him to certify that the work has been completed to his satisfaction.

The Contractor shall provide at his cost necessary ladders and such arrangements as directed by Engineer-in-Charge to provide necessary facilities and assistance for proper inspection of all parts of the work at his own cost.

12) INITIAL MEASUREMENTS FOR RECORD:

Where for proper measurement of the work, it is necessary to have an initial set of levels or other measurements taken, the same as recorded in the authorized field book or measurement book of Government by the Engineer or his authorized representative will be signed by the contractor who will be entitled to have a true copy of the same made at his cost. Any failure on the part of the contractor to get such levels etc. Recorded before starting the work, will render him liable to accept the decision of the Engineer as to the basis of taking measurements. Like-wise the contractor will not cover any work which will render its subsequent measurements difficult or impossible without first getting the same jointly measured by himself; and the authorized representative of the Executive Engineer. The record of such measurements on the Government side will be signed by the Contractor and he will be entitled to have a true copy of the same made at his cost.

13) SAMPLES AND TESTING OF MATERIALS :-

i) All materials to be used on work, such as cement, lime, aggregates, stone, asphalt, wood etc. shall be got approved in advance from the Engineering-charge and shall pass the tests and or analysis required by him, which will be :-

a) As specified in the specifications of the items concerned and or

b) As specified by the Indian Road Congress Standard Specification and Code of Practice for Road and Bridges. OR

c) ISI specification (whichever and wherever applicable) or

d) Such recognized specifications accepted to Engineer-in-charge or equivalent hereto or in absence of such recognized specifications.

e) i) Such requirement test and or analysis as may be specified by the Engineer-in charge in order of precedence given above.

ii) The contractor shall at his risk and cost make all arrangement and/or shall provide for all such facilities as the Engineer-in-charge may require for collecting preparing required number of samples for tests or for analysis at such time and to such places may be directed by the Engineer and bear all charges and cost of testing. Such samples shall also be deposited with the Engineer-in-charge.

iii) The contractor shall if and when required submit at his cost the samples of materials to be tested or analysis and if, so directed shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and the materials, finally accepted by the Engineer- in-charge. Samples provided to the Engineer in charge for retention purpose are to be in labeled boxes suitable for storage.

iv) The contractor shall not be eligible for any claim or compensation at either arising out of any delay in the work or due to any corrective

measures required to be taken on account of and as a result of testing of the materials.

v) The contractor or his authorized representative will be allowed to remain present in the department laboratory while testing samples furnish by him. However the results of all the tests carried out in the department laboratory in the presence or absence of the contractor or his authorized representative will be binding on the contractor.

vi) The cost of routine day-to-day quality control testing charges for tests required as directed by Engineer-In-Charge as per specifications will be borne by the contractor by sending the same to the concerned Government laboratory.

vii) a) The contractor shall have at his own cost set up laboratory to carry out the routine tests of material which are to be used on the work. The tests will have to carried out either in his field laboratory or in approved laboratory in case the tests are carried out in field laboratory atleast 50 % testing should be carried out at the nearest Quality Control Laboratory of the Department.

b) Where, such field / site laboratory has been setup by the contractor the same shall be checked and got approved from Executive Engineer in charge of the work.

c) On work, where no such field / site laboratory is set up 100 % of testing of material which are to be used on the work will have to got tested from Vigilance and Quality control laboratory of department.

Special Condition :- The contractor shall adhere to the frequency of testing of the material which are to be used on the work as per the frequency chart appended as Annexure – B Page No. 117 and 117. Quality Control Test required for material are appended as Annexure – A Page No. 116. The number of test to be calculated on material which are to be used on the work indicated in the frequency chart (Annexure –B) are minimum required test. The Engineer-in-charge may ask for more number of tests as and when required.

viii) In case of materials procured by the contractor/testing as required by the codes and specifications, the same shall be arranged by him at his own cost. Testing shall be done in the presence of an authorized representative of the Engineer-in-charge at the nearest laboratory. If additional testing other than as required by specification is ordered the testing charges shall be borne by the department if the test results are satisfactory and by the contractor if the same are not satisfactory.

ix) In case of materials supplied by the Government, if the contractor demands certain testing, the charges thereof shall be paid by the contractor if the test results are satisfactory and by the department if the same are not satisfactory.

x) Testing shall be carried out at approved Government laboratories or Institutions as directed by Engineer-In-Charge and all the testing charges shall be born by the contractor.

xi) 15 % of the rate shall be withheld and shall be released only after the receipt of the satisfactory test results whenever specified excluding concrete items. " Routine test shall mean testing of aggregated for gradation, flakiness index, impact value and binder contents."

xii) Mix design of concrete items where specified shall be brought by the contractor at his own cost, from Government laboratory. Also testing of high tensile steel is to be done by the contractor at his own cost.

14) CHANGE OF CEMENT CONTENT ETC.

The tendered rates for any item involving the use of cement shall apply to the quantity of cement specified for the mix for that item in the specifications. If for any reasons except those required for compensating the deficiencies in the components, the cement content and properties are altered by the Engineer (Engineer-in-charge), at any time or from time to time, the tendered rates for that particular item and quantity or quantities, shall be duly enhanced or reduced only to account for the addition or reduction in cost of the cement content from that laid down in the specification at the rates specified in D.S.R. of the district on which the estimate is based plus 10 % to cover all other incidental charges whatever. Likewise if any additives, compounds, water proofing material etc. are ordered by the Engineer to be added to the mortar or concrete, no extra rate shall be payable for this change which shall be carried out as per directions of Engineer-in-charge, provided cost of such additives etc. is borne by Government or these are supplied free of cost to contractor at site by the Government.

15) CEMENT CONCRETE

(a) The contractor shall carry out all preliminary tests to work out grading and proportioning of aggregates in order to obtain and maintain uniform quality of work. The contractor shall supply all materials, labour and testing cost for preparing and testing samples as required by the Engineer. Unless otherwise specified in the detailed item wise specifications 3 cubes 150mmx150mm x 150 mm will be tested for every 15 cubic metre of ordinary grade concrete or per day whichever is higher.

The contractor shall make field arrangements for slump tests, density and bulkage testing and also prepare concrete cubes 150 mm x 150 mm x 150 mm for testing compressive strength, at his cost. The cubes shall be got tested at approved laboratory and the test results shall not fall below those prescribed in P.W.D. hand book (Table CV P. 412) or as laid down in the specifications. The cost of such cubes and tests shall be entirely borne by the contractor.

(b) All concrete shall be machine mixed, unless otherwise directed by Engineer-in-charge for controlled or high grade concrete, the grading of aggregate shall be got approved from the Engineer. The correct proportions and the total amount of water for the mix will be determined by means of preliminary tests and shall be got approved by the Engineer-in-charge, however, such approval does not relieve the contractor from his responsibility, regarding the minimum works strength requirements. Work test shall be taken in accordance with relevant codes and specifications.

The proportioning of aggregate shall be done by weight if so ordered by the Engineer.

(c) All mixing shall be done by mechanical means in approved mixers. The Engineer may at his discretion, allow in writing hand mixing of concrete for minor items where small quantities are involved but in that case the contractor shall increase the cement content of the mixture by 10% without any extra cost.

(d) The form work used shall be made invariably of steel/with lining of steel or with plywood lining wooden shutters may be allowed at the discretion of the Engineer i.e. Lintels, small slabs and beams, copping etc.

(e) The concrete shall be mechanically vibrated for proper compaction by the method approved by the Engineer.

(f) The concrete shall be cured only by a sweet potable water for full 21 days after the time of its placement or as may be directed by Engineer- in charge .

15.1 REINFORCED CONCRETE WORK :

(a) The work included in this contract shall be carried out in addition to this specifications detailed herein, in accordance with specifications and regulations as laid down in the following standard specifications. Standard specifications published by Government of Maharashtra 1985 Edition :

I.S. 8112 1989- Specifications for 43 grade ordinary Portland cement.

I.S. 1489 Part-I Specifications for Portland Pozzolona cement.

I.S. 15622 2006 - specifications for vitrified premium quality mirror or glossy finish decorative type tiles.

I.S. 383 1976 - specifications for coarse and fine aggregate from natural coarse for concrete.

I.S. 1786 2000 – Steel I.S. Code (High Strength Deformed Steel Bars and Twisted for concrete reinforcement specifications.

I.S. 432 1982 – Specification for Mild Steel and Medium Steel Bars

I.S.456 2000 - Code of practice for plain and reinforced concrete.

If the standard specifications quoted above fall short for the items quoted in these schedules of this contract reference shall be made to the latest British Standard of Specifications. If any of the items of contract do not fall in reference quoted above the decision and specification of the Engineer shall be final.

16) ADDITIONAL GENERAL SPECIFICATIONS FOR ORDINARY AND HIGH GRADE CONCRETE :-

The rate of consumption of cement for various grades of concrete referred below is a theoretical rate of consumption assumed for the estimate purpose. The contractor will have to obtain an economic mix design for various grades of concrete and get it approved from the Engineer-in-charge. The specification for controlled cement concrete shall be as per standard specification No. B-7 Page 38, and IS 456-2000. The minimum cement for plain and reinforcement concrete for various grade of concrete shall be as specified in IS 456-2000. Immediately upon the receipt of the award of the contract, the contractor shall inform the Engineer the exact location of the sources of the acceptable material. The concrete mix to be used shall be got designed in all approved laboratory, by the contractor with a optimum quantity of cement to give the specified strength in the preliminary tests and the proportion got approved by the engineer in writing. These proportions shall be used so long as the materials continue to be of the same quality and from the same sources subject only to slight changes in the relative quantities of fine and course aggregate for the purpose of promoting workability provided the work tests and shows the required strength.

Theoretical consumption of Cement for the Concrete work

Sr. No.	Volumetric mix of concrete	Consumption of cement in bags/Cum
1	C.C. 1:4:8	3.40 bags/Cum
2	C.C.M-10	4.42 bags/Cum
3	C.C.M-15	6.27 bags/Cum
4	C.C.M-20	7.60 bags/Cum
5	C.C.M-25	8.50 bags/Cum
6	C.C.M-30	9.00 bags/Cum
7	C.C.M-35	9.00 bags/Cum
8	C.C. M-40	9.00 bags/Cum

Note :- *The weight per bag of cement is considered as 50 Kg.*

If such preliminary tests involve change in cement consumption upto 2% on the higher or lower side, no adjustment in the cost of the item to be paid to the contractor shall be made. If such alterations, changes, theoretical consumption of cement by more than 2% on the higher or lower side, the sources and quality of aggregate remaining the same, payment will be adjusted for or against the contractor in whatever amount the total cost of cement to the contractor has been increased or decreased by more

than 2%. The amount of such increase or decrease shall be calculated on the basis of quantity of cement determined and prescribed in the special provisions. In adjusting the cost only the cost of cement shall be considered and not handling or other charges, which shall be treated as incidental to the terms. If during the progress of work the contractor wishes to change the material, the proportions shall be fixed on the basis of fresh preliminary tests to give the required strength after the Engineer is satisfied that the material satisfy the specifications. No adjustment of the cost shall be made for a change of proportions of cement fixed in the original preliminary tests.

The centering to be used for execution of any concrete items shall be strictly in accordance with specifications for formwork and steel centering. No centering shall be executed without prior approval to the centering from the Engineer-In-Charge.

17) MISCELLANEOUS :

1. Rate shall be inclusive of all taxes

2. For providing electric wiring or water lines etc. recessed shall be provided if necessary through walls, beams, slabs, etc. and later on refilled up with braces or stone, chipping, cement mortar without any extra cost.

3. In case it becomes necessary for the due fulfillment of contract for the contractor to occupy land outside the department limits, the contractor will have to make his own arrangements with the land owners and to pay such rents if any are payable as mutually agreed between them.

The department will afford the contractor all the reasonable assistance to enable him to obtain Government land for such purpose on usual terms and conditions as per rules of Government.

4. Special provision in detailed specifications or wording of any item shall gain precedence over the corresponding contradictory provision (if any) in the standard specifications or P.W.D. Hand book where reference to such specifications is given without reproducing the details in contract. Decision of the Engineer-in-charge shall be final in case of interpretation of specifications.

5. Suitable separating Barricades and enclosures as directed shall be provided to separate material brought by contractor and material issued by Government to contractor under schedule 'A' some applies for the material obtained from different sources of supply.

6. It is presumed that the Contractor has gone carefully through the Standard Specifications of P.W.D. Hand books (Vol I and II 1981 edition) and MOST specifications edition 1995 and the schedule of Rate of the Division and studied the site conditions before arriving at rates quoted by him.

7. The stacking and storage of construction material at site shall be in such a manner as to prevent deterioration or intrusion of foreign matter and to ensure the preservation of their quality, properties and fitness for the work. Suitable precautions shall be taken by the contractor to protect the material against atmospheric actions, fire and other hazards. The materials likely to be carried away by wind shall be stored in suitable stores or with suitable barricades and where there is likely hood of subsidence of soil, heavy materials shall be stored on paved platforms. The contractor shall at his own expenses, engage watchmen for guarding the materials and plant and machinery and the work during day and night against any pilferage or damage and also for prohibiting tress-passers.

8. The contractor shall be responsible for making good the damages done to the existing property during construction by his men.

9. If it found necessary from safety point of view to test any part of the structure, the test shall be carried out by the contractor with the help of the Department at his own cost.

10. The contractor shall provide, maintain, furnish and remove on completion, temporary shed for office on work site for the use of the Executive Engineer's representative.

11. Defective work is liable to be rejected at any stage. The contractor, on no account can refuse to rectify the defects merely on reasons that further work has been carried out. No extra payment shall be made for the rectification.

12. In case in the Schedule " B " the work has been divided into sections but notwithstanding this, every part of it shall be deemed supplementary to and complementary of every other part.

13. General directions or detailed description of work, materials and items coverage of rates given in the specifications are nor necessarily repeated in the Bill of Quantities/Itemwise Specifications. Reference is, however drawn to the appropriate section clause(s) of the General specifications in accordance with the work is to be carried out.

14. In the absence of specific directions to the contrary, the rates and prices inserted in the items are to be considered as the full inclusive rates and prices for the finished work described there-under and are to cover all labour, materials, wastage, temporary work, plant overhead charges and profits, as well as the general liabilities , obligations and risks arising out of the general conditions of contract.

15. The quantities set down against the item in the schedule "B" are only estimated quantities of each kind of work included in the contract and are

not to be taken as a guarantee that the quantities scheduled will be carried out or required or that will not be exceeded.

16. All measurements will be made in accordance with the methods indicated in the specification and read in the conjunction with the General Conditions of contract.

17. The details shown on drawings and all other information pertaining to the work shall be treated as indicative and provisional only and are liable to variation as found necessary while preparing working drawing which will be supplied by the Government during execution. The contractor shall not, on account of such variation be entitled to any increase over the ones quoted in the tender which are on quantity basis.

18. The recoveries if any from contractor will be effected as arrears of land revenue through the Collector of the District.

18) PROTECTION OF UNDERGROUND TELEPHONE CABLE AND AERIAL TELEPHONE WIRES AND POLES, TRANSMISSION TOWERS, ELECTRICAL CABLES, AND WATER SUPPLYING LINES.

During the execution of work, it is likely that the contractor may meet with telephone cable, electrical cables, water supply lines etc. It will therefore be the responsibility of the contractor to protect then carefully all such cases should be brought to the notice of the Engineer-in-charge by the contractor and also the concerned department, any damage what so ever done to these cables and pipe lines by the contractor shall be made good by him at his cost.

19) MEDICAL AND SANITARY ARRANGEMENT

Medical and Sanitary Arrangements to be provided for labour employed in the construction by the contractor.

(a) The contractor shall provide an adequate supply of potable water for he use of laborers on work and in camps.

(b) The contractor shall construct trench or semi permanent latrines for the use of laborers, separate latrines shall be provided for men and women.

(c) The contractor shall build sufficient number of huts on a suitable plot of land for the use of the laborers according to the following specifications.

(1) Huts of bamboos and grass may be constructed.

(2) A good site not liable to submergence shall be selected. High ground remote from jungle but well provided with trees, shall be chosen wherever it is available. The neighborhood of tank, jungle grass or woods should be particularly avoided. Camps should not established close to large cuttings of earth work.

(3) The line of huts shall have open spaces of at least 10 years between rows. When a good natural site can not procured, particular attention should be given to the drainage.

(4) There should be no over crowding. Floor space at the rate of 2.78 Sq. metre per head shall be provided. Care should be taken to see that the huts are kept clean and in good order.

(5) The contractor must find his own land and if he wants Governments land, he should apply for it. Assessment for it, if demanded will be payable by contractor. However the Department dose not bind itself for making available the required land.

(6) The contractor shall construct a sufficient number of bath places, washing places should also be provided for the purpose of washing cloths.

(7) The contractor shall make sufficient arrangements for draining away the surface and sullage water as well as water from the bathing and washing places and shall dispose off this waste water in such a way as not to cause any nuisance.

(d) The contractor shall engage a Medical Officer, with a traveling dispensary for a camp containing 500 or more persons, if there is no Govt. or other private dispensary situated within eight kilo metres from the camp. In cases of emergency, contractor shall arrange at his cost, for transport for quick medical help to his sick worker.

(e) The contractor shall provide the necessary staff for effecting a satisfactory drainage system and cleanliness of the camp to the satisfaction of the Engineer. At least one sweeper per 200 person should be engaged.

(f) The Assistant Director of Public Health shall be consulted before opening a labour camp and his instructions on matters such as water supply, sanitary conveniences, the camp site, accommodation and food supply shall be followed by the contractor.

(g) The Contractor shall make arrangements for anti-malerial measures to be provided for the labour employed on the work. The anti-malerial measures shall be provided as directed by the Assistant Director of Public Health.

(h) Where workers are required to work near machine and are liable to meet with accident they should not be allowed to wear loose cloth like Dhoti, Jhabba etc.

20) SAFETY MEASURES AND AMENITIES :

The contractor shall take all necessary precautions for the safety of the workers and preserving their health while working in such job as required special protection and precautions. The following are some of the requirement listed though not exhaustive. The contractor shall also comply

with the directions issued by the Engineer, in this behalf from time to time and at all times.

1) Providing protective foot-wear to workers in situations like mixing and placing of mortar or concrete, in quarries and places where the work is one under too much wet conditions as also for movements over surface infected with oyster growth etc.

2) Providing protective head wear to workers working in quarries etc. to protect them against accident or fall of material from above.

3) Taking such normal precautions like providing hand rails at the edges of the floating platforms or barrages not allowing nails or metal parts or useless timber to spread around etc.

4) Supporting workmen with proper belts, ropes etc. when working on any masts, cranes, grabs, hoist, draggers etc.

5) Taking necessary steps towards training the workers concerned on the use of machinery before they are allowed to handle it independently and taking all necessary precautions in and around the areas where machines hoists and similar units are working.

6) Providing life belts to all men working at such situations from where they may accidentally fall in to the water. Equipping the boats with adequate number of life belts etc.

7) Avoiding bare live wires etc. as would electrocutes, workers.

8) Making all plat-forms staging and temporary structures sufficiently strong and not to causing inconvenience and risk to the workmen and supervisory staff.

9) Provide sufficient first aid trained staff and equipment to be available quickly at the work site to render immediate first aid treatment in case of accidents due to suffocation's drowning and other injuries.

10) Take all necessary precautions with regard to use of divers.

11) Providing full length gum boots, leather hand gloves leather jacket with fire proof apron to cover the chest and back reaching upto knees and protective goggles for the eyes, to the labourer working with hot asphalt handling, vibrator in cement concrete and also where use of any or all these items is beneficial in the interest of health and well being of the laborers in the opinion of the Engineer.

12) Suitable scaffolds shall be provided for workmen for all works that can not safely be done from the ground or from solid construction except such short period work as can be done safely from ladders. When ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the

ladder is used for carrying the materials as well a suitable footholds and handfolds shall be provided on the ladder and ladder shall be given an inclination not steeper than 1:4 (1 horizontal and 4 vertical)

13) Scaffolding or staging more than 3.25 meters above the ground or floors, swing or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise assured at least one metre high above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

14) Working platform, gangway and stairways shall be so constructed that they do not sag unduly or are more than 3.25 meters above ground level or floor level. It shall be closely boarded, have adequate width and be suitable fenced as directed in 14 above.

15) Every opening in structure or in a working platform shall be provide with suitable protection to prevent fall of person or materials by providing suitable fencing or railing with minimum height of 1 meter.

16) Safe means of access shall be provided to all working platforms and working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 meters in length, width between side rails in hung ladder shall in no case may be less than 30 cms. for ladders upto and including 3 mtrs. in length. For longer ladders, this width shall be increased at least 6 mm. for each additional 30 cms. of length. Uniform step spacing shall not exceed 30 cms.

17) Adequate precautions shall be taken to prevent danger from electrical equipment. No material on any of the sites shall be stacked or placed as to cause danger or inconvenience to any person or the public. The contractor shall provide all necessary fencing and lights to protect public from accident and proceeding of law that may be brought by any person for injury sustained owing to neglect of the above precaution and to pay any damages and costs which may awarded in any such suit action or proceedings to any such person or which may with the consent of the contractor, to be paid to compromise any claim by any such person.

18) All necessary personal safety equipment as considered adequate by the Engineer-in-charge shall be available for use of person employed on the site and maintained in a condition suitable for immediate use and the contractor shall take adequate steps to ensure proper use of equipment by those concerned.

a) Workers employed on mixing asphaltic materials, cement or lime mortars concrete shall be provided with protective footwear and protective goggles.

b) Those engaged in handling any materials, which is injurious to eyes shall be provided with protective goggles.

c) Those engaged in welding works shall be provided with welder's protective eye-shields.

d) Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.

e) When workers are employed in sewer and manholes which are in use the contractor shall ensure that manhole covers are open and manholes are ventilated at least for an hour before workers are allowed to get into them. Manholes opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to public.

f) The contractor shall not employ men below the age of 18 and the women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, the following precautions shall be taken.

i) No paint containing lead or lead product shall be used except in the form of paste or ready made paint.

ii) Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or surface having lead paint, dry rubbed and scrapped.

iii) Overalls shall be supplied by the contractor to workmen and adequate facilities shall be provided to enable working painters to have wash during and on cessation of work.

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

Use of hoisting machines and shackle including their attachments, anchorage, supports shall confirm to the following :

a) i) These shall be good mechanical construction,round materials and adequate strength and free from patent defects and shall be kept in good working order.

ii) Every rope used in hoisting or lowering materials or as means of suspension shall be of durable quality and of adequate strength and free from patent defects.

b) Every crane or hoisting appliance operator shall be properly qualified and no person under the age of 21 years shall be in-charge of any hoisting machine including any scaffolding.

c) In case of every hoisting machine and of every chain, ring, hook, shackle and pulley block used in hoisting or lowering or means of suspension, safe working shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be clearly marked with safe working load.

In case of a hoisting machine having variable safe working load, each safe working load and the conditions used which it is applicable clearly indicated. No part of any machine or of any good referred above in this paragraph shall be loaded beyond safe working load except for the purpose of testing.

d) In case of Departmental machines safe working load shall be notified by the Engineer-in-charge. As regards contractor's machines contractor shall notify safe working load of each machine to the Engineer-in-charge wherever, he brings it to site of work and get it verified by Engineer-in-charge.

Motors, gearing transmission, electric wiring and other dangerous parts of hoisting appliances shall be provided with such means as will reduce the minimum risk to the accidental descent of load. Adequate precautions shall be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced, when workers are employed. On electrical installations which are already energised insulating wearing materials approved such as gloves, sleeves and coats as may be necessary, shall be provided. Worker shall not wear any rings, watches and carry keys and other material which are good conductor of electricity.

All scaffolds, ladder and safety devices mentioned or described herein shall be maintained in a safe condition and no scaffold ladder or equipment shall be altered or removed while it is in use. Adequate washing facility shall be provided at near place of work.

(e) These safety provisions shall be brought to the notice of all concerned by display on a notice board at prominent place at the work spot. Persons responsible for ensuring compliance with the safety code shall be named there in by the contractor.

i) To ensure the effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the contractor shall be open to inspection by the Engineer-in-charge or his representative and the inspecting officers.

ii) Failure to comply with the provisions hereunder shall make the contractor liable to pay to the Department as a penalty an amount not exceeding Rs. 50/- for each default and decision of the Engineer-in-charge shall be final and binding.

Not withstanding the above conditions the contractor is not exempted from the operation of any other Act or Rules in force.

21) EXCAVATION AND TRENCHING:

All trenched 1.5 metres or more in depth, shall at all times be supplied with at least one ladder for each 30 metres in length or fraction thereof. Ladder shall be extended from bottom of trench to at least 1 meter above surface of the ground, sides of a trench which is 1.5 meters or more in depth shall be stepped back to give suitable slope, or security held by timber bracing, so as to avoid the danger of side collapsing. Excavated materials shall not be placed within 1.3 metres of edge of trench or half of depth of trench whichever is more. Cutting shall be done from top to bottom under no circumstances shall undermining or undercutting be done.

22) DEMOLITION :

Before any demolition work is commenced and also during the process of the work.

a) All roads and open area adjacent to the work site shall be either be closed or suitably protected.

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

c) All practical steps, shall be taken to prevent danger to person employed, from risk of fire or explosion or hooding. No floor, roof or other part or a building shall be so over loaded with debris of materials as to render it unsafe.

23) SCOPE OF RATES FOR DIFFERENT ITEMS OF WORKS :

For item rate contracts, the contract unit rates for different items of work shall be payment in full for completing the work to the requirements of specifications including full compensation for all the operation detailed in the relevant sections of these specifications under "Rates". In the absence of any direction to the contrary, the rates are to be considered as the full inclusive rate for finished work covering all labours, material, wastage, temporary work, plant, equipment, overhead charges and profit as well as the general liabilities, obligations and risks arising out of the general conditions of contract.

The item rates quoted by the contractor shall, unless otherwise specified, also include compliance with supply of the following.

i) General works such as setting out, clearance of site before setting out and clearance of works after completion.

ii) A detailed programme for the construction and completion of the works (using CPM/PERT techniques) Giving, in addition to the construction activities detailed network activities for the submission and approval of materials, procurement of critical materials and equipment, fabrication of special products/ equipments and their installation and testing and for all activities of the employer that are

likely to effect the progress of work, etc. including updating of all such activities on the basis of the decisions taken at the periodic site review meeting or as directed by the Engineers.

iii) Samples of various materials proposed to be used on the work for conducting tests thereon required as per the provisions of the contract.

iv) Design of mixes as per the relevant clauses of the specifications giving proportions of ingredients, sources of aggregates and binder along with accompanying trial mixes as per the relevant clauses of these specifications to be submitted to the Engineer for his approval before use of the works.

v) Detailed design calculations and drawing for all Temporary works (such as formwork, staging, centering speciallsed constructional handling and launching equipment and the like):

vi) Detailed drawings for templates, support and end anchorage, details for prestressing, cable profiles, bar bending and cutting schedules for reinforcement, material lists for fabrication of structural steel etc.

vii) Mill test reports for all mild and high tensile steel and cast steel as per the relevant provision of the specifications;

viii) Testing of various finished items and materials including bitumen, cement, concrete, bearing as required under these specifications and furnishing test reports/certificates;

ix) Inspection Reports in respect of formwork, staging reinforcement and other items of work as the relevant specifications;

x) Any other data which may be required as per these specifications or the conditions of contract or any other annexures/schedules forming part of the contract.

xi) Any other item of work which is not specifically provided in the bill of quantities but which is necessary for complying with provisions of the contract.

and

xii) All temporary works, and false work.

Portion of road works beyond the limits and or any other work may be got constructed by the Employer directly through other agencies. Accordingly, other agencies employed by the employer may be working in the vicinity of the work being executed by the contractor. The contractor shall lease with such agencies and adjust his construction programme for the completion of work accordingly and no claim or compensation due to any reason whatsoever will be entertained on this account. The employer will be indemnified by the contractor for any claims from other agencies on this account.

xiii) All prevailing taxes levied by Government and as amended from time to time.

24) PRIORITIES OF WORKS TO BE EXECUTED:

Priorities for items to be executed shall be determined periodically keeping in view the final time limit allowed for the work and all the time schedule fixed for intermediate stages of work.

25) ELECTRIC POWER:
Arrangement for obtaining Electric Power connection will have to be made by the contractor at his own cost.

26) PRELIMINARY ARRANGEMENTS:
The contractor shall have to make at his own cost all preliminary arrangements for labour, water, electricity and materials etc. immediately after getting the work order. No claim for any extra payment or application for extension of time on the ground of any difficulty in connection with the above matter will be entertained.

The contractor shall at his own expenses, engage watchmen for guarding the materials and plant and machinery and the work during day and night against any pilferage or damages and also for prohibiting trespassers or damage to them. The contractor shall have to make his own arrangements for water required for any purposes on the work.

The contractor after completion of work shall have to clean the site of all debris and remove all unused materials other than those supplied by the Department and all plant and machinery, equipment, tools etc. Belonging to him within one month from the date of completion of work, or otherwise the same shall be removed by the Department at his cost and the contractor shall not be entitled for payment of any compensation for the same.

27) ACCIDENT:
In the event of an accident involving serious injuries or damages to human life or death of any of his employees and or labourers or trespassers, the same shall be reported within 24 hours of the occurrence to the Executive Engineer and the Commissioner of Workmen's Compensation.

28) PLANT:
All constructional plant, provided by the contractor shall when brought on the site be deemed to be exclusively intended for the construction of this work and the contractor shall not remove the same or any part thereof (say for the purpose of moving it from the part of the site to another or for repairs etc.) without the consent in writing of the Engineer-in-charge which shall not be unreasonably withheld.

29) PUBLIC UTILITIES :

Public Utility services like H.T. Lines telephones lines, etc. which are visible at site should be taken notice of by the contractors while planning their works. It shall be the contractor's responsibility to inspect such services prior to the commencement of any work.
While executing the works, the contractors should take care to see that these services are not disturbed or damaged during the execution.

The Government will not be held liable or responsible for any delay in completion of the job under this contract which may occur due to any damage occurred to such services in consequence of the contractor's operations of delayed completion of the execution for the same.

30) The contractor shall maintain defects in original work for a period as mentioned in Contract Data without any extra cost of Government irrespective of the designs, standards and specifications etc. 5% amount of the total work done shall be withheld from running account bills as maintenance charge for maintaining and keeping the work in good condition. This 5 % amount with held towards maintaining and keeping the work in good condition shall be allowed to be replaced with other recognized form of interest bearing Government Securities at intermediate stage. If so desired in writing. These maintenance charges shall be in addition to Security Deposit or Bank Guarantee of Scheduled Bank.

On completion of the work in all respects necessary certificate will be issued by the concerned Executive Engineer and the defects liability period will be counted from the date of issue of certificate.

During the defect liability period contractor is supposed to detect the defect or damages in the completed work. These defects and damages should be rectified within period specified in the notice of defect. If contractor fails to defects or carry out the repairs to such defects Engineer-in-charge will inform in writing about these defects and rectifications will be carried out at contractors risk and cost.

All damages during execution shall be made good by the contractor at his cost. He will be responsible for any damages to the road surface including B.T. surface in rainy seasons and during construction and guaranteed maintenance period no separate payment will be made restoring damages.

Defective work is liable to rejected at any stage. The contractor on no account can refuse to rectify the defects merely an reasons that further work has been carried out. No extra payment shall be made for such rectification.

In case of damages type failure will be investigated by Engineer-in-charge and repairs to the defective portion will be suggested accordingly. If contractor fails to rectify such damages within the period specified in the instructions of the Engineer-in-charge then heavy penalty will be imposed and damaged work will be rectified at contractors risk and cost.

30a) RELATION WITH PUBLIC AUTHORITIES :

The contractor shall comply with all rules, regulations, byelaws and directions given from time to time by any local or public authority in connection with this work and shall himself pay fees or charges which are leviable on him without any extra cost to the Department.

31) CLAUSES IN THE CONDITIONS OF CONTRACT

a] All materials and workmanship shall be of the respective type described in the Contract and in accordance with the Engineer's instructions and shall be subjected from time to time to such tests as the Engineer may direct at the place of manufacture or fabrication, or on the site. All samples shall be supplied by the Contractor.

b] No work is to be covered up or put out of view without the approval of the Engineer for his examination and measurements.

c] During the progress of the works, the Engineer shall have the power to order, the removal from the site any suitable material, substitution of proper and suitable material and the removal and proper re-errection not withstanding any previous test or interim payment, therefor, and of any work which in respect of materials or workmanship is not, in the opinion of the Engineer in accordance with the contract.

32) INSPECTION OF OPERATION

The Engineer and any person authorised by him shall at all times have access to the works and to all work shops and places (including required documents) where work is being prepared or from where materials, manufactured articles or machinery are being afford every facility for and every assistance in or in obtaining the right to such access.

33) CONTRACTOR'S FACILITY :

According to the contract, the contractor is responsible for the quality of the entire construction work. To meet this requirement

a) The contractor shall set up his own laboratory at location(s) approved by the Engineer. The laboratory shall be equipped with modern and efficient equipment with sufficient standbys, suitable to carry out the tests prescribed for different materials and work according to the specifications. The lost of equipment to be procured and the facilities to be provided shall be got approved by the

Engineer. The equipment shall be mentioned in a workable condition to the satisfaction of the Engineer.

b) Sampling and testing procedures shall be in accordance with the relevant standards of BIS (Previously called ISI) or IRC. Frequency of testing shall be laid down in the Ministry's Specifications for Roads and Bridges work (2nd Revision). In the absence of relevant Indian Standards, sampling and testing procedures shall be approved by the Engineer.

c) The laboratory should be manned by a qualified materials Engineer assisted by Material Inspector / Technicians, and the set up should be got approved by the Engineer.

d) The contractor should prepare printed proforma for recording readings and results of each type of test after getting the formats of the performance approved from the Engineer. He should keep a daily record of all the test conducted by him. Two copies of the test results should be submitted to the Engineer for his examination and approval, of which one copy will be returned to the contractor for being kept at site of work.

e) The materials Engineer of the Contractor should keep close liaison with the Quality control unit of the Engineer and keep the latter informed of the sampling and testing programme so that the Engineer's representative could be present during this activity, if considered necessary.

34) DAY TO DAY QUALITY CONTROL OPERATION

The day to day controls to be exercised by the Contractor and the Engineer enumerated in the below paragraphs.

35) ALIGNMENT AND LEVEL CONTROL

a The contractor should locate the center line of the building from the pegs, pillars or reference points fixed during the location survey and from the information furnished in the Contract drawings. Any discrepancy between the reference points on the ground and those on the drawings should immediately be brought to the notice of the Engineer for reconciliation.

b Based on the approved center line, the contractor should set up batter pegs {to delineate the limits of embankment / cutting and cleaning stacks (to determine limits of cleaning and grubbing)} and have these got checked and approved by the Engineer.

c The contractor should check the reduced levels of bench marks set up along the alignment. Any discrepancy in the reduced levels of those at site and as indicate in the drawings should immediately be brought to the notice of the Engineer for reconciliation. The contractor should re-establish those bench marks which are found

missing at site, and should establish additional bench marks as needed, for ensuring effective level control.

d The contractor shall be responsible for the true and proper setting out of the works in relation to original survey points, lines and levels of reference given by the Engineer in writing. If at any time during the progress of the works, any error shall appear or arise in the position levels dimensions or alignment of any part of the work, the contractor on being required to do so by the Engineer, shall at his own cost rectify the error to the satisfaction of the Engineer, unless such error is based on incorrect data supplied in writing by the Engineer.

e The Contractor shall carefully protect and prepare all bench marks, reference pillars and pegs used in setting out the works till final take over by the Engineer.

36) IN CASE OF CEMENT CONCRETE WORKS :

a Besides manufacturer's test certificate for quality of cement atleast one set of physical and chemical tests should be conducted for each source of supply for verification. Where the quality is in doubt, or where the cement had been stored for long periods or in improper condition, the Engineer shall call testing the cement at more frequent intervals without any extra cost to the Government.

b Mix design formula based on trials carried out in the contractor laboratory should be got approved by the Engineer.

c Mineral aggregates should be tested for their properties. Water to be used for mixing should be tested for chemical impurities.

d Checking for stability and sturdiness of form work.

e Ensuring that the crucial equipment lime mixers and vibrators are in working order before start of work.

f Control on water cement ratio.

g Control on workability and time elapsed between mixing and placing of concrete.

h Control on compaction and finishing.

i Test on cubes samples at 7 to 28 days.

j Checks on provisions for adequate curing.

36.1 In case of machinery work, control should be exercised on the quality of the materials (e.g. stone, brick, sand, cement etc.) as also on mortar proportion.

36.2 For R.C.C. Work, quality of steel in each batch may be approved on the basis of test certificate. The reinforcement layout should be checked for conformity with approved drawings and bar bending schedules. All laps should be checked for conformity with the specification. The reinforcement should be free from oil and loose rust scale should be properly tied with binding wire.

37. A)The Contractor shall set up and get it checked and certified by the Executive Engineer, a field laboratory with necessary equipments for testing of all materials, finished products used in the construction as per requirements of relevant specifications. The testing of all materials shall be carried out by the Engineer, or his representative for which the contractor shall make all the necessary arrangements and bear the entire cost.

LIST OF MINIMUM APPARATUS REQUIRED FOR BUILDING / ROAD WORKS

Sr No.	Name of Apparatus	Nos. (Minimum Required)
1	30 Metre and 50 Metre Tape (Steel)	2 Nos
2	Vernier calipers, screw gauge	1 No.
3	Cube moulds for concrete / cube moulds for cement mortar	6 Sets Each
4	Silt jar for sand silt testing	4 Sets
5	Balance 20 Kg. capacity – self indicating type with set of weights	1 No.
6	Electronic Balance 5 Kg. Capacity, accuracy 0.5 gm.	2 Nos
7	Water bath – electronically operated and thermostatically controlled with adjustable shelves, sensitivity 1 0C	1 No.
8	Thermometers ;Mercury-in-glass thermometer, range oo to 250 oC Mercury-in –steel thermometer with 30 cm stem range upto 300 oC	4 Nos.
9	Kerosene / Gas Stove or Electric Hot Plate	1 No.

10	Set of IS Seives with lid and pan 450 mm dia 63mm , 53 mm , 37.50 mm , 26.50 mm , 13.20 mm , 9.50 mm , 6.70 mm , 4.75 mm size 200 MM. diameter 2.36 mm , 2.0 mm , 1.18 mm , 600 micron , 425 micron, 300 micron , 150 micron and 75 micron	Set sets
11	Water testing kit	1 Set
12	Atterbergs limits (Liquid and plastic limits) determination apparatus	1 Set
13	Aggregate impact value test apparatus. Los Angles Abrasion test Apparatus	1 Set
14	Flakiness and elongation test gauges	1 Set
15	Vicat apparatus for testing setting times	1 Set
16	Slump testing apparatus	4 Sets
17	Compression and flexural strength testing machine 200 tonne capacity with additional dial for fexual testing	1 Set

37.B) At least 30% of the tests of those required as per frequency chart given in Clause shall be carried out in Government Laboratories of Vigilance & Quality Control Circle. All the tests which cannot be carried out in field laboratory shall be carried out 100% at the contractor's cost in Vigilance & Quality Control laboratory.

37.C) The tests which cannot be carried out both in field laboratory and Vigilance & Quality Control Circle's laboratories shall be carried out 100% in the laboratories of Government Engineering College / Government Polytechnic at the entire cost of Contractor.

Annexure "A"			
Quality Control Tests			
Sr. No.	Material	Test	
1	Metal	1	Crushing Value
		2	Impact Value
		3	Abrasion Value
		4	Water Absorption
2	Bricks	1	Crushing Value
		2	Water Absorption
3	Flooring Tiles	1	Flexural Strength
		2	Water Absorption
4	Glazed Tiles	1	Water Absorption
5	Cement	1	Compressive Strength
		2	Initial Setting Time
		3	Final Setting Time
		4	Specific Gravity
		5	Soundness
		6	Fineness
		7	Standard Consistency
6	Steel (TMT)	1	Weight per Metre
		2	Ultimate Tensile Stress
		3	Yield Stress
		4	Elongation
7	Wood Work (Shutters)	1	End Emersion Test
		2	Euite Test
		3	Glue Adhesion Test
8	Cement Concrete	1	Mix Design
9	Reinforcement Steel Bars	1	Tensile Strength
		2	% Elongation
10	Water Bound Macadam	1	Aggregate impact Value
		2	Flakiness index and Elongation Index

Signature of Contractor **No. of Corrections** **Executive Engineer**

Annexure "B"					
Quality Control Test and their Frequencies					
Sr. No.	Material	Test		Frequency of Testing	Remarks
1	Sand	1	Fineness Modules	At the beginning and if there is change in source	
		2	Silt Contents		
2	Metal	1	Crushing Value	One test per 200 Cubic Metre or part thereof	PWD Hand Book IS-56 Part – II
		2	Impact Value		
		3	Abrasion Value		
		4	Water Absorption		
		5	Flakiness Index		
		6	Slupping Value		
		7	Gradation		
3	Bricks	1	Crushing Strength	A set of 15 Bricks for each 50000 consignment or part thereof	IS – 1077
		2	Water Absorption		
4	Flooring Tiles	1	Flexural Strength	A set of 12 Tiles for each 2000 tiles or part thereof	IS-1237-1989
		2	Water Absorption		
5	Glazed Tiles	1	Water Absorption	A set of 16 Tiles for each 200 tiles or part thereof	IS-777
6	Cement Concrete	1	Compressive Strength	Upto 5 Cum- 1 Set	As per IS 456-2000
				6-15 Cum 2 Sets	
				16-30 Cum 3 Sets	
				31-50 Cum 4 Sets	
				51 and above 4 Sets + 1 additional set for each additional 50 Cum or part thereof	

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Material	Test		Frequency of Testing	Remarks
7	Masonry Stone	1	Compressive Strength	A set of 5 stone for each quarry and for doubtful Quality	
		2.	Specific gravity		
		3.	Water Absorption		
8	Interlocking Concrete Paving Blocks	1	Compressive Strength	1 set of 8 blocks for every 10000 blocks.	
		2	Water Absorption		
		3	Flexural Test		
		4	Resistance to wear		
9	Cement	1	Compressive Strength	One test of each consignment of 50 One Metric Tonne (1000 Bags) or part thereof	IS-269-12269
		2	Initial Setting Time		
		3	Final Setting Time		
		4	Specific Gravity		
		5	Soundness		
		6	Fineness		
10	Steel (TMT)	1	Weight Per Metre	One test for every 5.0 Metric Tonne or Part thereof of each diameter	IS-432
11	Granular Materials	1	Gradation	One test per 200 cum	MORTH Specification Table 900-3.
		2	Aterberg limits	One test per 200 cum	
		3	Moisture content prior to compaction	One test per 250 cum	
		4	Density of compacted layer		
		5	C.B.R.		

Sr. No.	Material	Test		Frequency of Testing	Remarks
12	Water Bound Macadam	1	Aggregate impact Value	One test per 200 cum	MORTH Specification Table 900-3.
		2	Gradation	One test per 100 cum	
		3	Flakiness index and Elongation Index	One test per 200 cum	
		4	Attenberg limits of binding materilas	One test per 20 cum for binding material	
		5	Attenberg limits of portion of aggregates passing 425 Micron	One test per 100 cum	

SPECIFICATIONS FOR FORMWORK AND STEEL CENTERING

I - FORMWORK:

1. Form Work:

Form work shall include all temporary forms of moulds required for forming the concrete which is cast-in-situ together with all temporary construction required for their support. Unless otherwise stated all forwork shall conform to I.S. Specifications.

2. Design of Formwork: Formwork including complete false work shall be designed by the Contractor in accordance with IS:2750,4041 and all other relevant I.S. Codes without any extra cost to the Employer and these shall be got approved from the Engineer before any formwork is taken up.

2.1 The contractor shall entirely be responsible for the adequacy and safety for false work not with standing any approval or review by the Engineer of his drawing and design. Proprietory system of formwork, if used a detailed information shall be furnished to the Engineer for approval.

3. Quality of shuttering:

The shuttering shall have smooth and even surface and its joints shall not permit leakage of cement slurry.

3.1 Ply-board shuttering material to be used for sides of beams and columns shall be marine or laminated plywood well seasoned free from projecting nails. Splits or other defets that may mark on the surface of concrete. It shall not be so dry as to absorb water from concrete and swell and bulge, or so green of wet as to shrink after erection. Mild steel plates or ply wood shall be used for slab and beam bottoms.

3.2 The timber shall be accurately sawn and planed on the sides and the surface coming in contact with concrete.

3.3 So far as practicable clamps shall be used to hold the forms together. Where use of nails is unavoidable minimum number of nails shall be used and these shall be left projecting so that they can be easily with drawn. Use of double headed nails shall be preferred.

4. TOLERANCE

4.1 The formwork shall be made so as to produce finished concrete true to shape, lines, levels, plumb and dimensions as shown on the drawings, subject to the following tolerance unless otherwise specified in these documents or drawings or as directed by the Engineer.

a] Section dimensions = 5 mm

b] Plumb = 1 in 1000 if height
c] Levels = 3 mm before any deflection has been taken place.

4.2 Tolerance given above are specified for local aberrations in the finished concrete surface and should not be taken as tolerance for the entire structure taken as a whole or for the setting and alignment of formwork, which should be as accurate as possible to the entire satisfaction of the Engineer. Errors of noticed in any lift/tilt of the structure after stripping of forms, shall be corrected in the subsequent work to bring back the surface of the structure to its true alignment.

5. Special Provisions:

Whenever the concreting of thinner members is required to be carried out within shutters of considerable depth, temporary openings in the sides of the shutters shall, if so directed by the Engineer be provided to facilitate the pouring and consolidation of the concrete. Small temporary openings shall be provided as necessary at the bottom of shutters of walls and deep beams to permit the explusion of rubbish etc.

6. Removal of formwork:

The formwork shall be so removed as not to cause damage to concrete. Centering shall be gradually and uniformly lowered in such a manner as to avoid any shock or vibration. Supports shall be removed in such a manner as to permit the concrete to take stress due to its own weight uniformly and gradually.

The whole of the formwork removal should be planned and definite scheme of operation worked out. Under no circumstance should forms be struck until the concrete reaches a strength of atleast twice the stress to which the concrete may be subjected at the time of striking but not before the period as mentioned in IS:456 1978 where ordinary portland cement is used.

II - STEEL CENTERING

1. Work Include:

Erecting steel centering with contractor's material comprising of standard steel adjustable props and standard steel trusses/ joists/ spans, centering plate for bottom of slab and steel plates for bottom of beams etc. of adequate strength properly balanced for obtaining adequate rigidity to withstand all loads coming on it including permanent and temporary fixtures and fastenings etc. complete for R.C.C. members like beams, slabs and canopy including its removal after the specified period stacking, making good the damaged parts/ its replacement before its next use with all leads and lift (all centering material shall be of contractor).

1.1 For R.C.C. beams, lintels, arches etc. formwork shall be of plywood of adequate thickness and grade only. The centering/ supporting arrangement such as standard steel trusses/ joists/ spans as standard adjustable/ fixed props. H type frames etc. shall be designed by the Contractor and got approved from the Engineer before commencement of its erection. The contractor with the prior approval of the Engineer shall use standard steel centering arrangements which may be manufactured by the reputed firm.

1.2 The supporting arrangement designed by the contractor shall be conform to the relevant I.S. code and Standard practice adopted in this type of work. The centering arrangement shall be adequately braced and properly secured by using appropriate type of fastenings and fixtures to ensure stability and rigidity of the centering to withstand all leads coming on it. The entire responsibility for design, erection, maintenance and safety etc. will exclusively rest with the contractor. The Engineer reserves right to call detailed design calculations of the entire centering or part thereof to verify its stability and also reserve right to reject entire centering arrangement or part thereof and any material used for the centering in the event of which the contractor shall have to arrange for its replacement at his own cost.

2) Item to include :-

2.1 The item shall include erection of centering with M. S. props, struts with all bracings, fastenings and fixtures, its removal after the specified period and its safe maintenance during the above period, Cost of safety precautions required to be taken for the workmen and Government property, stacking of material after removal at suitable place, replacement of damaged / worned out parts, cleaning etc. 2.2 The material used for centering shall be property of contractor and shall be allowed to be taken away after completion of work.

2.3 The centering, supporting arrangement should be designed by the contractor. He may make use of the standard centering arrangement made by standard manufacturer such as Acro Blue Bird. All the relevant codes etc. will be followed and appropriate centering may be suggested. The rate should all include temporary / permanent arrangement including temporary fastening and fixtures. The centering material should be of contractor and he should take away from the site of work after completion of work. Isolated lintels less than two metres in length, chhajja and plinth beam shall not be paid for centering under this item. The payment to the extent of completed R. C. C. work shall only be made irrespective of quantity of centering material procured by the contractor at the work site.

2. <u>Item to include:</u>

2.1 The item shall include erection of centering with M.S. props, struts with all bracing, fastening and fixtures, its removal after the specified period and its safe maintenance during the above period, cost of safety precautions required to be taken for the workmen and Govt. property, stacking of material after removal at suitable place, replacement of damaged / worned out parts, cleaning etc.

2.2 The material used for centering shall be property of contractor and shall be allowed to be taken away after completion of work.

2.3. The centering, supporting arrangement should be designed by the contractor. He make make use of the standard centering arrangement made by standard manufacturer such as Acro blue bird. All the relevant codes etc. will be followed and appropriate centering may be suggested. The rate should all include temporary/ permanent arrangement including temporary fastening and fixtures. The centering material should be of contractor and he should take away from the site of work after completion of work. Isolated lintels less than two metres in length chajja and plinth beam shall not be paid for centering under this item. The payment irrespective of quantity of centering material procured by the contractor at the work site.

GENERAL SPECIFICATIONS FOR WATERPROOFING

Rates for respective items shall include for the additional specifications:

1. The work of water proofing described in the following items shall be carried out by the contractor only through a renowned specialist waterproofing agency using cement waterproofing compounds, as approved in writing by the Executive Engineer.

2. The contractor shall give before actual execution, detailed specifications for each item of work of waterproofing to be executed according to the specifications of the specialist agency he proposes to employ, for approval. The work shall not be started unless approval in writing is given by the Engineer-in-charge to the said specifications.

3. The contractor shall give a guarantee bond on requisite stamp paper for a minimum period of 7 years for all the items of waterproofing done. During the guarantee period the contractor shall entirely be responsible to rectify any defect at his own cost to maintain the work in water proof condition. The waterproofing contractor shall also have to make good all the surroundings disturbed by him during the rectification work at his own cost. The form of written guarantee shall be on a legal stamped agreement acceptable to the Government. The Guarantee shall be given within one month from the date of completion of waterproofing treatment but any delay in furnishing the guarantee shall not relieve the contractor from the implication of this clause.

4. 25% (Twenty Five percent) of the cost of the waterproofing work executed shall be retained as "**Retention Money**" for a period of seven years covering the guarantee and the same shall be released only after satisfactory performance of the treatment during guarantee period of **7 years.**

5. The waterproofing agency shall provide and install at its own cost the following for its own use and remove the same after completion of the work:

i] Two pumps electrical/ diesel operated for watering and curing at any level in the building. Curing for all items shall be carried out for a minimum period of 14 days.

ii] Temporary Mild Steel water storage tanks.

iii] Temporary galvanised iron piping and fittings for water line.

iv] Flexible hose lenghts.

v] Cement godown, site office.

6. Injections to reinforced cement concrete slab, wherever required have to be undertaken by the contractor free of cost.

7. Before starting the waterproofing work, the surface receiving the treatment shall be cleaned properly.

8. The item of waterproofing as given in the Schedule "B" applied for work in any position and on any floor and at any height. The lift of material shall not form any criteria for extra payment.

9. For the reference of contractor, guideline specifications for waterproofing are attached herein with the General Specifications.

GENERAL GUIDELINES FOR WATERPROOFING WORK FOR REFERENCE OF CONTRACTOR

(NOTE: The contractor is required to give detailed specifications for each item of waterproof work.)

1. Roof Slab and Terrace :

Providing average 112 mm thick cement based waterproofing treatment with brick bat coba bedding by keeping the treatment minimum 75 mm thick at the rain water pipe point and keeping the gradient not flatter than 1 in 100.

a) Cleaning the surface to the requirements.

b) Giving a coat of wash mixed with cement.

c) Providing 12 mm thick cement mortar bed with admixture of waterproofing compund to form a bed for brick bats. Special care shall be taken at the junction of parapet and terrace slab to ensure gaps, if any, are properly sealed.

d) Placing brick bats of varying sizes (average 80 mm thick) to a proper slope and grouting their joints with chemical process in cement mortar with 2% with waterproofing compound.

e) Providing all around the terrace large waterproof wattas (roundings) upto a height of 30 cm. in P.C.C. or as directed above the finished level of waterproof treatment.

f) Finishing and curing for 14 days.

g) Carrying out the test. Payment for the item shall be released only after results of pond test are satisfactory.

2. Toilets :

a) Cleaning the surface to the Department's requirements.
b) Giving a coat of wash mixed with cement.
c) Providing 25 mm thick waterproof treatment to the bottom of toilet floors.
d) Providing 20 mm to 25 mm thick cement mortar water proof treatment to the walls of toilets upto the height of 1.00 metre above the finished floor level.

e) Providing waterproof wattas all around the toilets.

f) Grouting the mouths of inlets and outlets.

g) Filling sunk portion with brick bats including waterproof mortar and the top surface left rough to form a key for tiles.

OVERHEAD TANK :

The work under some items in **Schedule 'B'** of the tender pertains to construction of underground/ over head water tank. After completion of the work, water tank as a whole shall be tested for water tightness and leakages if any shall be rectified forthwith wihtout any extra cost to the Department.

GUARANTEE BOND FOR WATER PROOFING

(On Stamp Paper worth Rupees 100/-)

Name of Work: Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

Name of Agency :

Agreement No. :

The Contractor hereby declared that the water proofing work carried out under this contract shall be of the best quality and workmanship and shall be strictly in accordance with the specifications and particulars contained/ mentioned in the clause hereof and to the description and quality aforesaid for a period of seven years from the date of handing over the said work to the Department and notwithstanding the fact that the Department may have inspected and or approved the said work. If during the aforesaid period of seven years, the said work be discovered not to conform to the said description and quality aforesaid or have deteriorated (and the decision of the Engineer-in-charge in that behalf will be final and conclusive) the Department will be entitled to reject the said work or such portion thereof as may be discovered not to conform to the said description and quality. On such rejection, the work will be at the Contractor's risk and all the provisions herein contained relating to rejection of work etc. shall apply. The contractor shall, if so called upon have to make good the work etc. or such portion thereof, as is rejected by the Engineer-in-charge, otherwise the contractor shall pay to the Department, such damages, as may arise by the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Department in the behalf under this contract or otherwise. 25% (Twenty Five Percent) amount of executed amount of water proofing (in addition to this bond) will be recovered from running/ final bill as a retention money this amount will be refunded to a contractor after completion of defect liability period of seven years prescribed for water proofing item.

Date :

Place : Contractor

Signature of Contractor **No. of Corrections** **Executive Engineer**

GUARANTEE BOND FOR ANTITERMITE TREATMENT

Name of Work: Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

Name of Agency :

Agreement No. :

The Contractor hereby declared that the anti termite treatment work carried out under this contract shall be of the best quality and workmanship and shall be strictly in accordance with the specifications and particulars contained/ mentioned in the clause hereof and to the description and quality aforesaid for a period of Ten years from the date of handing over the said work to the Department and notwithstanding the fact that the Department may have inspected and or approved the said work. If during the aforesaid period of Ten years, the said work be discovered not to conform to the said description and quality aforesaid or have deteriorated (and the decision of the Engineer-in-charge in that behalf will be final and conclusive) the Department will be entitled to reject the said work or such portion thereof as may be discovered not to conform to the said description and quality. On such rejection, the work will be at the Contractor's risk and all the provisions herein contained relating to rejection of work etc. shall apply. The contractor shall, if so called upon have to make good the work etc. or such portion thereof, as is rejected by the Engineer-in-charge, otherwise the contractor shall pay to the Department, such damages, as may arise by the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Department in the behalf under this contract or otherwise.

Date :

Place : Contractor

Signature of Contractor **No. of Corrections** **Executive Engineer**

SECTION 6

FORM OF BID

FORM OF BID

Description of the Works: Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

To, : Executive Engineer,
Public Works Division, Ambajogai

Address : Executive Engineer,
Public Works Division, PWD Campus,
Ambajogai-431517
Phone No. (02446) 247760
Email id : ambejogai.ee@mahapwd.gov.in

1 We offer to execute the Works described above and remedy any defects therein in conformity with the conditions of Contract, specification, drawings, Bill of Quantities and Addenda for the sum(s) of (----------)

2 We undertake, if our Bid is accepted, to commence the Works as soon as is reason-ably 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.

3. 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.

4. 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.

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

6. We accept the appointment of Shri. ..... as the Dispute Review Expert.

Signature of Contractor **No. of Corrections** **Executive Engineer**

(OR)

We do not accept the appointment of Shri. ..... as the Dispute Review Expert and propose instead that Shri. ....be appointed as Dispute Review Expert, whose BIO-DATA is attached.

Dated this .....day of.....20.....

Signature_____in the capacity of ____duly authorised sign bids for and on behalf of _____

(in block capitals or typed)

Address

.....

.....

Witness

.....

.....

Address

.....

.....

Occupation

.....

**Note**-The bidder will submit this form online without his financial offer. The bidder shall fill the rates onlinein the BOQ sheet provided in the e-tender portal only

SECTION 7

BILL OF QUANTITIES

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 and prices 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 sofar as it is otherwise provided under the Contract, include all constructional plant, labour, supervision, materials, erection, ·maintenance, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. (Excluding G.S.T.)

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 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 pro-vided 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 re-peated 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. The method of measurement of completed work for payment shall be in accordance with the specification for Road and Bridge Works published by the Ministry of Surface Transport (edition).

9. Errors will be corrected by the Employer for any arithmetic errors pursuant to Clause 29 of the Instructions to Bidders.

10. Rock is defined as all materials which, in the opinion of the Engineer, require blasting' or the use of metal wedges and sledgehammers, or the use of compressed air drilling for its removal, and which cannot be extracted by ripping with a tractor of at least 150 kw with a single rear mounted heavy duty ripper.

Note: The bidder shall fill the rates online in the BOQ sheet provided in the e-tender portal only

Name of Work : Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

BILL OF QUANTITIES

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
	PART - A (WORK PORTION)					
	i) Civil Work					
1.00	Excavation for foundation in earth, soil of all types, sand, gravel and soft murum, including removing the excavated material up to a distance of 50 metre beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etcetera complete. (Lift upto 1.5 metre) By Mechanical Means	1664.03	One Cubic Metre			
2.00	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 Metre beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etcetera complete. (Lift upto 1.50 metre) By Mechanical Means	366.40	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
3.00	Excavation for foundation in Hard murum including removing the excavated material upto a distance of 50 Metre beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etcetera complete. (Lift from 1.5 to 3.0 metre.) By Mechanical Means	366.40	One Cubic Metre			
4.00	Excavation for foundation in Hard murum and boulders including removing the excavated material upto a distance of 50 Metre, beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etcetera complete. (Lift from 1.5 metre to 3.0 metre) By Mechanical Means	518.79	One Cubic Metre			
5.00	Filling in plinth and floors with approved excavated material in 15 centi metre. to 20 centi metre layers including watering and compacting etcetera complete.	1063.19	One Cubic Metre			
6.00	Filling in plinth and floors with contractors material/brought from outside and approved by Engineer incharge in layers of 15 centi metre to 20 centi metre including watering and compaction etcetera complete.	1261.58	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
7.00	Conveying materials obtained from road cutting including all lifts, laying in layers of 20 centi metre to 30 centi metre breaking clods, dressing to the required lines, curves, grades and section, watering and compacting to not less than 97% of standard Proctor density for a lead of over 50 metre to 300 metre inclusive from the site of excavation to the site of deposition as directed.	1433.69	One Cubic Metre			
8.00	Providing preconstructional antitermite treatment as per Indian Standard 6313 (Part-II) by treating the bottom surface and sides of excavation at the rate of 5 litres of emulsion concentrate of 1.0 percent of chlorophyrifos per square meter of surface area covering 10 years guarantee on bond paper.	3804.96	One Square Metre			
9.00	Providing preconstructional antitermite treatment as per Indian Standard 6313 (Part-II) treatment by treating the backfill in immediate contact with foundation at the rate of 5 litres of emulsion concentrate of 1.0 percent of clorophyrifos per square metre of vertical surface area covering 10 years guarantee on bond paper.	1915.12	One Square Metre			
10.00	Providing preconstructional antitermite treatment as per Indian Standard 6313 (Part-II) by treating the top surface of plinth filling at the rate of 5 litres of emulsion concentrate at 1.0 percent of clorophyrifos per square metre of surface area covering ten years guarantee on bond paper.	1398.47	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
11.00	Providing preconstructional antitermite treatment as per Indian Standard 6313 (Part-I) to the soil along the external face of building by punching holes of 1.2 of 1.5 Cement Mortor diametre about 30 -60 centi metre deep at 15 centi metre centre to centre as close to the wall as possible and to inject 0.5 percent of aldrin or clorophyrifos at the rate of 7.5 litres per hole and sealing the same with proper filling and covering 10 years guarantee on bond paper.	222.18	One Square Metre			
12.00	Providing soling using 80 mili metre size trap metal in 15 centi metre layer including filling voids with Crushed sand/grit, ramming, watering etcetera complete.	309.54	One Cubic Metre			
13.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-10 of trap/ granite/ quartzite/ gneiss metal for foundation and bedding including bailing out water, Steel centering, formwork, laying/ pumping, compacting, roughening them if special finish is to be provided, finishing if required and curing complete, with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	201.72	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
14.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-15 of trap/ granite/quartzite/gneiss metal for bed blocks, foundation blocks and such other items including bailing out water, Steel centering, formwork, laying/ pumping, compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etcetera complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etcetera (Wooden centering will not be allowed.), with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	128.65	One Cubic Metre			
15.00	Providing and laying Cast in situ/Ready Mix cement concrete M-15 of trap/ granite/quartzite/gneiss metal for coping to plinth or parapet, moulded or chamfered as per drawing or as directed including steel centering, plywood/ steel formwork compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etcetera complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etcetera (Wooden centering will not be allowed.) With fine aggregate (Crushed sand VSI Grade)					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
15.01	A] Ground/Parking Floor	1.76	One Cubic Metre			
15.02	E] Terrace Floor	5.67	One Cubic Metre			
16.00	Providing and laying in situ cement concrete M-30 with tremix treatment for 200 mili metre thickness for flooring with groove cutting of 4 mili metre wide and 20 mili metre deep with necessary refilling with bitumen etcetera complete.	611.75	One Square Metre			
17.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete work in foundations like raft, strip foundations, grillage and footings of Reinforced Cement Concrete columns and steel stanchions etcetera columns as per detailed designs and drawing or as directed including Steel centering formwork, cover blocks laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	412.47	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
18.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete columns as per detailed designs and drawing or as directed including steel centering, formwork,cover blocks, laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete,(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)					
18.01	A] Ground/Parking Floor	117.98	One Cubic Metre			
18.02	B] First Floor	72.90	One Cubic Metre			
18.03	C] Second Floor	72.90	One Cubic Metre			
18.04	D] Third Floor	100.84	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
19.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete beams and lintels as per detailed designs and drawings or as directed including steel centering, formwork, cover blocks, laying/ pumping, compactionand roughening the surface if special finish is to be provided and curing etcetera complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)					
19.01	A] Ground/Parking Floor	191.86	One Cubic Metre			
19.02	B] First Floor	124.89	One Cubic Metre			
19.03	C] Second Floor	124.89	One Cubic Metre			
19.04	D] Third Floor	134.79	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
20.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap/ granite / quartzite/ gneiss metal for Reinforced Cement Concrete slabs and landings as per detailed designs and drawings including steel centering, formwork, cover blocks, laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete,(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)					
20.01	A] Ground/Parking Floor	212.27	One Cubic Metre			
20.02	B] First Floor	208.97	One Cubic Metre			
20.03	C] Second Floor	208.97	One Cubic Metre			
20.04	D] Third Floor	234.97	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
21.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete chajja as per detailed design and drawings including steel centering, formwork, cover blocks, laying/ pumping, compacting and roughening the surface if special finish is to be provided and curing complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)					
21.01	A] Ground/Parking Floor	3.37	One Cubic Metre			
21.02	B] First Floor	4.09	One Cubic Metre			
21.03	C] Second Floor	4.09	One Cubic Metre			
21.04	D] Third Floor	4.09	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
22.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap / granite / quartzite / gneiss metal for Reinforced Cement Concrete canopy as per detailed designs and drawings including steel centering, formwork, laying/ pumping, compacting and roughening the surface if special finish is to be provided and curing etcetera complete (excluding reinforcement). with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	7.03	One Cubic Metre			
23.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-30 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete pardi of required thickness including steel centering, formwork, cover blocks, laying/ pumping, compacting and roughening them if special finish is to be provided and curing complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)					
23.01	A] Ground/Parking Floor	26.76	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
23.02	B] First Floor	17.02	One Cubic Metre			
23.03	C] Second Floor	17.02	One Cubic Metre			
23.04	D] Third Floor	29.30	One Cubic Metre			
24.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-30 of trap / quartzite /granite /gneiss metal for Reinforced Cement Concrete Waist slab, and steps of staircases as per detailed design and drawings or as directed including steel centering, plywood/ steel formwork, steel props, laying/ pumping, compaction, finishing uneven and honeycombed surface with Cement Mortor 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening the surface if special finish is to be provided and curing etcetera complete. (Excluding reinforcement, including cover block).(Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etcetera) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
24.01	A] Ground/Parking Floor	22.88	One Cubic Metre			
24.02	B] First Floor	22.88	One Cubic Metre			
24.03	C] Second Floor	22.88	One Cubic Metre			
24.04	D] Third Floor	22.88	One Cubic Metre			
25.00	Providing and fixing in position Thermo Mechanical Treated (TMT) - FE - 500 bar reinforcement of various diameters for Reinforced Cement Concrete pile caps, footings, foundations, slabs, beams columns, canopies, staircase, newels, chajjas, lintels pardis, copings, fins, arches etcetera as per detailed designs, drawings and schedules. including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required complete.					
25.01	A] Ground/Parking Floor	107.04	One Metric Tonne			
25.02	B] First Floor	56.51	One Metric Tonne			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
25.03	C] Second Floor	56.51	One Metric Tonne			
25.04	D] Third Floor	66.64	One Metric Tonne			
26.00	Providing and fabricating structural steel work in rolled sections like joists, channels, angles, tees etcetera as per detailed design and drawings or as directed including cutting, fabricating, hoisting, erecting, fixing in position making riveted / bolted /welded connections without connecting plates, braces etcetera and including one coat of anticorrosive paint and over it two coats of oil painting of approved quality and shade etcetera complete.					
26.01	D] Third Floor	0.26	One Metric Tonne			
27.00	Providing fly ash brick masonry with conventional / Indian Standard type fly ash bricks in Cement Mortor 1:6 in foundation and plinth including bailing out water manually striking joints, racking out joints watering and scaffolding etcetera complete.	58.74	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
28.00	Providing Autoclaved Aerated Concrete Block masonary of Ecolite or equivalent make conforming to IS:2185 (Part 3) - 1984 in extra fine jointing mortar of fixoblock of UltraTech or equivalent in superstructure including striking joints, raking out joints and scaffolding etcetera Complete. (The test shall be carried out conforming to IS:6441 (Part I) - 1972)					
28.01	A] Ground/Parking Floor	152.74	One Cubic Metre			
28.02	B] First Floor	266.79	One Cubic Metre			
28.03	C] Second Floor	266.79	One Cubic Metre			
28.04	D] Third Floor	366.31	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
29.00	Providing Autoclaved Aerated Concrete Block masonary of Ecolite or equivalent make conforming to IS:2185 (Part 3) - 1984 in extra fine jointing mortar of fixoblock of UltraTech or equivalent in Half brick thick wall including striking joints, raking out joints and scaffolding etcetera Complete. (The test shall be carried out conforming to IS:6441 (Part I) - 1972)					
29.01	A] Ground/Parking Floor	2.10	One Square Metre			
29.02	B] First Floor	3.36	One Square Metre			
29.03	C] Second Floor	3.36	One Square Metre			
29.04	D] Third Floor	3.36	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
30.00	Providing cement based water proofing treatment to terraces (Indian water proofing or alike) with brick bats laid in required slope to drain the water for any span after cleaning the base surface. Applying a coat of cement slurry admixed with approved water proofing compound and laying the brick bats on bottom layer in Cement Mortor1:5 admixed with approved water proofing compound filling up to half depth of brick bats, curing this layer for 3 days, applying cement slurry over this layer joints of brick bats with Cement Mortor1:3 admixed with approved water proofing compound and finally top finishing with average 20 mili metre. thick layers of same mortar added with jute fiber at 1 Kilogram per bag including finishing the surface smooth with cement slurry admixed with approved water proofing compound. Marking finished surface with false squares of 300 mili metre x 300 mili metre making the junctions at the parapet rounded and tapered top for required height, with drip mould at the junction of plaster and parapet and curing and covering 10 years Guarantee against leakproofness on Court fee stamp paper of Rs. 500/- including ponding test etcetera complete.					
30.01	A] Ground/Parking Floor	46.87	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
30.02	D] Third Floor	1552.33	One Square Metre			
31.00	Providing water proof bedding for flooring of Bath and Water Closet 25 mili metre thick in Cement Mortor 1:3 including using approved water proofing compound in specified proportion as per manufacturers specifications for per bag of cement including leveling, curing and covering 10 years guarantee on court fee stamp paper of Rs.500/- including ponding test etcetera complete.					
31.01	B] First Floor	40.56	One Square Metre			
31.02	C] Second Floor	40.56	One Square Metre			
31.03	D] Third Floor	40.56	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
32.00	Providing and applying two coats of High Albedo paint having minimum Solar Reflective Index (SRI) 108 (with solar reflectance & thermal emittance tested as per ASTM) C 1549 and ASTM C 1371 respectively, VOC less than 10 cc/gm. The coating thickness and the methodology of application shall strctly as per manufacturer's specifitions and as approved by engineer in charge. Surface preparation includes cleaning with metal wire brush to remove all dust, fungus etcetera washing with water all complete.The contractor shall give guarantee for the performance of SRI and also the durabitity of coating, all complete as per direction of Engineer - in- incharge.					
32.01	A] Ground/Parking Floor	46.87	One Square Metre			
32.02	D] Third Floor	1552.33	One Square Metre			

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
33.00	Providing and fixing 20 to 25 mili metre thick rough shahabad box type waterproofing for basement or underground floor on a base of Cement concrete 1:3:6, including sub base of 2.50 centimeter thick Cement mortar 1:3 with conceal, secrete (RMW), Algae proof or other alike waterproofing liquids, raking of joints upto 35 mili metre depth, filling the joints with 6 mili metre size crushed metal, hand grouting with cement slurry, curing and cleaning, with 7 years guarantee on court fee stamp of Rs. 100/- with ponding test etcetera complete. (excluding Cement concrete 1:3:6 base concrete)	96.78	One Square Metre			
34.00	Providing and fixing 20 to 25 mili metre thick rough shahabad box type waterproofing treatment to vertical outside faces of Reinforced Cement concrete walls of basement or underground floor including filling the gap of 25 mili metre between rough shahabad and Reinforced Cement Concrete walls with cement grout mixed with water proofing liquid Algae proof or other alike with one tile lift method, brushing the joints horizontally with cement slurry mixed with water proofing liquid for width 30 to 35 mili metre and sloping coping over topmost tile with cement mortar 1:3, butting the bottom most with Cement concrete 1:2:4 mixed with water proofing liquid, curing, with 7 years guarantee on court fee stamp of Rs.100/- with ponding test etcetera complete. (excluding Cement concrete 1:3:6 base concrete)	32.00	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
35.00	Providing and applying plaster / wall punning with plaster of paris (with plaster of paris material of Ambuja / Mor Chap or equivalent make) in 10 to 13 mili metre thickness to previously plastered surface / or on newly brick surface (Excluding rough cast plaster) in all position including preparing and Finishing the surface scaffolding etcetera complete.					
35.01	A] Ground/Parking Floor	1629.74	One Square Metre			
35.02	B] First Floor	2713.44	One Square Metre			
35.03	C] Second Floor	2713.44	One Square Metre			
35.04	D] Third Floor	3016.74	One Square Metre			
36.00	Providing internal cement plaster 12 mili metre thick in single coat in cement mortar 1:5 without neeru finish to concrete or brick surfaces, in all positions including scaffolding and curing etcetera complete.	400.31	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
37.00	Providing sand faced plaster externally in cement mortar using approved screened sand, in all positions including base coat of 15 mili metre thick in cement mortar 1:4 using waterproofing compound at 1 Kilogram per cement bag curing the same for not less than 2 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mili metre thick in cement mortar 1:4 finishing the surface by taking out grains and curing for fourteen days scaffolding etcetera complete.					
37.01	A] Ground/Parking Floor	1353.74	One Square Metre			
37.02	B] First Floor	838.29	One Square Metre			
37.03	C] Second Floor	838.29	One Square Metre			
37.04	D] Third Floor	1680.64	One Square Metre			
38.00	Providing and applying Texture plaster with finishing with texture material of approved make in 3 to 4 mili metre thickness on previously plastered surface, including Plaster Groove 6 mili metre thickness or Tape Grooves 35 to 45 mili metre thickness or as required, in all position including preparing the surface, scaffolding etcetera complete.					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
38.01	A] Ground/Parking Floor	43.64	One Square Metre			
38.02	B] First Floor	41.91	One Square Metre			
38.03	C] Second Floor	41.91	One Square Metre			
38.04	D] Third Floor	84.03	One Square Metre			
39.00	Providing and Fixing Processed Stone Cladding on wall surface/ plywood surface. RCC pardi/ Wall and all type of Interior, Exterior Compound wall and Gate etc. of cladding processed stone with material of Processed clay, Wooden chips, Silica sand, Cement, GFRC admixtures, Colour pigments, Fiber up to thick of 230 mm/ 25 mm including scaffolding, fixing of screw, etc. (As directed by Engineer in Charge)					
39.01	A] Ground/Parking Floor	8.73	One Square metre			
39.02	B] First Floor	8.38	One Square metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
39.03	C] Second Floor	8.38	One Square metre			
39.04	D] Third Floor	16.81	One Square metre			
40.00	Providing and fixing GRC/FRP decorative emblem with details as per drawing with the state emblem and carvings as shown in 3 dimesion upto a thickness of 150 mm with scroll designs, floral designs, dentals, flutings etc., Item to include checking all surfaces for proper line and level, scaffolding etc. complete. Item includes preparing upto 5 samples for the Architects approval. Item to include making of the clay model and mould for the decorative cornice and supply of the decorative cornice as per approved sample executed in fiber glass material					
40.01	A] Ground/Parking Floor	8.73	One Square metre			
40.02	B] First Floor	8.38	One Square metre			
40.03	C] Second Floor	8.38	One Square metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
40.04	D] Third Floor	16.81	One Square metre			
41.00	Providing and fixing GRC/FRP decorative cornice/architraves /mouldings and other details of various heights as mentioned below including grooves in wall, opening side vertical band, architraves, lintels etc. complete as per original detailing including scroll designs, floral designs, dentals, flutings etc., Item to include checking all surfaces for proper line and level, scaffolding etc. complete. Item includes preparing upto 5 samples for the Architects approval. Item to include making of the clay model and mould for the decorative cornice and supply of the decorative cornice as per approved sample executed in fiber glass material					
41.01	A] Ground/Parking Floor	8.73	One Square metre			
41.02	B] First Floor	8.38	One Square metre			
41.03	C] Second Floor	8.38	One Square metre			
41.04	D] Third Floor	16.81	One Square metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
42.00	Providing fine cement finish 1.5 mili metre thick over green plaster surface including scaffolding curing etcetera complete.	400.31	One Square Metre			
43.00	Providing patti/ band 75 mili metre wide on plastered surface 12 mili metre to 15 mili metre thick in Cement Mortor 1:3 line and level including neat finishing scaffolding curing etcetera complete.					
43.01	A] Ground/Parking Floor	150.00	One Running Metre			
43.02	B] First Floor	200.00	One Running Metre			
43.03	C] Second Floor	200.00	One Running Metre			
43.04	D] Third Floor	200.00	One Running Metre			
44.00	Providing patti/ band 100 mili metre wide on plastered surface 12 mili metre to 15 mili metre thick in Cement Mortor 1:3 line and level including neat finishing scaffolding curing etcetera complete.					
44.01	A] Ground/Parking Floor	150.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
44.02	B] First Floor	200.00	One Running Metre			
44.03	C] Second Floor	200.00	One Running Metre			
44.04	D] Third Floor	200.00	One Running Metre			
45.00	Providing patti/ band 150 mili metre wide on plastered surface 12 mili metre to 15 mili metre thick in Cement Mortor 1:3 line and level including neat finishing scaffolding curing etcetera complete.					
45.01	A] Ground/Parking Floor	150.00	One Running Metre			
45.02	B] First Floor	200.00	One Running Metre			
45.03	C] Second Floor	200.00	One Running Metre			
45.04	D] Third Floor	200.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
46.00	Providing and fixing chicken mesh of 22 gauge, with about 30 centi metre width at the junction of Reinforced Cement Concrete members and brick work, of approved quality including fixing mesh in position by necessary drilling in concrete /Burnt Brick Masonry and or tying by binding wire etcetera complete.					
46.01	A] Ground/Parking Floor	544.24	One Running Metre			
46.02	B] First Floor	544.24	One Running Metre			
46.03	C] Second Floor	544.24	One Running Metre			
46.04	D] Third Floor	565.54	One Running Metre			
47.00	Providing and applying Two coats of wall care Putty on plastered surface and Ceiling and Walls to prepare surface even and smooth of approved make, etcetera complete.					
47.01	A] Ground/Parking Floor	925.53	One Square Metre			
47.02	B] First Floor	136.07	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
47.03	C] Second Floor	136.07	One Square Metre			
47.04	D] Third Floor	161.57	One Square Metre			
48.00	Providing and fixing false ceiling with eco-friendly light-weight calcium silicate tiles of spintone surface texture aerolite make or equivalent of size 595 mili metre x 595 mili metre having 15 mili metre thick densified micro look edge and 100% humidity resistance incombustible as per BS 46part IV and thermal conductivity 0.043 w/m 0 KC and NRC 0.50 placed in true horizontal level suspended grid of size 600x600 mili metre made from hot dipped Galvanised Iron steel sections ion silhouette profile, rotary stitched double webbed white with 6 mili metre reveal profile (white/black), wherein, main T runner of size 42 mili metrex14 mili metre between main tee 600 mili metre center-tocenter and secondary cross T of size 33x14x0.43 mili metre thick of length 600 mili metre long spaced inter-locked at middle of the first crossed T in each panel to form grid of 1200 mili metrex600 mili metre resting on periphery wall Profile wall section 19 mili metre (7+7) x 19 mili metrex0.40thicknesses and laying false ceiling for services like diffusers grills including cutting, making opening for light					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
	fittings, fixtures,, smoke detectors etcetera, wherever required. Main T runners suspended from ceiling with using Galvanised Iron soffit cleats of size 25x35x1.6 mili metre of required length fixed to the ceiling with 6 mili metre diametre and 50 mili metre long dash fastener, 4 mili metre diametre Galvanised Iron adjustable rods with powder-coated/good quality Galvanised Iron level adjustment clips of 35x35x0.8mm spaced @1200, center-to-center along main T all complete at all heights as per the specifications, drawings and as per the directions of Engineer-in-charge.					
48.01	A] Ground/Parking Floor	534.62	One Square Metre			
48.02	B] First Floor	1050.82	One Square Metre			
48.03	C] Second Floor	1050.82	One Square Metre			
48.04	D] Third Floor	1076.39	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
49.00	Providing and fixing Modular false ceiling of 600 x 600 mili metre center to center and 13 mili metre thick square mineral fiber board to be fixed on frame work of alluminium sections for suspended false ceiling consisting of alluminium T 2"x1 ½" (50 mili metre x 40 mili metre) weighing 0.39 Kilogram/ metre at 60 centi metre center center and fixed with ½" x ½" (15 x 15 mili metre) flanges weighing 0.19 Kilogram/ metre suspended on 6 mili metre diametre mild steel rod weighing 0.22 Kilogram/ metre, fixed on wall and beams including rounding of the edges with alluinium T of 2" x 1 ½" (50 mili metre x 40 mili metre) weighing 0.39 Kilogram/ metre etcetera (all alluminium sections shall be anodized) including all labour, material, lifts etcetera complete.					
49.01	B] First Floor	42.55	One Square Metre			
49.02	C] Second Floor	42.55	One Square Metre			
49.03	D] Third Floor	42.55	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
50.00	Providing & Fixing in position, Acoustical Panelling made from 12 mili metre thick Agro wood strips of 50, 75 7 100 mili metre width on 50 x 50 mili Mild Steelal-wood frame of 600 x 600 c to c having supports from wall of required length, in front of 1000 gsm synthetic wool 50 mili metre thick with approved coloured fabric on strips side & chicken mesh on wall side, including cost of required Cut-Outs, decorative mouldings / finishing-items / Melamine Polish & Scaffolding, as per Architectural & Acoustical Design & Instructions & Complete in all aspects. including all materials labour,finishing etcetera complete					
50.01	B] First Floor	42.55	One Square Metre			
50.02	C] Second Floor	42.55	One Square Metre			
50.03	D] Third Floor	42.55	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
51.00	Providing & Fixing in position Acoustical Doors along with 150 x 150 mili metre teak wood frame, doors made from 50 mili metre Teak wood frame 600 x600 c to c filled with 1000 Gsm synthetic wool 50 mili metre thick and 3 mili metre Tecsound from both sides, 12 mili metre waterproof ply & veneer from both sides, including 150 mili metre heavy duty SS hinges (Geze / Dorma or eq.) 4 no each leaf, with Door-closer (Dorma / Geze or eq.) including cost of required Cut-Outs, decorative mouldings / finishing-items / melamine polish & Scaffolding as per Architectural & Acoustical Design & Instructions & Complete in all aspects .including all materials labour,finishing etcetera complete					
51.01	B] First Floor	4.20	One Square Metre			
51.02	C] Second Floor	4.20	One Square Metre			
51.03	D] Third Floor	4.20	One Square Metre			
52.00	Providing groove to required size at specified location as directed by Engineer, at junction of brick masonry wall and Reinforced Cement Concrete beams or Column, at junction of composite masonry, including scaffolding, finishing, curing etcetera complete.					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
52.01	A] Ground/Parking Floor	290.00	One Running Metre			
52.02	B] First Floor	200.00	One Running Metre			
52.03	C] Second Floor	200.00	One Running Metre			
52.04	D] Third Floor	200.00	One Running Metre			
53.00	Providing and laying vitrified rustic matt stone finish tiles having size 590 mili metre to 605 mili metre x 590 mili metre to 605 mili metre of 8 to 10 mili metre thickness and confirming to Indian Standard 15622-2006 (Group Bla) of approved make, shade and pattern for flooring in required position laid ?on a bed of 1:4 cement mortar including neat cement float, filling joints, curing and cleaning etcetera complete.					
53.01	A] Ground/Parking Floor	494.49	One Square Metre			
53.02	B] First Floor	872.30	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
53.03	C] Second Floor	872.30	One Square Metre			
53.04	D] Third Floor	904.22	One Square Metre			
54.00	Providing and laying Vitrified MATT finish having decorative type of size 1000 mili metre x 1000 mili metre of 8 to 10 mili metre thickness (on a existing flooring) with bonding chemical and Confirming to Indian Standard 15622-2006 (Group Bla) of approved make shade and pattern for flooring in required position laid on a bed of bonding chemical filling joints curing and cleaning etcetera complete.					
54.01	A] Ground/Parking Floor	164.83	One Square Metre			
54.02	B] First Floor	290.77	One Square Metre			
54.03	C] Second Floor	290.77	One Square Metre			
54.04	D] Third Floor	301.41	One Square Metre			

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
55.00	Providing and laying vitrified rustic matt stone finish tiles having size 590 mili metre to 605 mili metre x 590 mili metre to 605 mili metre to 8 to 10 mili metre thickness and confirming to Indian Standard 15622-2006 (Group Bla) of approved make, shade and pattern for dado & skirting in required position laid ?on a bed of 1:4 cement mortar including neat cement float, filling joints, curing and cleaning. etcetera complete.					
55.01	A] Ground/Parking Floor	41.49	One Square Metre			
55.02	B] First Floor	68.55	One Square Metre			
55.03	C] Second Floor	68.55	One Square Metre			
55.04	D] Third Floor	77.27	One Square Metre			
56.00	Providing and fixing heavy duty inter locking concrete Coloured paving blocks of 80 mili metre thickness of having a strength of 300 Kilogram/Square Centi Metre of approved quality and shape on a bed of crushed sand of 25 to 30 mili metre thick including skirting joints and cleaning etcetera complete	222.118	One Square Metre			

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
57.00	Providing and laying ceramic tiles having size 30 centi metre x 60 centi metre confirming to corresponding Indian Standard for dado and skirting in required position with readymade adhesive mortar of approved quality on plaster of 1:2 cement mortar including joint filling with white/ colour cement slurry cleaning curing etcetera complete.					
57.01	A] Ground/Parking Floor	118.55	One Square Metre			
57.02	B] First Floor	219.20	One Square Metre			
57.03	C] Second Floor	219.20	One Square Metre			
57.04	D] Third Floor	226.51	One Square Metre			
58.00	Providing and laying Antiskid Ceramic tiles of approved quality of size 30 centi metre x 30 centi metre and Confirming to Indian Standard 15622-2006 (Group-B IIA) for antiskid flooring in required position laid on a bed of 1:4 cement mortar including cement float, filling joint with cement slurry cleaning curing etcetera complete.					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
58.01	A] Ground/Parking Floor	30.85	One Square Metre			
58.02	B] First Floor	57.87	One Square Metre			
58.03	C] Second Floor	57.87	One Square Metre			
58.04	D] Third Floor	57.87	One Square Metre			
59.00	Providing and laying machine cut machine Polished Kota stone flooring 25 mili metre to 30 mili metre thick and required width in plain/ diamond pattern on bed of 1:6 Cement Mortor including cement float, filling joints with neat cement slurry, curing, polishing and cleaning etcetera complete.					
59.01	A] Ground/Parking Floor	84.09	One Square Metre			
59.02	B] First Floor	8.50	One Square Metre			
59.03	C] Second Floor	8.50	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
59.04	D] Third Floor	17.01	One Square Metre			
60.00	Providing Mirror polishing to Kota Stone including using all necessary stones and equipments cleaning, washing etcetera complete. For Flooring					
60.01	A] Ground/Parking Floor	84.09	One Square Metre			
60.02	B] First Floor	8.50	One Square Metre			
60.03	C] Second Floor	8.50	One Square Metre			
60.04	D] Third Floor	17.01	One Square Metre			
61.00	Providing and laying in position flooring of telephone black / Amba White / Cat bary brown / Ruby red / Ocean Brown granite stone of approved shade and size 18 mili metre to 20 mili metre thick on bed 1:6 cement mortar including cement floats striking joints, pointing in Cement Mortor 1:3 curing and cleaning etcetera complete.	12.46	One Square Metre			

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
62.00	Providing and fixing machine cut machine polished 18 mili metre to 20 mili metre thick telephone black / Amba White / Cat bary brown / RBI red / Ocean Brown granite stone for treads and risers of steps and staircases of approved colour and shade with full moulding and three grooved line for the treads on bed of 1:4 Cement mortar including float filling joints with neat cement slurry curing polishing and cleaning etcetera complete.					
62.01	A] Ground/Parking Floor	109.19	One Square Metre			
62.02	B] First Floor	85.40	One Square Metre			
62.03	C] Second Floor	85.40	One Square Metre			
62.04	D] Third Floor	85.40	One Square Metre			
63.00	Providing and laying telephone black / Amba White / Cadburybrown / Ruby red / Ocean Brown granite stone of 18 to 20 mili metre thick for door frame/ dado/ window boxing etcetera On Cement Mortor 1:6 including filling joints with polymer base filler nosing/moulding the sharp edges wherever necessary, curing, etcetera complete.					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
63.01	A] Ground/Parking Floor	88.76	One Square Metre			
63.02	B] First Floor	139.79	One Square Metre			
63.03	C] Second Floor	139.79	One Square Metre			
63.04	D] Third Floor	142.83	One Square Metre			
64.00	Providing and constructing granite kitchen platform with fixing of stainless steel sink 600 mili metre x 450 mili metre size as per detailed drawing including vertical both side polished kadappah stone 25 to 30 mili metre thick supports with kadappah top 35 to 40 mili metre thick and polished granite 16 to 20 mili metre top with side strips of granite at front and both sides of platform raised with two vertical granite supports 15 centi metre height and top granite of 75 x 40 centi metre including cutting, opening for sink of required size in kadappah as well as granite etcetera complete. (Platform top size 5.00 metre x 0.60 metre and height is 0.75 m)	4.18	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
65.00	Kitchen Trolley Providing and Fixing stainless steel kitchen trolley of overall 26 " height and 22" depth,supported on aluminium pipes ,trolley basket made out of 5 mili Mild Steeltainless steel rod fitted on telescopic channel of size 1.5 " x 20 " x 22 " on both sides of trolley of 12 " or above size, panel having 40 Kilogram load bearing capacity of trolley made out of 20 mili metrePUC coated plywood and colour combination as directed by E-I-C.Inner side of panel covered by white mica ,100 mili Mild Steels. decorative handle.(The width and height of individual compartments shall be kept as directed by Engineer-in-charge)	5.57	One Running metre			
66.00	Providing and applying priming coat on concrete/ masonary/ Asbestos Cement plastered surfaces including scaffolding if necessary, preparing the surface by thoroughly cleaning oil, grease, dirt and other foreign matter and sand papering as required etcetera complete.					
66.01	A] Ground/Parking Floor	898.27	One Square Metre			
66.02	B] First Floor	136.07	One Square Metre			
66.03	C] Second Floor	136.07	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
66.04	D] Third Floor	161.57	One Square Metre			
67.00	Providing and applying washable oil-bound distemper of approved colour and shade to old and new surfaces in two coats including scaffolding, preparing the surfaces. (excluding the primer coat.) etcetera complete.					
67.01	A] Ground/Parking Floor	898.27	One Square Metre			
67.02	B] First Floor	136.07	One Square Metre			
67.03	C] Second Floor	136.07	One Square Metre			
67.04	D] Third Floor	161.57	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
68.00	Providing and applying 2 coats of 100% Pure acrylic low VOC and APEO & HCHO free water based paint of approved colour that belongs to class 1 flame spread resistance of approved make Paint should provide durable and long lasting silk finish with a high crack tolerance of upto 1 mili metre Paint should have an oustanding washability with high resistance to wide range of bacteria and fungus. Paint has to be applied on smooth and uniform surface prepared by an acrylic copolymer low VOC & Odour putty. This surface should be primed with water based low VOC Primer. The work activity should cover all aspects of applying paints from surface preparation as directed by Engineer in charge.					
68.01	A] Ground/Parking Floor	1307.19	One Square Metre			
68.02	B] First Floor	2364.55	One Square Metre			
68.03	C] Second Floor	2364.55	One Square Metre			
68.04	D] Third Floor	2651.82	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
69.00	Providing and applying 2 Coats of 100% Pure acrylic water based paint with special heat reflectance property to withstand the harsh climate for period of atleast 10 years of approved make. Paint system should provide durable and long lasting finish with DFT of min 90 microns and should protect against concrete carbonation with R value of minimum 600 and equivalent concrete layer thickness value of min 150 centi metre Paint should have breathability property and should be able to cover hairline cracks in the surface upto 0.5 mili metre The paint has to be applied on a coat of high quality acrylic copolymer based alkali resistant primer with excellent penetrating properties including cleaning, with all leads and lifts at all levels etcetera complete, as directed by Engineer in charge.					
69.01	A] Ground/Parking Floor	798.09	One Square Metre			
69.02	B] First Floor	419.15	One Square Metre			
69.03	C] Second Floor	419.15	One Square Metre			
69.04	D] Third Floor	840.32	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
70.00	Providing and applying Dezzly texture paint of Hammer / Screetech on the external plastered surface of approved quality. As directed by Engineer in charge					
70.01	A] Ground/Parking Floor	218.21	One Square Metre			
70.02	B] First Floor	209.57	One Square Metre			
70.03	C] Second Floor	209.57	One Square Metre			
70.04	D] Third Floor	420.16	One Square Metre			
71.00	Providing and applying two coats Apex Ultima Puranature Anti-Pollution Or equivalent approved brand, paint should decomposes organic substances and inorganic gases(NOx, VOC's, CO, SOx, formaldehydes, etcetera) in presence of natural or artificial light. It contains Graphene and nanoparticles of titanium oxide. and Absorbs CO2 (4.8 Kilogram/15 l). plaster crack should be filled by Acrylic base Crack seal/Textured Crack filler, Paint has to applied on one coat of Apex Ultima Puranature Anti-Pollution Primer or Equivalent. Warranty Should be given by the Manufaturer The work should be done by the Manufacturer Recommended applicator and he should be able to furnish stage wise onsite technical reports from the concerned company technologist.					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
71.01	A] Ground/Parking Floor	218.21	One Square Metre			
71.02	B] First Floor	209.57	One Square Metre			
71.03	C] Second Floor	209.57	One Square Metre			
71.04	D] Third Floor	420.16	One Square Metre			
72.00	Providing and fixing frame with / without ventilator of size as specified with Country cut teak wood for doors and windows including chamfering, rounding, rebating, iron holdfast of size 300 mili metre x 40 mili metre x 5 mili metre with oil painting, etcetera complete	0.13	One Cubic metre			
73.00	Providing and fixing Country teak wood Four leaf paneled shutters, 35 mili metre thick style and rail and 25 mili metre thick panels without ventilator as per detailed drawing excluding the door frame, stainless steel fixtures and fastening and finishing the wood work with oil painting 3 coats complete	7.20	One Square Metre			

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
74.00	Providing and fixing 34 mili metre thick moulded door shutter consisting of solid core single leaf flush door of 30 mili metre thickness lipped with 15 mili metre(5 mili metre x 3) thick x 30 mili metre width on one style and top rail and 10 mili metre(5 mili metre x 2) thick x 30 mili metre width on other style and bottom rails. The inner panels laminated with 2 mili metre thick termite proof, water proof and fire resistant moulded Polyvenyle Chloride sheet with 2,4,6 design in different plain and /or prelim colours on one side after routing the moulded design on flush doors and 2 mili metreplain and /or pre lam Polyvenyle Chloride on other side using rubber adhesive on flush door and solvent cement adhesive on the Polyvenyle Chloride lipping etcetera as per direction of Engineer in charge and manufacturers specification and drawing etcetera complete.					
74.01	A] Ground/Parking Floor	34.60	One Square Metre			
74.02	B] First Floor	59.39	One Square Metre			
74.03	C] Second Floor	59.39	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
74.04	D] Third Floor	64.56	One Square Metre			
75.00	Providing and fixing in position powder coated aluminium louvered windows / ventilator of various sizes with powder coating as per detailed drawing and specifications including aluminium frames 80 x 38 mili metre x 1.22 mili metre box type, 5 mili metre thick sheet glass louvers, of approved quality etcetera complete.					
75.01	A] Ground/Parking Floor	2.16	One Square Metre			
75.02	B] First Floor	3.78	One Square Metre			
75.03	C] Second Floor	3.78	One Square Metre			
75.04	D] Third Floor	3.78	One Square Metre			

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
76.00	Providing and Fixing 30 mili metre thick BOTH SIDE PRELAMINATED SOLID PANEL Polyvenyle Chloride DOOR SHUTTER consisting of frame made out of Mild Steel tubes of 19 guage thickness and, size 19 x 19 mili metre for styles and 15 x15 mili metre for the top and bottom rails, Mild Steel frame shall have a coat of metel primer of approved make and manufacture. Mild Steel frame shall be covered with heat mouled Polyvenyle Chloride 'C' channel made from 5 mili metre(+/0.25) thick prelaminated sheet of density 600 Kilogram/cbm ,of size 30 mili metre thickness 70 mili metre width out of which 50 mili metre shall be flat and 20 mili metre shall be tapered in 45 angle on either side forming stiles ; and 5 mili metre thick ,95 mili metre wide Polyvenyle Chloride sheet out of which 75 mili metre shall be falt and 20 mili metre shall be tapered in 45 on the inner side to form top and bottom rail and 115 mili metre wide Polyvenyle Chloride sheet out of which 75 mili metre shall be falt and 20 mili metre shall be tapered on both sides to form lock rail.Top,bottom and lock rail shall be provided either side of the panel. An additional 5 mili metre(+/0.25) thick Polyvenyle Chloride strip of 20 mili metre width is to be stuck on the bottom side of the ' c ' channel prelaminated paneling of 5 mili metre(+/0.25) thick Polyvenyle Chloride sheet to be fitted inside the Mild Steel frame welded/					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
	sealed to the styles and rails with 5 mili metre(+/0.25) x 30 mili metrePolyvenyle Chloride sheet beading on either side and joined together with solvent cement adhesive etcetera ,10 mili metre thickness (5 mili metre(+/0.25) x 2 nos) 20 mili metre wide cross Polyvenyle Chloride sheet as gap insert for the rail and bottom rail. Door to be fixed to frames with 3 nos Mild Steelpowder coated but hinges of size 100 mili metre x 25 mili metre x 2 mili metre using 32 mili metre long steel screws drilled suitable to pass through both the walls of the Mild Steel tube. Other hardwares should be fixed with 19 x 6 mili metre size steel screws including fixture fasting. Complete as per direction of engineer in charge.					
76.01	A] Ground/Parking Floor	6.72	One Square Metre			
76.02	B] First Floor	15.12	One Square Metre			
76.03	C] Second Floor	15.12	One Square Metre			
76.04	D] Third Floor	15.12	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
77.00	Providing and fixing in position. (as per Indian Standard 1868 / 1982) Aluminium sliding window of two tracks with rectangular pipe having overall dimension 63.50 x 38.10 x 1.02 mili metre at weight 0.547 Kilogram/Running Metre and window frame bottom track section 61.85 x 31.75 x 1.20 mili metre at weight 0.695 Kilogram/Running Metre Top and side track section 61.85 x 31.75 x 1.30 mili metre at weight 0.659 Kilogram/Running Metre The shutter should be of bearing bottom 40 x 18 x 1.25 mili metre at weight 0.417 Kilogram/Running Metre Inter locking section 40 x 18 x 1.10 mili metre at weight 0.469 Kilogram/Running Metre And handle section 40 x 18 x 1.25 mili metre at weight 0.417 Kilogram/Running Metre and top section 40 x 18 x 1.25 mili metre at weight 0.417 Kilogram/Running Metre As per detailed drawings and as directed by Engineer in charge with all necessary Aluminium sections fixtures and fastenings such as roller bearing in nylon casting and self locking catch fitted in vertical section of shutter including 5 mili metre thick plain glass with all required screws and nuts etcetera complete. With powder coating with box					
77.01	A] Ground/Parking Floor	7.20	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
77.02	B] First Floor	14.40	One Square Metre			
77.03	C] Second Floor	14.40	One Square Metre			
77.04	D] Third Floor	14.40	One Square Metre			
78.00	Providing and fixing in position (as per 1868 / 1982) Aluminium sliding window of three tracks with rectangular pipe 95 x 38.10 x 0.90 mili metre at weight 0.637 Kilogram/Running Metre with window frame bottom track section 92 x 31.75 x 1.30 mili metre at weight 1.070 Kilogram/Running metre Top and side track section 92 x 31.75 x 1.30 mili metre at weight 0.933 Kilogram/Running Metre The shutter should be of bearing bottom 40 x 18 x 1.25 mili metre at weight 0.417 Kilogram/Running Metre Inter locking section 40 x 18 x 1.10 mili metre at weight 0.469 Kilogram/Running Metre and handle and top section 40 x 18 x 1.25 mili metre at weight o.417 Kilogram/Running Metre As per detailed drawings and as directed by Engineer-in-charge with all necessary Aluminium sections fixtures and fastenings such as roller bearing in nylon casting and self locking catch fitted in vertical section of shutter including 5 mili metre thick plain glass and aluminium mosquito net shutter with stainless steel jail with all required screws and nuts etcetera complete. With powder coating with box					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
78.01	A] Ground/Parking Floor	43.56	One Square Metre			
78.02	B] First Floor	80.28	One Square Metre			
78.03	C] Second Floor	80.28	One Square Metre			
78.04	D] Third Floor	80.28	One Square Metre			
79.00	Sliding Window- 3 Track (2 Glass shutter + 1 flymesh) of approved make with DGU, providing and fixing of Sliding Window- 3 Track (2 Glass shutter + 1 flymesh). For details refer to Specifications. As directed by Engineer in charge.					
79.01	A] Ground/Parking Floor	42.00	One Square Metre			
79.02	B] First Floor	42.00	One Square Metre			
79.03	C] Second Floor	42.00	One Square Metre			
79.04	D] Third Floor	42.00	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
80.00	Providing and fixing M-40 grade thick vibrated pull cast or similar type concrete frame with chamfer conforming to Indian Standard 6524-1983 having 6 mili metre diametre bars 3 Numbers And stirrups @250 mili metre centre to centre and fixing in wall with 6 Nos of hold fast of 12 mili metre diametre bars 500 mili metre long including primer and oil painting etcetera complete) frame size 60 mili metre x 100 mili metre					
80.01	E] Terrace Floor	15.30	One Running metre			
81.00	Providing and fixing collapsible steel gate in one / two leaves with hot rolled vertical channels of 18 x 9 x 3 mili metre minimum size, crossings of Mild Steel flats of size 18 x 5 mili Metre or E section for runner of minimum 40 x 6 mili metre size for flange, Mild Steel flat for top runner of minimum size 40 x 12 mili metre with roller wheels confirming to grade F.G. 150 fitted with snap headed rivets of minimum size 6 mili metre maximum spacing of vertical channels be 100 mili metre enclosed gate position and clear space of 150 mili metre between two sets of crossings with hold fasts, stoppers, spaces, handles, locking arrangement and one coat of red lead primer and oil painting etcetera complete. (Indian Standard 105211983).	7.20	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
82.00	Providing and fixing aluminium grill diamond mesh type DG202 of 7.5 mili metre thick including fixing in position anodised aluminium frame section of 80 x 38 mili metre x 1.22 mili metre size box, cutting to the required size with all wastage, labour, lead lift etcetera complete.					
82.01	A] Ground/Parking Floor	84.12	One Square Metre			
82.02	B] First Floor	136.68	One Square Metre			
82.03	C] Second Floor	136.68	One Square Metre			
82.04	D] Third Floor	136.68	One Square Metre			
83.00	Providing and Fixing mat finish stainless steel (of 302 grade) railing with top pipe of 50 mili metre diametre and vertical pipe of 38 mili metre diametre at 0.60 metre centre to centre or as required and horizontal pipes of 25 mili metre diametre in three rows, all pipes of 2 mili metre thick including buffing,fabricating fixtures and fastening including pipe base of appropriate diameter and ball base of 75 mili metre diametre above newel post of 75 mili metre diametre etcetera complete (Prior approval of sample and brand by Executive Engineer is necessary before use)					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
83.01	A] Ground/Parking Floor	44.38	One Running Metre			
83.02	B] First Floor	23.14	One Running Metre			
83.03	C] Second Floor	23.14	One Running Metre			
83.04	D] Third Floor	23.14	One Running Metre			
84.00	Providing and fixing C.P. 2 Way BIB cock with wall flange of approved make including necessary sockets/ union nut etcetera complete as directed by Engineer in charge.					
84.01	A] Ground/Parking Floor	2.00	One Number			
84.02	B] First Floor	3.00	One Number			
84.03	C] Second Floor	3.00	One Number			
84.04	D] Third Floor	3.00	One Number			
85.00	Providing and fixing 25 mili metre diameter water meter with non-return valve including strainer, sockets/ union nut and including water meter box making locking arrangement and lock. [Without chamber].	1.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
86.00	Providing and fixing 15 mili metre diametre screw down bib/ stop tap of brass including necessary socket union nut complete.					
86.01	A] Ground/Parking Floor	6.00	One Number			
86.02	B] First Floor	11.00	One Number			
86.03	C] Second Floor	11.00	One Number			
86.04	D] Third Floor	11.00	One Number			
87.00	Providing and fixing 20 mili metre diametre screw down bib/ stop tap of brass including necessary socket union nut complete.					
87.01	A] Ground/Parking Floor	2.00	One Number			
87.02	B] First Floor	3.00	One Number			
87.03	C] Second Floor	3.00	One Number			
87.04	D] Third Floor	3.00	One Number			
88.00	Providing and fixing screw down 15 mili metre diametre wheeled stop tap of brass including necessary sockets/union nut complete					
88.01	A] Ground/Parking Floor	6.00	One Number			
88.02	B] First Floor	11.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
88.03	C] Second Floor	11.00	One Number			
88.04	D] Third Floor	11.00	One Number			
89.00	Providing and fixing push cock (Self closing tap) symet type of 15 mili metre diametre including necessary socket, testing etcetera complete.					
89.01	A] Ground/Parking Floor	10.00	One Number			
89.02	B] First Floor	19.00	One Number			
89.03	C] Second Floor	19.00	One Number			
89.04	D] Third Floor	19.00	One Number			
90.00	Providing and fixing White glazed with bottle trap earthenware Wash Hand Basin of 63x45 centi metre size including cold water piller taps, brackets, rubber plugs and brass chain, stop tap, chromium plate bottle trap and necessary pipe connections including UPAC waste pipe and trap upto the outside face of the wall, making good the damaged surface, testing etcetera complete.					
90.01	A] Ground/Parking Floor	7.00	One Number			
90.02	B] First Floor	13.00	One Number			
90.03	C] Second Floor	13.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
90.04	D] Third Floor	13.00	One Number			
91.00	Providing and fixing Oval Type Under Counter Wash Hand Basin of 420 x 590 x 195 mili metre size with pillar cock, C.P.Angular stop cock, long thread of approved make continental including SS bottle trap of necessary pipe connection up to the outside face of the wall, having Telephonic Black / Colour Granite of 180 mili metre thick fixed on Black Kadappa Framework, etcetera Complete as directed by Engineer in charge.					
91.01	A] Ground/Parking Floor	1.00	One Number			
91.02	B] First Floor	2.00	One Number			
91.03	C] Second Floor	2.00	One Number			
91.04	D] Third Floor	2.00	One Number			
92.00	Providing and fixing 15 centi metre x 10 centi metre salt glazed stoneware gully trap in cement concrete 1:4:8 outside the building including cast iron grating in the sink, connecting glazed stoneware pipe, brick masonry chamber with cast iron lid and cast iron grating for the gully trap.					
92.01	A] Ground/Parking Floor	10.00	One Number			
92.02	B] First Floor	19.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
92.03	C] Second Floor	19.00	One Number			
92.04	D] Third Floor	19.00	One Number			
93.00	Providing and laying concrete pipes of Indian Standard NP. class of 150 mili metre diameter in proper line, level and slope including necessary collars, excavation, laying, fixing with collars in cement mortar 1:1 and refilling the trench complete.	100.00	One Running Metre			
94.00	Providing and laying concrete pipes of Indian Standard NP. class of 300 mili metre diameter in proper line, level and slope including necessary collars, excavation, laying, fixing with collars in cement mortar 1:1 and refilling the trench complete.	100.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
95.00	Providing, constructing and fixing 250 mili metre diametre Inspection chamber made up of Unplastisized Polyvenyle Chloride material of thickness 3.5 mili metre and height of 259 mili metre with inlet and outlet of 110 mili metre diametre with 75 mili metre diametre U Trap, Ultra shaft pipe of Unplastisized Polyvenyle Chloride material having height of 470 mili metre and fixing Ultra 250 mili metre diametre Unplastisized Polyvenyle Chloride cover and frame in 150 mili metre thick in Cement Concrete1:2:4, having crushed sand bed of 100 mili metre thick of size 550 mili metre diametre Including excavation and refilling the sides of chamber by crushed sand cushioning 150 mili metre thickness, connecting all required Unplastisized Polyvenyle Chloride fittings with rubber lubricant etcetera complete.	12.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
96.00	Providing, constructing and fixing 450 mili metre diametre Inspection chamber made up of Polypropylene / polyethylene material of thickness 3.5 mili metre and height of 388 mili metre with 160 or 200 mili metreain inlet (s) outlet and 110 and / or 160 mili metrebranch inlets, with 450 mili metre diametre Ultra shaft pipe of HDPE material having height of 460 mm, having Reinforced Cement Concrete cover and frame fixing in 150 mili metre thick in Cement Concrete1:2:4, having crushed sand bed of 150 mili metre thick of size 750 mili metre diametre Including excavation and refilling the sides of chamber by sand crushed cushioning 150 mili metre thickness, connecting all required Unplastisized Polyvenyle Chloride fittings with rubber lubricant etcetera complete.	8.00	One Number			
97.00	Providing and fixing 450 mili metre x 550 mili metre size superior type Belgium mirror with 16 mili metre diametre nickel plated towel rod etcetera complete.					
97.01	A] Ground/Parking Floor	10.00	One Number			
97.02	B] First Floor	18.00	One Number			
97.03	C] Second Floor	18.00	One Number			
97.04	D] Third Floor	18.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
98.00	Providing and fixing chromium plated towel rod 16 mili metre diametre and 75 centi metre in length including all accessories complete.					
98.01	A] Ground/Parking Floor	2.00	One Number			
98.02	B] First Floor	3.00	One Number			
98.03	C] Second Floor	3.00	One Number			
98.04	D] Third Floor	3.00	One Number			
99.00	Providing and fixing stainless steel sink of size 600 x 510 x 200 mili metre incluidng coupling, outlet pipe, elbow and other necessary fitting, finishing etcetera complete.	1.00	One Number			
100.00	Providing and fixing C.P. Angular stop clock with wall flange of approved make continental including necessary sockets/union nut etcetera complete.					
100.01	A] Ground/Parking Floor	2.00	One Number			
100.02	B] First Floor	3.00	One Number			
100.03	C] Second Floor	3.00	One Number			
100.04	D] Third Floor	3.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
101.00	Providing and fixing C.P. BIB cock with wall flange of approved make including necessary sockets/ union nut etcetera complete.					
101.01	A] Ground/Parking Floor	2.00	One Number			
101.02	B] First Floor	3.00	One Number			
101.03	C] Second Floor	3.00	One Number			
101.04	D] Third Floor	3.00	One Number			
102.00	Providing and fixing C.P. sink cock with raised J" shaped swinging casted spout ofapproved make including necessary sockets/ union nut etcetera complete."	1.00	One Number			
103.00	Providing and fixing 40 mili metre diametre Ball cock medium type with Polyvenyle Chloride float including sockets and necessary fittings and tested as per municipal requirements etcetera complete.					
103.01	D] Third Floor	5.00	One Number			
104.00	Providing and fixing 15 mili metre diametre Ball cock medium type with Polyvenyle Chloride float including sockets and necessary fittings and tested as per municipal requirement etcetera complete.					
104.01	D] Third Floor	5.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
105.00	Providing and fixing wall mixer with over head shower, shower arm, hand shower with wall bracket having flow rate upto 12 liters/minutes of Jaquar/Cera/Hindware/Perryware or equivalent make including all necessary pipes, fittings etc. complete as directed by Engineer In Charge. (Make shall conform to manufacturer's Green product and shall got approved from the Engineer In Charge.)					
105.01	A] Ground/Parking Floor	2.00	One Number			
105.02	B] First Floor	3.00	One Number			
105.03	C] Second Floor	3.00	One Number			
105.04	D] Third Floor	3.00	One Number			
106.00	Providing and fixing C.P. wall mixer with provision for overhead shower with 115 mili metre long bend pipe and wall flange of approved make including necessary sockets/union nut etcetera complete.					
106.01	A] Ground/Parking Floor	2.00	One Number			
106.02	B] First Floor	3.00	One Number			
106.03	C] Second Floor	3.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
106.04	D] Third Floor	3.00	One Number			
107.00	Providing and fixing Orissa Pan of size 580x445x260 mili metre with approved make flush valve including trap, Cast Iron soil and vent pipe upto outside face of wall including 100 mili metre diametre Cast Iron plug, bend and necessary pipe connection, etcetera complete. As directed by Engineer in charge.	1.00	One Number			
108.00	Providing and fixing white Opal series European type wall-hung, of size 400 mili metrex370mmx575 mili metre with approved make flush valve including soil pipe, vent pipe upto outside face of wall, 100 mili metre diametre Cast Iron plug bend inlet pipe all fittings, cutting & making good walls, floors etcetera as directed by Engineer in charge.					
108.01	A] Ground/Parking Floor	5.00	One Number			
108.02	B] First Floor	11.00	One Number			
108.03	C] Second Floor	11.00	One Number			
108.04	D] Third Floor	11.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
109.00	Providing and fixing white glazed earthenware lipped flat back/corner type Urinal with Polyvenyle Chloride 5 liters flushing cistern with fittings, inlet pipe with stop tap, brackets for fixing the cistern, 32 mili metre diametre Polyvenyle Chloride flush pipe with fitting including lead soil pipe, lead trap and soil pipe connection up to the outside face of wall.					
109.01	A] Ground/Parking Floor	4.00	One Number			
109.02	B] First Floor	8.00	One Number			
109.03	C] Second Floor	8.00	One Number			
109.04	D] Third Floor	8.00	One Number			
110.00	Providing and fixing 75 mili metre diametre stabiliser pipe/ Poly Venyle Chloride soil vent/waste pipe and with necessary fixtures and fitting such as bends, tees, single junctions, slotted vent, clamps etcetera complete					
110.01	A] Ground/Parking Floor	50.00	One Running Metre			
110.02	B] First Floor	100.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
110.03	C] Second Floor	100.00	One Running Metre			
110.04	D] Third Floor	100.00	One Running Metre			
111.00	Providing and fixing 100 mili metre diametre stabiliser pipe/ Poly Venyle Chloride soil vent/waste pipe and with necessary fixtures and fitting such as bends, tees, single junctions, slotted vent, clamps etcetera complete.					
111.01	A] Ground/Parking Floor	50.00	One Running Metre			
111.02	B] First Floor	100.00	One Running Metre			
111.03	C] Second Floor	100.00	One Running Metre			
111.04	D] Third Floor	100.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
112.00	Providing, laying and fixing ,jointing Eco- drain 110 mili metre SN 8 Nu- Drain Unplastisized Polyvenyle Chloride pipes or of equivalent make, manufacture as per EN 13476 or equivalent as per Indian Standard15328 with fittings such a bends, tees, coupler, etcetera jointing with rubber lubricant including necessary excavation, trench refilling with selective excavated material etcetera complete.	100.00	One Running Metre			
113.00	Providing, laying and fixing ,jointing Eco- drain 160 mili metre SN 4 Nu- Drain Unplastisized Polyvenyle Chloride pipes or of equivalent make, manufacture as per EN 13476 or equivalent as per Indian Standard15328 with fittings such a bends, tees, coupler, etcetera jointing with rubber lubricant including necessary excavation, trench refilling with selective excavated materialetcetera complete.	100.00	One Running Metre			
114.00	Providing and fixing H.D.P container Syntex or alike one piece moulded water tank made out of low density polythyler and built corrugation including of delivery up to destination hoisting and fixing of accessories such as inlet, outlet overflow of all tanks capacity above 1000 to 20,000 litres					
114.01	D] Third Floor	5000.00	One Litre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
115.00	Providing and fixing on walls/ ceiling/ floor 15 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.					
115.01	A] Ground/Parking Floor	50.00	One Running Metre			
115.02	B] First Floor	100.00	One Running Metre			
115.03	C] Second Floor	100.00	One Running Metre			
115.04	D] Third Floor	100.00	One Running Metre			
116.00	Providing and fixing on walls/ceiling/floor 20 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.					
116.01	A] Ground/Parking Floor	50.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
116.02	B] First Floor	100.00	One Running Metre			
116.03	C] Second Floor	100.00	One Running Metre			
116.04	D] Third Floor	100.00	One Running Metre			
117.00	Providing and fixing on walls/ ceiling/ floor 25 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.					
117.01	A] Ground/Parking Floor	40.00	One Running Metre			
117.02	B] First Floor	75.00	One Running Metre			
117.03	C] Second Floor	75.00	One Running Metre			
117.04	D] Third Floor	75.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
118.00	Providing and fixing on walls/ ceiling/ floor 32 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.					
118.01	A] Ground/Parking Floor	40.00	One Running Metre			
118.02	B] First Floor	75.00	One Running Metre			
118.03	C] Second Floor	75.00	One Running Metre			
118.04	D] Third Floor	75.00	One Running Metre			
119.00	Providing and fixing on walls /ceiling/ floor 40 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.					
119.01	A] Ground/Parking Floor	30.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
119.02	B] First Floor	50.00	One Running Metre			
119.03	C] Second Floor	50.00	One Running Metre			
119.04	D] Third Floor	50.00	One Running Metre			
120.00	Providing and fixing on walls/ ceiling/ floor 50 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete.					
120.01	A] Ground/Parking Floor	30.00	One Running Metre			
120.02	B] First Floor	50.00	One Running Metre			
120.03	C] Second Floor	50.00	One Running Metre			
120.04	D] Third Floor	50.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
121.00	Providing and fixing 15 centi metre rigid Polyvenyle Chloride Nahani trap including Polyvenyle Chloride grating ,bend,connectingpiece of Unplastisized Polyvenyle Chloride pipe up to the outside face of wall ,making the good damaged surface and testing etcetera complete (Prior approval of sample and brand by Ex. Engr. is necessary before use)					
121.01	A] Ground/Parking Floor	18.00	One Number			
121.02	B] First Floor	34.00	One Number			
121.03	C] Second Floor	34.00	One Number			
121.04	D] Third Floor	34.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
122.00	Providing and fixing Poly Venyle Chloride Rain water pipes of 160 mili metre outer diameter and having wall thickness of 2.2 to 2.7 mili metreconfirming to Indian Standard 13592-1992 including proper rainwater receiving recess with Poly Venyle Chloride plug, bend, necessary fittings, such as, offsets, shoes, inluding fixing the pipe on wall using approved wooden cleats projecting 25 mili metre to 40 mili metre from face of wall a fixing with clips of approved quality and number ,filing the joint using rubber gasket with solvent cement and properly resting the shoe of pipes on Cement Concrete or masonry blocks, including necessary scaffolding and maintenance for 3 yrs for any leakages or dislocations of pipes. All the Poly Venyle Chloride fittings and additional 2 piece socket clips shall be got approved from engineer in charge etcetera complete.					
122.01	A] Ground/Parking Floor	120.00	One Running Metre			
122.02	B] First Floor	120.00	One Running Metre			
122.03	C] Second Floor	120.00	One Running Metre			
122.04	D] Third Floor	120.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
123.00	Providing and laying in trenches 15 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	100.00	One Running Metre			
124.00	Providing and laying in trenches 20 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	100.00	One Running Metre			
125.00	Providing and laying in trenches 25 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	75.00	One Running Metre			
126.00	Providing and laying in trenches 32 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	75.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
127.00	Providing and laying in trenches 40 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	50.00	One Running Metre			
128.00	Providing and laying in trenches 50 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	50.00	One Running Metre			
129.00	Providing and fixing in position Unplastisized Polyvenyle Chloride ultra violet stabilized 110 mili metre outer diameter cowl dome confirming to Indian Standard-4985 including making joints with solvent cement etcetera complete					
129.01	D] Third Floor	11.00	One Number			
130.00	Providing and fixing Glass self 125 mili metre wide and 600 mili metre long with necessary chromium plated brackets providing Teak Wood gutties etcetera complete					
130.01	A] Ground/Parking Floor	2.00	One Number			
130.02	B] First Floor	3.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
130.03	C] Second Floor	3.00	One Number			
130.04	D] Third Floor	3.00	One Number			
131.00	Providing and fixing 90 centi metre x 60 centi metre Granite plate engraving 10 centi metre height letter, figures including painting the lefters/figures with approved colour and shade complete	1.00	One Number			
132.00	Providing & Supplying corrosion inhibiting admixture in concrete to protect steel bars for all concrete in every part Polyalk CP 293 of approved make & approved by Engineer in charge migrating, non-nitrite based corrosion inhibiting admixture shall be added at a dose of 3 Kilograms per Cubic Metre of concrete. The admixture should protect both cathodic and anodic sites and have been accredited by Indian Roads Congress, recommended for use by Ministry of Road Transport & Highways and should have a 4 year track record of use in both the Gulf Region and Indiametre Admixture should have evaluated test reports demonstrating a corrosion rate of zero coulombs after 9 test cycles as per ASTM G 109 when tested from a research institution NBA accredited Grade A and internationally ranked among top 5 research institutions in the world in Annual Survey conducted by Georgia Institute of	1237.41	One Kilogram			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
	Technology ranking of research institutions. PH of admixture should be alkaline in nature, specific gravity of 0.99 – 1.1, colour : brownish. The contractor must intimate the engineer in charge prior to addition in concrete for recording. If the admixture is put in the concrete mix at the batching plant, a written record of the amount of admixture used shall be supplied to the engineer. The engineer must ensure that the specified dosage of admixture is added in the concrete mix. (Material Cost Analysis only)					
133.00	Providing and fixing in position alluminium strips of size 50 mili metre x 3 mili metre for nosing the steps including fixing with screws and raval plugs, bending and cutting to the required shape and size, finishing with paint, necessary mortar bedding of 1:3 cement mortar to get exact line and level including watering and curing etcetera complete					
133.01	A] Ground/Parking Floor	144.00	One Running Metre			
133.02	B] First Floor	144.00	One Running Metre			
133.03	C] Second Floor	144.00	One Running Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
133.04	D] Third Floor	144.00	One Running Metre			
134.00	Providing and fixing lioghtening conductor system comprising of erecting Air-Termination consisting of tubular copper rod of 25 mili metre diametre 1.2 mili metre thick with multiple points head 1.2 Metric Tonne. long (Heavy Duty) welded or clamped to Galvanised Iron pipe pole B grade 50 mili metre diametre of requiired length with Mild Steel round bnase plate 25 centi metre diam and 10 mili metre thick at bottom embeded in cement concrete 1:3:6 dfoundation of size 45 centi metre diam x 45 centi metre Height and providing earthing with copper earth plate of size 60 x 60 x 0.3 centi metre with cadmium plated nut bolts to fix earthing strip burried in specially prepared earth pits 1.5 metre below ground level with 40 Kilogram charcoal and salt with altemate layers of charcoal and salt and Galvanised Iron pipe 40 mili metre diametre 2 meter length burried in earthe upto earthling plate remining portion above ground level for watering and refilling comcpete Note- Copper strip fropm lightening conductor is not considered in this item.	1.00	One Number			

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
135.00	Supply, fixing and installation of 4mm thick Aluminium Composite Panel (ACP) of approved colour for external cladding in combination of solid and metallic colours, including all necessary Framework, support and complete weather sealing as per architectural drawing. The Aluminium Composite Panel (ACP) should be made out of thermoplastic core of low-density polyethylene LDPE (100% virgin mix), sandwiched between two aluminium sheets of ALLOY GRADE- 5000 series, each not less than 0.50 mm thick, total thickness of aluminium composite panels not to be less than 4 mm, the exposed surface thereof shall have Stove lacquered finishing coat not less than (26 + - 2) micron (containing minimum 70% kynar 500 based PVDF) of colour and shade as per architectural design. The inside surface (facing the building exterior surface)shall have polyster based powder coating not less than 25 Micron with protective peel-off foil on the exterior face (peel off film will in no case leave any adhesive mark over the composite panel surface after it is peeled off). The supporting framework shall be made out of 50 mm X25mm X 3mm thick Aluminium section to be spaced horizontally and vertically for fixing of panel of size 900 mm X 1200 mm and fixed to the building structure as per design through 50mm X50mm X5 mm MS angle clamps prefixed to masonry or slab, columns with Hilti make anchor fastener screws. The fixing of panel to be done with the help of VHB tapes and screws and all the sealing of joints to be done with weather sealent Silicon as directed by Engineer-in-charge. (Prior permission of S.E. is necessary before inclusion of this item in estimate)	69.80	One Square metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
136.00	Providing soak pit of size 120 centi metre x 120 centi metre x 120 centi metre including excavating and filling with brick-bats.	2.00	One Number			
137.00	RWH - Shallow Percolation Pit providing, constructing 2.0m deep shallow depth percolation pit comprising of 1.0m dia pre-cast Reinforced Cement Concrete rings, 300 mili metre thick side filling around outside of Reinforced Cement Concrete rings (annular space) with 40 mili metre size boulders including filling of percolation pit up to 0.5m depth (from bottom up) with 25-75 mili metre clean washed gravels followed by 0.5m depth of 10-25 mili metre of clean washed stones followed by 0.5m of washed river fine aggregate (natural sand/crushed sand VSI grade finely washed etcetera) including netlon mesh between each gravel/fine aggregate (natural sand/crushed sand VSI grade finely washed etcetera) media layer including covering with Reinforced Cement Concrete slab, manhole frame & cover, Polyvenyle Chloride rungs etcetera including arrangement for inlet & outlet pipe, excavation & backfilling as shown in the drawing. The rate shall be inclusive of all labour, material, wastage, scaffolding, transportation, taxes, including all leads, lifts at all levels. All material should be of approved make. All works complete as per the drawing, technical specification and direction of the Engineer in charge	1.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
138.00	Providing and installing bio digester unit based on DRDO technology made of fibre reinforced plastic (FRP) having composition and following technical specifications and including necessary pipe and accessories up to 3 meter length, excluding the necessary excavation for installing the bio digester. Percentage of fibre glass (glass content in fibre glass should be minimum 30%): -33.33% Percentage of polyester resin: - 66.67% Water absorption (as per ASTM):-0.30% Flammability as per ASTM Tensile strength:-115 MPA Specific Gravity at 25 degree centigrade 1.45 Izod impact strength:-65KJ/M2 Heat defection/distort temperature:-65deg C Corrosion resistance (Non Corrosive) fitted with Inlet pipe size rigid Polyvenyle Chloride: -100 mili metre Outlet pipe size rigid Polyvenyle Chloride:-80 mili metre Gas outlet rigid Polyvenyle Chloride with Valve: 20 mili metre Bacteria immobilization Polyvenyle Chloride mattes (on all partition) With DRDO TOT licensee and latest batch certificate(month & year of supply) and capacity as below c) Up to 25 user size (1.50 metrex1.0mx1.0m), Capacity of biodgester:-1500 liters, Area of top, bottom and side walls:- 8 Square Metre, Area of partition walls: 2 Square Metre, Total weight of frp: - 82.80 Kilogram, Bacteria inoculums quantity: - 600 liters, Minimum thickness of side walls / top and bottom: 5 mili metre, Number of inside partitions: - 3, Minimum thickness of partition wall: 3 mili metre	1.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
139.00	Providing and installing bio digester unit based on DRDO technology made of fibre reinforced plastic (FRP) having composition and following technical specifications and including necessary pipe and accessories up to 3 meter length, excluding the necessary excavation for installing the bio digester. Percentage of fibre glass (glass content in fibre glass should be minimum 30%): -33.33% Percentage of polyester resin: - 66.67% Water absorption (as per ASTM):-0.30% Flammability as per ASTM Tensile strength:-115 MPA Specific Gravity at 25 degree centigrade 1.45 Izod impact strength:-65KJ/M2 Heat defection/distort temperature:-65deg C Corrosion resistance (Non Corrosive) fitted with Inlet pipe size rigid Polyvenyle Chloride: -100 mili metre Outlet pipe size rigid Polyvenyle Chloride:-80 mili metre Gas outlet rigid Polyvenyle Chloride with Valve: 20 mili metre Bacteria immobilization Polyvenyle Chloride mattes (on all partition) With DRDO TOT licensee and latest batch certificate(month & year of supply) and capacity as below d) Up to 40 user size (2.0mx1.0mx1.0m), Capacity of biodgester:-2000 liters, Area of top, bottom and side walls: - 10 Square Metre, Area of partition walls: 3 Square Metre, Total weight of frp: - 106.20 Kilogram, Bacteria inoculums quantity: - 600 liters, Minimum thickness of side walls / top and bottom: 5 mili metre, Number of inside partitions: - 3, Minimum thickness of partition wall: 3 mili metre	1.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
140.00	Providing and fixing board displaying information, such as 'Name of work, Tender cost, Name of Contractor, Work completion and liability period etcetera', having rectangular shape of 1.20 metre x 0.90 metre size made out 18 gauge (1.25 mili metre) thick mild steel sheet painted with one coat of Zinc chromate stoving primer and two coats of enamel paint on front side and grey stove enamel on back side and border / messages / symbols etcetera with approved colour shade paint complete, on Mild Steelangle of size 35 x 35 x 3 mili metre frame with properly cross braced Mild Steel angles of size 35 mili metrex35 mili metrex3 mili metre duly painted including Two Mild Steel angle iron posts of size 65 mili metre x 65 mili metre x 6 mili metre, 3.65 meter long painted with alternate black and white bands of 25 Centi Metre width including all fixtures etceteraand fixing the boards in 1:4:8 concrete block of size 60 Centi Metre x 60 Centi Metre x 75 Centi Metre including, excavation, refilling, transportation, and labour etcetera complete.	1.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
141.00	Providing and laying in situ /Ready Mix cement concrete M-20 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete work in foundations like raft, strip foundations, grillage and footings of Reinforced Cement Concrete columns and steel stanchions etcetera including bailing out water, Steel centering formwork, laying/ pumping cover blocks, compaction and curing roughening the surface if special finish is to be provided (Excluding reinforcement and structural steel) etcetera complete, with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	42.18	One Cubic Metre			
142.00	Providing and laying Cast in situ/Ready Mix cement concrete M-20 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete columns as per detailed designs and drawing or as directed including steel centering, formwork, cover blocks, laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete,(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	8.50	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
143.00	Providing and laying Cast in situ/Ready Mix cement concrete M-20 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete beams and lintels as per detailed designs and drawings or as directed including steel centering, formwork, cover blocks, laying/ pumping, compactionand roughening the surface if special finish is to be provided and curing etcetera complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	6.35	One Cubic Metre			
144.00	Providing fly ash brick masonry with conventional/ Indian Standard type bricks in cement mortar 1:6 in superstructure including striking joints, raking out joints, watering and scaffolding etcetera Complete	33.36	One Cubic Metre			
145.00	Providing and fixing 50 mili metre diametre medium class Galvanised Ironpipe gate with wicket gate of approved drawing with all fixtures and fittings in two leaves with strong hold fast embedded in Cement Concrete block at top and bottom with locking arrangement including cutting, bending, making holes and with one coat of primer etcetera complete.	10.80	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
146.00	Providing and erecting 1.5 metre high wire fencing with seven rows of barbed wire supported on Mild SteelAngles (50 mili metre x 50 mili metre x 6 mili metre) at 2.5 Mild Steel, Center to center including excavating pits for foundqtion, fixing post in cement cocnrete 1:4:8 of size 45 x 45 x 45 centi metre fastening the wire and painting the Mild SteelAngles with one coat of red lead primer and two coats of painting etcetera complete.	70.00	One Running Meter			
147.00	Excavation for roadway in earth, soil of all sorts, sand, gravel or soft murum including dressing section to the required grade, camber and side slopes and conveying the excavated materials with all lifts upto a lead of 50 metre and spreading for embankment or stacking as directed.	45.00	One Cubic Metre			
148.00	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at Optimum Moisture Content, carriage of mixed Material to work site, spreading in uniform layers with motor grader/ Paver on prepared surface and compacting with vibratory roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - I Material	22.50	One Cubic Metre			
149.00	Supplying hard murum/ kankar at the road site, including conveying and stacking complete.	45.00	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
150.00	Spreading hard murum/ soft murum/ gravel or kankar for side width complete	45.00	One Cubic Metre			
151.00	Compacting the hard murum side widths including laying in layers on each side with vibratory roller including artificial watering etcetera complete.	150.00	One Square Metre			
152.00	Construction of dry lean cement concrete Sub-base over a prepared sub-grade with coarse and fine aggregate (Natural Sand/ VSI grade finely washed crushed sand) conforming to IS: 383, the size of coarse aggregate not exceeding 25 mili metre,, cement content not to be less than 150 Kilogram/ Cubic Metre, Optimum Moisture Content (OMC)to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer-in-charge, compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etcetera complete.	15.00	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
153.00	Providing and laying in-situ M-30 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement, coarse and fine aggregate(VSI grade finely washed crushed sand) conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver, compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-in-charge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6 metre X 0.6 metre centre to centre, admeasuring 80 mili metre at bottom and 40 mili metre at top with depth of 75 mili metre and maintaining the same throughout curing period by any other method approved by Engineer-in-charge.	32.25	One Cubic Metre			
154.00	Providing and laying in situ cement concrete M -30 with tremix treatment for 200 mili metre thickness for Concrete Road is including laying plastic sheet for 125 micron thickness with groove cutting of 4 mili metre wide and 20 mili metre deep with necessary refilling with polysuphide sealant (Pouring grade) confirming to BS : 5212 - 1989 into sawed groove widened at top for sealant reservoir of specified size and shape as per detailed drawing including fixing Polyethylene foam backer rod of required diameter (excluding reinforcement) with coarsen and fine aggregate Using V.S.I. Quality Artificial Sand etcetera complete	30.00	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
155.00	Providing and fixing in position Thermo Mechanical Treated (TMT) FE 500, tie bars precoated with anticorrosive epoxy paint of 12 mili metre diametre 70 centi metre long and at 30.00 centi metre centre to centre and wherever directed including handling, straightening wrapping with paper of approved quality for half length, necessary cutting, handling, straightening, supported by assembly of Thermo Mechanical Treated (TMT) FE 500, chairs with proper alignment etcetera complete.	83.00	One Number			
156.00	Conveying materials obtained from road cutting including all lifts, laying in layers of 20 centi metre to 30 centi metre breaking clods, dressing to the required lines, curves, grades and section, watering and compacting to not less than 97% of standard Proctor density for a lead of over 50 metre to 300 metre inclusive from the site of excavation to the site of deposition as directed.	36.00	One Cubic Metre			
157.00	Providing and laying Cast in situ/Ready Mix cement concrete M-20 of trap/ granite / quartzite/ gneiss metal for Reinforced Cement Concrete slabs and landings as per detailed designs and drawings including steel centering, formwork, cover blocks, laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete,(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	18.02	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
158.00	Providing and laying Cast in situ/Ready Mix cement concrete M-20 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete chajja as per detailed design and drawings including steel centering, formwork, cover blocks, laying/ pumping, compacting and roughening the surface if special finish is to be provided and curing complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	0.32	One Cubic Metre			
159.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-20 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete pardi of required thickness including steel centering, formwork, cover blocks, laying/ pumping, compacting, curing, finishing and rougheningthem if special finish is to be provided and curing complete.(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	48.44	One Cubic Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
160.00	Providing internal cement plaster 20 mili metre thick in single coats in cement mortar 1:5 without neeru finish, to concrete, brick surface, in all positions including scaffolding and curing etcetera complete	68.57	One Square Metre			
161.00	Providing neeru finish to plastered surfaces in all positions including scaffolding and curing etcetera complete.	68.57	One Square Metre			
162.00	Providing and laying vitrified mirror / glossy finish tiles decorative type having size 590 mili metre to 605 mili metre x 590 mili metre to 605 mili metre of 8 to 10 mili metre thickness and confirming to Indian Standard 15622-2006 (group Bla) of approved make, shade and pattern for flooring in required position laid on a bed of 1:4 cement mortar including neat cement float, filling joints, curing and clearing etcetera complete.	27.26	One Square Metre			
163.00	Providing and laying vitrified stone effect finish tiles having size 590 to 605 mili metre x 590 to 605 mili metre of 8 to 10 mili metre thickness and confirming to Indian Standard 15622-2006 (Group Bla) of approved make, shade and pattern for dado & skirting in required position laid on a bed of 1:4 cement mortar including required position laid on a bed of 1:4 cement mortarincluding neat cement float, filling joints, curign and cleaning etcetera complete.	2.96	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
164.00	Providing and applying three coats of water proof cement paint of approved manufacture and of approved colour to old plastered surfaces including scaffolding if necessary, cleaning and preparing the surface, watering for two days etcetera complete.	187.80	One Square Metre			
165.00	Providing and fixing rolling shutter fabricated from steel laths of minimum thickness 0.9 mili metre with lock plate of 3.15 mili metre thickness reinforced with 35 x 35 x 5 mili metre angle section fitted with sliding bolts and handles for both sides, deep Mild Steel channel section of depth and thickness not less than 65 mili metre and 3.15 mili metre respectively with hold fast arrangements, Mild Steel Bracket plate 300 x 300 x 3.15 mili metre minimum size and shape with square bar, suspension shaft of minimum 32 mili metre diametre, hood cover of Mild Steel sheet not less than 0.9 mili metre thickness and of any size at top and safety devices including mechanical gear operation arrangement consisting of worm gear wheels and worms of high grade cast iron or mild steel and one coat of red lead primer etcetera complete. (Indian Standard 62481979) (With mechanical gear)	3.78	One Square Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
166.00	Providing and fixing mild steel grill work for windows, ventilators etcetera 20 Kilogram/Square Metre as per drawing including fixtures, necessary welding and painting with one coats of anticorrosive paint and two coats of oil painting complete.	26.64	One Square Metre			
167.00	Boring work (including transport.) 200/215 mm diameter in the soil / gravel surface Bore diameter of 150 mm in solid rock. This includes diameter drilling work. (Wet drilling) MJP Bore Well SSR Shedule 'B' A	120.00	One Running Metre			
168.00	After completion of drilling bore well, capacity test by flushing (air lift method) is measured with 90 degree "V" notch. MJP Bore Well SSR Shedule 'B' A	2.00	One Number			
169.00	180 mm diameter PVC Casing pipe (8 kg / cm2) (IS 4985-1988) In exceptional circumstances / Casing pipes with a rock surface and if more than 40 feet of casing pipe is required, the casing should be used with the technical approval of the Deputy Engineer and Geologist.	20.00	One Running Metre			
170.00	180 mm diameter PVC Casing pipe (8 kg / cm2) (IS 4985-1988) Casing lowering, grounding	20.00	One Running Metre			
171.00	180 mm diameter cap for PVC pipe.	2.00	One Number			
	TOTAL : (i) Civil Work					

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
	(ii) Electrical Work					
172.00	Supplying and erecting HMS PVC conduit FRLS grade 25 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	1720.00	One Metre			
173.00	Supplying and laying HMS PVC conduit FRLS grade 25 mm dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC.	8680.00	One Metre			
174.00	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 32 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.	868.00	One Metre			
175.00	Supplying and erecting mains with 2x1.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	5665.00	One Metre			
176.00	Supplying and erecting mains with 1x1.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	5665.00	One Metre			
177.00	Supplying and erecting mains with 2x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	7981.00	One Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
178.00	Supplying and erecting mains with 1x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	7981.00	One Metre			
179.00	Supplying and erecting mains with 2x4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	255.00	One Metre			
180.00	Supplying and erecting mains with 1x4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	255.00	One Metre			
181.00	Supplying and erecting modular type switch 6A / 10A duly erected on provided plate and box with wiring connections complete.	659.00	One Number			
182.00	Supplying and erecting modular type switch 16A duly erected on provided plate and box with wiring connections complete.	229.00	One Number			
183.00	Supplying and erecting modular type 3 pin 6A multi socket with safety shutter, duly erected on provided plate and box with wiring connections complete.	659.00	One Number			
184.00	Supplying and erecting modular type 3 pin 6 / 16A multi socket with safety shutter, duly erected on provided plate and box with wiring connections complete.	239.00	One Number			
185.00	Supplying and erecting modular type blanking plate one module, duly erected on provided plate & box.	58.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
186.00	Supplying and erecting modular type (two module) electronic step regulator for fan, duly erected on provided plate and box with wiring connections complete.	173.00	One Number			
187.00	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 2 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	185.00	One Number			
188.00	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 6 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	14.00	One Number			
189.00	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 12 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	185.00	One Number			
190.00	Supplying and erecting PVC Surface modular switch box with double mounting plate for 2 module duly erected.	30.00	One Number			
191.00	Supplying and erecting PVC Surface modular switch box with double mounting plate for 12 module duly erected.	30.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
192.00	Supplying and erecting 16 / 20 / 25 A starter (modular range) 2 module for AC unit on provided box complete & duly concealed with necessary material and connected.	10.00	One Number			
193.00	Point wiring for light/bell hybrid type (Surface type under false ceiling and concealed type for drops & switch boards on walls) in min 20 mm PVC conduit / casing n capping with 1.5 sq.mm. (2+1E) FRLSH grade copper wires, modular type switch, earthing and required accessories as per specification No: WG-PW/HW	418.00	One Point			
194.00	Point wiring for ceiling fan (Surface type under false ceiling and concealed type for drops & switch boards on walls) in min 20 mm PVC conduit / casing n capping with 1.5 sq.mm. (2+1E) FRLSH grade copper wires, modular type switch, earthing and required accessories as per specification No: WG-PW/HW	173.00	One Point			
195.00	Point wiring for light/bell/exhaust fan in PVC trunking (casing-capping) with 1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW	173.00	One Point			
196.00	Wiring for plug on board with Switch socket surface/concealed type, copper wiring and earthing and with modular accessories as per specification No: WG-PW/CW	142.00	One Point			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
197.00	Supplying and erecting LED square / circular Max. 18 W down lighter/ Panel Light having pressure die-cast aluminium housing, polystyrene diffuser having system lumens output of Min. 2000 Lumens, min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	33.00	One Number			
198.00	Supplying and erecting LED Panel Light(600mm X 600mm) Max. 35 W having CRCA powder coated housing, polystyrene diffuser having system lumens output of Min 4200 Lumens, min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50 including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	388.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
199.00	Supplying and erecting bulk head LED fitting max. 10W with high transitivity diffuser with system lumens output of min. 1100 lumens, min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., THD<10%, p.f. >0.95, operating range of 140-260V, in built surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, IP66, IK09 rated on provided PVC Block / wooden board with 3 years warranty.	28.00	One Number			
200.00	Supplying and erecting anodized aluminium corridor / passage light LED fitting (4 feet) Max. 22W with high transitivity diffuser with system lumens output of Min.2200 lumens , min. efficacy of 100 lumen/W, CRI>80, CCT upto 6000K, Beam Angle of 110 deg., Ripple<5%, THD<10%, p.f. >0.95, operating range of 200-270V, surge protection of 2 kV, Life class of 50,000 Hrs. at L70B50, including driver, with end caps on provided PVC Block / wooden board with 3 years warranty.	79.00	One Number			
201.00	Supplying and erecting ding dong / electronic musical type call bell with heavy duty coil suitable to operate on 230V A.C. supply erected on polished double wooden block/sunmica block of suitable size.	22.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
202.00	Supplying and erecting exhaust fan medium duty 230 V A.C. 50 cycles 225 mm. 1400 RPM with condenser complete erected in position with necessary materials. Fan motor with moisture proof treatment and 'E' class insulation.	33.00	One Number			
203.00	Supplying and erecting Energy Saving BLDC Ceiling fan 230 V A.C. 50 cycles 1200 mm, max. energy consumption of 28W having service ratio (CMM/W) of Min. 8 , PF>0.9, THD<10% with compatible speed regulator, Temperature Rise of Max. 40 deg. C, having external mounted control PCB completely erected in position as per specification no. FG-FN/CF	173.00	One Number			
204.00	Supplying & fixing anchor type fastener fan hook, with 2 nos. of 10 mm dia x 75 mm long with necessary materials for ceiling fan.	173.00	One Number			
205.00	Supplying and erecting 'B' class G.I .pipe / M.S. pipe down rod duly painted for fan complete erected with PVC three core flexible cable 1 sq. mm copper PVC wire.	173.00	One Metre			
206.00	Supplying, erecting, testing and commissioning self contained water cooler 230/250V 50Hz nominal cooling capacity of 150 litres per hour and storage capacity 150 litres with partially stainless steel body as per specification no. AP-WCR/WC	2.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
207.00	Supplying and erecting ultra violet storage type water purifier (RO+UV+UF) with softener for safe drinking water consisting of UV germicidal tube of 8W capacity choke made of copper wire and two indicator lamps with output of purified water minimum 0.33 litre/min with activated carbon filter and softener operating on 230V, single phase A.C. supply with UV fail & filter change indication system .(for TDS more than 200)	2.00	One Number			
208.00	Supplying, erecting & marking SPMCB 6A to 32A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	125.00	One Number			
209.00	Supplying, erecting & marking SPMCB 6A to 32A, B-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	125.00	One Number			
210.00	Supplying, erecting & marking DPMCB 40A to 63A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	1.00	One Number			
211.00	Supplying, erecting & marking TPMCB 40A to 63A, with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	24.00	One Number			
212.00	Supplying, erecting & marking FPMCB 40A to 63A, with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	20.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
213.00	Supplying & erecting triple pole and neutral distribution board (TPNDB), SPMCB of 4 ways/phase (12 poles), with door, 1.2mm thickness, surface/flush mounted, IP 43 protection on iron/GI frame (horizontal busbar type) as per specification no. SW-SWR/MCBDB	20.00	One Number			
214.00	Supplying and erecting single pole and neutral distribution board (SPNDB), with 2 ways for incoming and 10 ways (10 poles) for outgoing SP MCBs, with door, 1.2mm thickness surface / flush mounted, IP 43 Protection on iron / GI frame as per specification no. SW-SWR/MCBDB	1.00	One Number			
215.00	Supplying & erecting triple pole and neutral distribution board (TPNDB), 3 pole/4 pole MCCB as incomer & outgoing SP MCB (24 poles) or TP MCB of 8 ways (24 poles), with door, 1.2mm thickness, surface/flush mounted, on iron/GI frame (vertical busbar type) as per specification no. SW-SWR/MCBDB1	3.00	One Number			
216.00	Providing & erecting 4 Pole MCCB, 415 V, 100A, rated short-circuit breaking capacity 25 kA (Ics=100% of Icu), adjustable thermal (overload) setting and fixed magnetic setting with provided leads, provision for installation of shunt/UV/trip alarm contact. MCCB with phase barriers on both sides, insulation withstand capacity 800V, no line-load bias in provided enclosure/panel as per specification no. SW-SWR/MCCB	11.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
217.00	Providing & erecting 4 Pole MCCB 415V, 250A, rated short-circuit breaking capacity 36 kA (Ics=100% of Icu) adjustable thermal (overload) setting and adjustable magnetic setting with provided leads, provision for installation of shunt/UV/trip alarm contact and MCCB should have phase barriers both sides, with insulation withstand capacity 800V, no line-load bias in provided enclosure/panel as per specification no. SW-SWR/MCCB	1.00	One Number			
218.00	Providing & erecting floor/wall mounting, MCCB panel board, with door, suitable for four pole incoming 250A, 8 ways Four pole outgoing, up to 100 A MCCBs on iron frame, as per specification no SW-SWR/MCCBPB. (Excluding MCCBs)	1.00	One Number			
219.00	Providing & erecting incoming and outgoing cable alleys suitable for MCCB panel board with door, 250A incoming and 8 way outgoing or 400A incoming and 6 way outgoing made from CRCA sheet 1.6 mm thick duly powder coated and having vertical insulated partition for shielding between the shared face of cableway and DB.	1.00	One Set			
220.00	Providing & erecting prewired meter module suitable for MCCB panel board with CTs and emfs VIF meter.	1.00	One Set			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
221.00	Supplying and erecting metal work in CRCA sheet including Iron work for supports with fabrication of boxes, panel boards, etc. including cutting, bending, drilling, welding, riveting, treated with anti-rust treatment and duly powder coated or painted with one coat of red lead paint and 2 coats of enamel paint complete.	245.00	One Kilogram			
222.00	Supplying and erecting plywood 12 mm thick fixed to wall or on provided panel board with necessary materials such as screws, wall fasteners supports, nuts bolts etc. complete.	3.00	One Square Metre			
223.00	Supplying and erecting iron work, sheet metal work consisting of CRCA sheets, various sections of iron, plates, chequered plates, rods, bars, MS pipes, etc. for panel board or any other purpose with bending, cutting, drilling and welding complete erected at the position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match the switchgears or as per directions by the authority.	155.00	One Kilogram			
224.00	Supplying and erecting of any size electrolyte aluminium patti or bar in bus bar chamber / in panel or any other purpose, 500 V with require capacity 99.9% aluminium purity with E91E Grade as per IS 5082 & Current Density 0.8 A per sq. mm. with fixing arrangement (like lug or bottle type lug) to both the end with high grade polyolefin insulation sleeve complete as per specification no. BCP-BB	55.00	One Kilogram			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
225.00	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 150 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	70.00	One Metre			
226.00	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 16 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	485.00	One Metre			
227.00	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 50 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	85.00	One Metre			
228.00	Supplying & erecting G.I. pipe 'A' class 50 mm dia. erected for enclosing XLPE armoured cable on wall/pole as per specification no. CB-CE	15.00	One Metre			
229.00	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 90 mm outside dia. double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	55.00	One Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
230.00	Providng earthing with galvanized iron earth plate size 60 x 60 x 0.6 cm complete with all materials, testing & recording the results as per specification no. EA-EP	8.00	One Number			
231.00	Supplying and erecting GI strip of high purity required size used for earthing on wall and/or any other purpose with necessary GI clamps fixed on wall painted with bituminous paint with joints required. As per specification no EA-EP.	155.00	One Kilogram			
232.00	Supplying and erecting street light Wall bracket made from 40 mm. dia ' G.I. pipe 1.2 m. in total length complete as per specification no. FG-BKT/WB	8.00	One Number			
233.00	Supplying and erecting integrated LED street light fitting 60W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 6600 Lumens, min. efficacy of 110 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2.	8.00	One Number			
234.00	Supplying and erecting HMS PVC conduit FRLS grade 25 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	1120.00	One Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
235.00	Supplying and laying HMS PVC conduit FRLS grade 25 mm dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC.	4475.00	One Metre			
236.00	Supplying, fixing, and configuring 8-ports managed gigabit, Layer-2 switch, 10/100/1000 base-T, POE smart switch plus 2 SFP erected in provided rack complete.	2.00	One Number			
237.00	Supplying, fixing, and configuring 24 ports, POE switch in provided rack as per specification No. WG-NWC/ENS	3.00	One Number			
238.00	Supplying & erecting of High definition 4/5 Megapixel IP IR Dome Camera with following featuresImage Sensor : minimum 1/2.8" Progressive Scan CMOS, Video Resolution : minimum 2592 x 1520Video Compression : H.264, H.265 or higher, at least Three individually configurable stream, Frame rate : minimum 25 fps at all resolutions, WDR : minimum 120 dB Wide Dynamic Range, ONVIF profile conformant, minimum IR distance : 50m, Lens Type : 2.8/4/6 mm Lens, fixed focal, Field of View :2.8 mm, horizontal FOV 107°, vertical FOV 57°, diagonal FOV 129°4 mm, horizontal FOV 86°, vertical FOV 47°, diagonal FOV 102°6 mm, horizontal FOV 55°, vertical FOV 29°, diagonal FOV 65°Lux sensitivity - minimum 0.2 Lux at color, minimum 0.05 Lux at Black & White, 0.0 Lux (IR) Night Vision Distance minimum IR - 50m. Camera minimum	37.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
	Adjustment Angles - Pan : 350°, Tilt : 72°, Rotate : 350°. Power Supply : Support 12VDC & PoE, IP67, IK10 - Vandal Resistant. Built in micro SD/SDHC/SDXC card slot of minimum 128 GB, Built in microphone. minimum Input/Output - Audio in × 1, Audio Out × 1, Alarm in × 1, Alarm Out × 1. Image Settings : Rotate mode, saturation, brightness, contrast, sharpness, gain, white balance. Image Enhancements : Day/Night-Auto (ICR)/Color/Black & White, 3D Digital Noise Reduction, Automatic White Balance, Automatic Gain Control, Backlight Compensation, Highlight Compensation.					
239.00	Supplying & erecting of High definition 4/5 Megapixel IP IR Bullet Camera with following featuresImage Sensor : minimum 1/2.8" Progressive Scan CMOS, Video Resolution : minimum 2592 x 1520Video Compression : H.264, H.265 or higher, at least Three individually configurable stream, Frame rate : minimum 25 fps at all resolutions, WDR : minimum 120 dB Wide Dynamic Range, ONVIF profile conformant, minimum IR distance : 50m, Lens Type : 2.8/4/6 mm Lens, fixed focal, Field of View :2.8 mm, horizontal FOV 107°, vertical FOV 57°, diagonal FOV 129°4 mm, horizontal FOV 86°, vertical FOV 47°, diagonal FOV 102°6 mm, horizontal FOV 55°, vertical FOV 29°, diagonal FOV 65°Lux sensitivity - minimum 0.2 Lux at color, minimum 0.05 Lux	8.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
	at Black & White, 0.0 Lux (IR) Night Vision Distance minimum IR - 50m. Camera minimum Adjustment Angles - Pan : 350°, Tilt : 72°, Rotate : 350°. Power Supply : Support 12VDC & PoE, IP67, IK10 - Vandal Resistant. Built in micro SD/SDHC/SDXC card slot of minimum 128 GB, Built in microphone. minimum Input/Output - Audio in × 1, Audio Out × 1, Alarm in × 1, Alarm Out × 1. Image Settings : Rotate mode, saturation, brightness, contrast, sharpness, gain, white balance. Image Enhancements : Day/Night-Auto (ICR)/Color/Black & White, 3D Digital Noise Reduction, Automatic White Balance, Automatic Gain Control, Backlight Compensation, Highlight Compensation.					
240.00	Supplying, installing, testing & commissioning of 64/80 Ch Network Video Recorder (NVR), suitable connect Min. 64 IP Cameras, up to 5 Megapixel Resolution, with HDMI 1/VGA 1 and HDMI 2/VGA 2 outputs provided, Atleast one HDMI output of 4K resolution, atleast one VGA output with output up to 1920 × 1080, Support H.265 or higher, H.264, MJPEG, Supports Redundant Dual Power, Incoming Bandwidth 320 Mbps with minimum 8 SATA Hard Disks, ANR Technology, 8 SATA interfaces for 8 HDDs and capacity of each HDD up to 8TB, minimum 02 USB port, Alarm I/O 16/4, RJ-45 10/100/ 1000 Mbps self-adaptive Ethernet interface, support multi brand network Cameras, ONVIF conformance, Multiple network monitoring: Web viewer . support protocol TCP/IP, DHCP, DNS, DDNS, NTP, SADP, SMTP, NFS, iSCSI, UPnP™, HTTPS. RoHS, UL, CE, FCC certified.duly erected in provided U Rack with wiring connections, tagging and programming etc. complete as per specificationss no. CCTV-NVR	1.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
241.00	Supplying & erecting 8 TB internal Surveillance HDD suitable for SATA Port of NVR, interface transfer rate 6 GB/S, maximum sustained transfer rate 210 MB/Sec to 213 MB/S. Drive bay supported 08+, Cameras supported up to 64, Cache (MB) 256, Load/Unload Cycle -3000000, Work Load Rating per Year 180TB, MTBF 1000000 Hrs. HTTPS. RoHS, UL, CE certified, duly erected in position in provided NVR as per specification no. CCTV-HDD	8.00	One Number			
242.00	Supplying & erecting 43" professional LED display with 1920*1080 (Full HD) Display, suitable for 16/32 channel NVR and following featuresBrightness: minimum 500 Cd/m2Contrast Ratio: minimum 1000:1Viewing angle: 178/178 deg.Response time: maximum 8 msInputs: HDMI, VGA, BNC,USB, Audio In, Built-in speakers maximum 10 W, Suitable to operate on 100-240 V 50 Hz AC supply and 24/7 Duty Cycle duly erected on wall or table top with standard accessories like wall mount stand and wiring connections etc. complete as per specifications no. CCTV-MON	1.00	One Number			
243.00	Supplying and erecting modular type telephone socket one gang with safety shutter, duly erected on provided plate and box with wiring connections complete.	215.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
244.00	Supplying & erecting 2 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	5455.00	One Metre			
245.00	Supplying & erecting 10 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	195.00	One Metre			
246.00	Supplying & erecting 20 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	195.00	One Metre			
247.00	Supplying & erecting 50 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	80.00	One Metre			
248.00	Supplying and erecting 10m HDMI cord low voltage grade minimum 4k compliant to be laid in provided conduits with male/female 19 pin HDMI connectors complete.	2.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
249.00	Supplying, erecting & commissioning MDF Box 100x100 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	1.00	One Number			
250.00	Supplying, erecting & commissioning 10 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	2.00	One Number			
251.00	Supplying, erecting & commissioning 20 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	2.00	One Number			
252.00	Supplying, erecting & commissioning 30 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	2.00	One Number			
253.00	Supplying, erecting & commissioning 10 pair module for connection & disconnection of telephone cable as per specification no. WG-TW	42.00	One Number			
254.00	Supplying and installing, testing & commissioning of digital (hybrid) type EPABX of 6 x 32 extensions suitable upto 96 extensions complete. (63712.95+ (40066.95*3) =183913.80)	3.00	One Job			
255.00	Supplying, installing, testing & commissioning push button telephone instrument desk top unit as per specification complete	212.00	One Number			
256.00	Supplying, installing, testing & commissioning IP telephone instrument as per specification complete.	3.00	One Number			
257.00	Supplying and installing cat-6 cable suitable for networking as per specification no. WG-COC/NC	7325.00	One Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
258.00	Supplying and fixing 1 m UTP patch cord of Cat 6 type in position as per specification No. WG-COC/PC	215.00	One Number			
259.00	Supplying, fixing, and configuring 24 ports with 4 (SFP+) port, ethernet managed switch with web view/CLI, 6KV surge protection on ethernet port and console port for management in provided rack as per specification no. WG-NWC/GBS	20.00	One Number			
260.00	Supplying and fixing tool-less IO (Ethernet) flush/surface type in provided modular box as per specification no. WG-NAS/IO	215.00	One Number			
261.00	Supplying and fixing 24 port patch panel with tool-less keystone jacks in provided U Rack complete as per specification no. WG-NAS/PP	25.00	One Number			
262.00	Supplying and fixing 9U wall mount rack (Dimension-DxWxH – 500x600x500 mm) as per specification No. WG-NAS/RAK	20.00	One Number			
263.00	Supplying and erecting minimum Three & above star rated submersible pump set of 5.625 KW/7.5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 100 to 400 LPM discharge at 132 to 27 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	2.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
264.00	Supplying & erecting automatic control panel for 3 Phase , 415 volt, A.C, Submersible/centrifugal pump set up to 7.5 HP consisting of DOL starter having relay range 9-14 AMP,S.P.P., Combined ammeter/ voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc .	2.00	One Number			
265.00	Supplying and erecting ISI mark GI pipe 50 mm dia.'B' class at position with accessories complete as per specification no. CW-PLB/GP.	50.00	One Metre			
266.00	Supplying and erecting non return valve 50 mm dia in position made of gun metal complete.	2.00	One Number			
267.00	Supplying & erecting flat flexible 3 core 4 sq.mm PVC sheathed submersible type copper cable suitably clamped at fixed intervals with column pipe assembly complete.	50.00	One Metre			
268.00	Supplying, erecting & marking TPMCB 40A to 63A, with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	2.00	One Cubic Metre			
269.00	Supplying & erecting four pole ON LOAD change over switch, 415V, 63A, open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, rotary handle, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3.	1.00	One Number			
270.00	Supplying & erecting CRCA sheet metal one way enclosures of 1.2mm thickness suitable for DP MCB /TP MCB/FP MCB/RCCB/RCBO complete erected on angle iron/GI frame.	2.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
271.00	Providng earthing with galvanized iron earth plate size 60 x 60 x 0.6 cm complete with all materials, testing & recording the results as per specification no. EA-EP	2.00	One Number			
272.00	Supplying & erecting Carbon Dioxide (CO2) fire extinguisher of 4.5 kg. capacity cartridge type conform to IS 2878 /15683 complete erected with necessary clamp made from 50 x 6 mm. M. S. flat with nut & bolts routed in wall complete.	45.00	One Number			
273.00	Supplying, installation, testing and commissioning of booster fire pump [BP] suitable for water discharge of 900 LPM at 35 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 7.5 kW or of suitable kW capacity for manual/automatic operation and consisting of following :(a) Horizontal/vertical type, single/multi stage, centrifugal casing pump of cast iron body & bronze/CI impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation on 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)Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/BP	1.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
274.00	Supplying & erecting automatic control panel for 3 Ph, 415 volt, A.C. Submersible/centrifugal type booster pump 1no up to 7.5 HP - 10 H.P. consisting of DOL starter having relay range 13-22 AMP,S.P.P., Combined ammeter/voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc.	1.00	One Number			
275.00	Supplying and erecting metal work in CRCA sheet including Iron work for supports with fabrication of boxes, panel boards, etc. including cutting, bending, drilling, welding, riveting, treated with anti-rust treatment and duly powder coated or painted with one coat of red lead paint and 2 coats of enamel paint complete.	75.00	One Kilogram			
276.00	Supplying and erecting iron work, sheet metal work consisting of CRCA sheets, various sections of iron, plates, chequered plates, rods, bars, MS pipes, etc. for panel board or any other purpose with bending, cutting, drilling and welding complete erected at the position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match the switchgears or as per directions by the authority.	125.00	One Kilogram			

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
277.00	Supplying and erecting 100 mm dia. pressure gauge , 0-300 PSI or 0-14 kg per cm square fitted with 12/15 mm dia. pad cock valve, erected with provided G.I. pipe, elbow etc. complete as per specification no. FF-FFA/PG	1.00	One Number			
278.00	Supplying and erecting 12/15 mm dia pressure switch with provided isolation valve, G.I. nipple, elbow, etc complete as per specification no. FF-FFA/PS	1.00	One Number			
279.00	Providing and fixing high-density polyethylene (HDPE) container one piece moulded triple layer water tank made out of high density polyethylene and built corrugated inclusive of delivery up to destination hoisting and fixing of accessories such as inlet, outlet overflow pipe inclusive of all tanks capacity up to 20000 litres.	5000.00	One Litre			
280.00	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 10 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	50.00	One Metre			
281.00	Supplying and erecting 100 mm dia cast iron double flange NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	1.00	One Number			
282.00	Supplying and erecting 100 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	1.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
283.00	Supplying and erecting G.I. pipe 'C' class ERW 25 mm dia with necessary fittings complete as per specification no. FF-PP	40.00	One Metre			
284.00	Supplying and erecting G.I. pipe 'C' class ERW 75/80 mm dia with necessary fittings complete as per specification no. FF-PP	40.00	One Metre			
285.00	Supplying and erecting G.I. pipe 'C' class ERW 100 mm dia with necessary fittings complete as per specification no. FF-PP	250.00	One Metre			
286.00	Supplying and erecting 100 mm dia cast iron foot valve ball type/flap type with strainer for negative suction complete as per specification no. FF-VL/FV	1.00	One Number			
287.00	Supplying and erecting 25 mm dia gun metal gate valve complete with PN16 pressure rating, as per specification no. FF-VL/GV	13.00	One Number			
288.00	Supplying and installing wall mounting swinging hose reel drum fitted with 19 mm dia. 30m long high pressure polypropylene (Polyhose) along with necessary accessories complete as per specification no. FF-FFA/HV	13.00	One Number			
289.00	Supplying and erecting M.S./CRCA cabinet for housing single hydrant valve of size (400 x 400 x 400)mm or hose pipe box of size (600 x 600 x 200)mm made from min. 1.5 mm thick CRCA sheet with angle iron work of min. of size (25 x 25 x 4) mm having front doors with viewing glass of size (200x150) mm and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour(Code 538 of IS 5)	13.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
290.00	Supplying and erecting stainless steel branch pipe 63 mm dia fitted with 20 mm dia detachable hexagonal nozzle complete as per specifications no. FF-FFA/NZ	13.00	One Number			
291.00	Supplying and erecting 63mm dia, reinforced rubber lined (R.R.L.) hose pipe, 15m in length, fitted with necessary accessories complete as per specification no. FF-FFA/RRL	13.00	One Number			
292.00	Supplying and erecting gun metal single outlet hydrant valve fitted with necessary accessories complete as per specification no. FF-VL/HV	13.00	One Number			
293.00	Supplying and erecting fire brigade header (Siamese connection)of 150 mm dia, for supplying water in fire tank complete as per specification no. FF-FA/FMC	1.00	One Number			
294.00	Supplying and erecting 150 mm dia fire brigade header suitable for supplying water in fire tank complete as per specification no. FF-FA/FBC	1.00	One Number			
295.00	Supplying, erecting testing and commissioning manual call point (Pill box) with break glass, push button (resettable type) in metal enclosure complete as per specification no. FF-FAAS/MCP	4.00	One Number			
296.00	Supplying, erecting, testing and commissioning hooters having high (100dB @ 1m) and low (94dB @ 1m) volume setting, group addressing facility allowing multiple sounders to be activated with CRCA enclosure complete as per specification no. FF-FAAS/HTR	4.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
297.00	Supplying, erecting testing and commissioning optical type smoke detector on suitable back box with necessary connections complete as per specification no. FF-FAS/SD	185.00	One Number			
298.00	Supplying, installing, testing and commissioning FR, XLPE armoured cable 2 core 1.5 sq.mm. copper conductor complete erected on wall/ ceiling complete as per specification no. CB-LT/CU	4500.00	One Metre			
299.00	Supplying, installing, testing and commissioning of 2 Zones Microprocessor based conventional fire alarm control panel (FACP) with standard accessories , 16x2 Character LCD Display, provision for zone wise contact and beep sound alarm, suitable to operate on 120-220 V AC, 0 - 49 Deg C, 93 ± 2 Percentage RH (non- condensing) at 32 ± 2 Deg C complete as per specification no. FF-FAAS/FACP	1.00	One Number			
300.00	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.3TR to 1.6TR capacity having ISEER minimum 5.00 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	3.00	One Number			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
301.00	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor. room air conditioning unit 1.7TR to 2.0TR capacity having ISEER minimum 5.0 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position in provided recess with wooden frame complete specification no. AP-AC/WAC	3.00	One Number			
302.00	Supplying and erecting metal work in CRCA sheet including Iron work for supports with fabrication of boxes, panel boards, etc. including cutting, bending, drilling, welding, riveting, treated with anti-rust treatment and duly powder coated or painted with one coat of red lead paint and 2 coats of enamel paint complete.	20.00	One Kilogram			
303.00	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 12mm complete.	40.00	One Metre			
304.00	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 22mm complete.	40.00	One Metre			

Signature of Contractor **No. of Corrections** **Executive Enginer**

Sr. No.	Description of Item	Quantity	Unit	Rate		Amount
				In Figures	In Words	
1	2	3	4	5	6	7
305.00	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 12 mm for solar water heater/AC system.	40.00	One Metre			
306.00	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 22 mm for solar water heater/AC system.	40.00	One Metre			
	TOTAL : (ii) Electrical Work					
	TOTAL : (i) Civil Work					
	TOTAL : (ii) Electrical Work					
	TOTAL : PART - A (Work Portion)					

Signature of Contractor **No. of Corrections** **Executive Enginer**

SECTION – 8

SECURITIES AND OTHER FORMS

BID SECURITY (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 registeredoffice 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 to 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 Form of bid.

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 Instructions to Bidders, if required; or

   (b) fails or refuses to furnish the performance Security, in accordance with the Instructions to Bidders ; or

   (c) does not accept the correction of the Bid Price pursuant to Clause 27

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.

Signature of Contractor **No. of Corrections** **Executive Enginer**

This Guarantee will remain in force up to and including the date _____ _____** days after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extensions(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. This figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.*

** *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.*

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 Contractor")

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 sums 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 ground 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 thereunder or of any of the Contract documents which may be made between your 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 28 days from the date of expiry of the Defect Liability 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.

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----------[nameof 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 the 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 :. _ Name of Bank *I*
Financial Institution : ----------
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.

INDENTURE FOR SECURED ADVANCES

FROM 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 construction of such of the works as he has undertaken to executive at rates fixed for the finished works (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 advance on the security of other materials brought by the Contractor to the site of the said works.

Now THIS INDENTURE WINTNESSE 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 advance (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 or 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 and accepted by the Employer as security are absolutely the Contractor's own propriety and free from encumbrances of any kind the contractor will not make any application for or receive a further advance of 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.

Signature of Contractor **No. of Corrections** **Executive Enginer**

(3) That the materials detailed in the said account of Secured Advance and all other materials on the security of which any further advance or advance 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 authorised 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 advance shall the Employer of the price payable 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 payment 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 are 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 repayable by the Contractor to be the Employer together with interest thereon at twelve percent 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 or 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 without 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 utilise 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 thereof 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 advance shall not be payable.

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 prevail 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.

Letter of Acceptance

(Letterhead paper of the Employer)

To,
_____[name and address of the Contractor]

_____

_____

Dear Sirs,

This is to notify you that your online bid dated _____for execution of the _____ (name of the contract and identification number, as given in the instructions to bidders) for the Contract Price of Rupees _____ _____ (_____) (amount in words and figures), as corrected and modified in accordance with the Instructions to Bidders[1] is hereby accepted by our agency.

We accept / do not accept that _____ be appointed as the Adjudicator[2]. You are hereby requested to furnish Performance Security, in the form detailed in Para 34.1 of ITB for an amount equivalent to Rs. _____ within 07 days of the receipt of the letter of acceptance valid up to 28 days from the date of expiry of defects Liability Period i.e. up to _____ and sign the contract, failing which action as stated in Para 34.2 of ITB will be taken.

Yours faithfully,

Authorised Signature

Name and title of Signatory

Name of Agency

1 *Delete "Corrected and" or "and modified" if only one of these actions applies. Delete as corrected and modified in accordance with the Instructions to Bidders, if corrections or modifications have not been affected.*

2 *To be used only if the contractor disagrees in his Bid with the Adjudicator proposed by the Employer in the " Instructions to Bidders".*

Signature of Contractor **No. of Corrections** **Executive Enginer**

Issue of Notice to proceed with the work

(Letter head of the Employer)

To, Date _____

_____

_____

[name and address of the Contractor]

Dear Sirs,

Pursuant to your furnishing the requisite security as stipulated in ITB Clause 34.1 and signing of the Contract for the work of

_____

_____

Bid Price of Rs. _____.

You are hereby instructed to proceed with the execution of the said works in accordance with the documents.

Yours faithfully,

(Signature, name and title of Signatory

Authorised to sign on behalf of

Employer)

Signature of Contractor **No. of Corrections** **Executive Enginer**

AGREEMENT FORM

Agreement

This agreement, made the _____ day of _____ between _____ (name and address of the Employer) [hereinafter called "the Employer] 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 Contractor) (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 Rs _____.

NOW THIS AGREEMENT WITNESSTH as follows :

(1) In this Agreement, words and expression shall have the same meanings as are respectively assigned to them in the conditions of contract hereinafter referred to 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 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 the remedying the defects wherein 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 ready construed as part of this agreement viz.

(i) Letter of Acceptance

(ii) Notice to proceed with the works

(iii) Contractor's Bid

(iv) Condition of contract : General and Special

(v) Contract Date

(vi) Additional condition

(vii) Drawings

(viii) Bill of Quantities and

(ix) Any other documents listed in the Contract Data as forming part of the Contract.

In witnessed whereof the parties there to 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 _____

UNDERTAKING

I, the undersigned do hereby undertake that our firm M/s. _____ _____

agree to abide by this bid for a period _____ days for 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.

_____

(Signed by an Authorized Officer of the Firm)

_____

Title of Officer

_____

Name of Firm

_____

Date

Signature of Contractor **No. of Corrections** **Executive Enginer**

SECTION 9
DRAWINGS
(Attached)

SECTION 10

DOCUMENTS TO BE FURNISHED BY THE BIDDER

SPECIAL CONDITIONS AND TECHNICAL SPECIFICATIONS
(CIVIL WORK)

1. General Technical Specification shall comprise the specifications containing in the standard Specification mentioned hereinbefore. The I.S. specification referred to there in shall stand applicable of technical details and specification contained in P.W.D. Hand Book of Government of Maharashtra and Indian Electricity Rules framed under Indian Electricity Act for Electrical works, also be considered as part of these General Technical Specifications.

2. In the event no specifications. Instructions or guidelines are available in standard specification or Annexure for carrying out particular item of work or testing of materials as relevant specification and standards laid down in the codes of practices listed below shall be applicable and binding on the Contractor

3. The codes of practice that shall also be applicable are as under:

Abbreviations		**Code of practice**
IS	**:**	**Indian Standard of the Bureau of Indian Standard**
BS	**:**	**British Standard of British Standards Institutions.**
ASTM	**:**	**American Standard of the American Society of Testing Material.**
ACI	**:**	**American Concrete Institution**
DIN	**:**	**Deuscher Normenausschuss (German specification)**
SP	**:**	**Special Publication Bureau of Indian Standard.**
NBC	**:**	**National Building Code of India.**
IRC	**:**	**Indian Roads Congress.**
MOST	**:**	**Ministry of Surface Transport (Road Wings) Specification for Road and Bridge Works 1988**
CPHEEO	**:**	**Central Public Health and Environment Engineering Organization Drainage and tar Manual Govt. of India.**

4. In so far any stipulation made herein conflicts or is inconsistence with any of the provision of the standard specifications, the stipulation made here shall always prevail.

5. The codes of practices would always mean latest edition of codes of practices current on the day. 30 days period to the latest date of receipt of tender and only the Standards and specification mentioned therein shall be applicable.

6. The contract shall be responsible for the quality of work in the entire contraction work within the contract. The contract shall therefore have his own independent and adequate setup for ensuring the same.

7. The Contractor shall carry out modification in procedure of work, if any, as directed by the Engineer during his inspection. Contractor shall keep a book called work book order book on site Engineer will enter his observation I this book whenever necessary. Contractors representative shall sign below the remarks in token of acknowledgement. Works falling of quality s directly by the Engineer shall be rectified immediately the Contractor as his cost. For cement, Mild Steel, High Tensile steel, Concrete and similar other materials where essential test are to be carried at the manufacturers plants or at laboratories other than named laboratories the cost of samples, sampling forwarding testing and furnishing of test certificates shall also be borne by the contractor, the test certificate shall be furnished to the Engineer in charge.

8. Unless specified otherwise the method of sampling and testing of materials shall be as per the relevant and special publications. In the absence of relevant Indian standards the sampling and testing procedure to be used shall prescribed by the Engineer in charge.

9. The materials to be incorporated in the building for various items of works shall be procured by the Contractor in advance and samples thereof got approved from the Engineer-in-charge.

10. The approved samples shall be retained in a sample room constructed at site of work till completion of work .No deviation in size, grade, and quality of the material shall be made by the Contractor during the construction on any plea ground that the large quantity of such material is not available or otherwise.

11. The contractor rates quoted for various items of work in the Bill of Quantities shall be deemed to be include of the cost of the previous indicated in the above mentioned clauses.

12. Equipment for surveying ,leveling, lining, out and measurement on the work shall be procedure at his cost by the Contractor for his use. The same shall also be made available to the Engineer at site for any work connected with Contract without any charge. Maintaining the in proper working condition shall be responsibility of Contractor.

13. The Equipment such as spirit level plump bob long and short right angels, steel tapes of different lengths, Nylon thread, Plastic transparent water tubes etc. shall be procured and kept in dimensions.

14. The contractor shall have to construct and Provide laboratory cum sample Room and site office with toilet for the supervisory sit of the

Engineer-in-charge in addition to his site office godowns etc. all these structures of semi-permanent nature and shall be constructed by Contractor at his own cost as per the plan prepared and approved by the Engineer-in-charge.

15. The site office laboratory cum sample room shall be independent structures or shall be housed under one roof. The site office shall have a cabin for the Engineer and /or his authorised representative and a meeting hall which will also serve as place for supervisor staff of the Engineer-in-charge. Suitable Government land if available with the department will be made available to the contractor for this purpose.

16. The sample Room shall be meant for keeping the samples of materials approved by the Engineer and the same shall be the sole property of the Department to supplied free of cost by the contractor.

17. A Room for site laboratory shall be provided by the Contractor and equipped by the Contractor.

18. On completion of the entire work the temporary structure shall be dismantled by the Contractor, if so ordered by Engineer.

19. However in case the Engineer desires to retain these structure for his use for some time more, Even after completion of work the contractor shall retain these structure and the ownership of the same shall deemed to be transferred to the Engineer-in-charge. In such event the Contractor shall have no financial claim against the Engineer-in-charge.

20. Obtaining the water supply and electric connection for above Structures from the concerned local authorities and payment of water supply and electric energy charges concern authorities shall be the responsibility of the contractor which he shall discharge at his own cost, for the entire contract period.

21. the Contractor intending to use particular equipments, plants and machinery on work, shall inform the engineer about such intention one month in advance, He shall clarify the purpose utility and mode of operation etc. to the engineer and get the same approved.

22. During the course of construction unusual situation and typical problems may arisen which case the Engineer may damaged the methodology of construction, the contractor to adopt. In such an event the Contractor shall furnish the same an adopt the methodology duly modified, of so ordered by the Engineer. in order to achieve quality, workmanship and constructional effect the Engineer shall also propose particular methodology which shall be adopted by the contractor.

GENERAL INSTRUCTIONS

1. In the absence of any definite provision on any particular issue in the aforesaid "Standard Specification "reference may be made to the Volume-II. Codes of practice and in case of any dispute arising out of interpretation of the above, the Decision of the Engineer shall be final and binding in the contractor.

2. In so far as any stipulation made herein conflict or is in consistent with any provision of the standard specification I.S. codes of practice. The stipulation made here always prevail.

3. The Special stipulations which are in addition and over and above the specification contained in "Standard Specification" are given in forgoing clauses and shall be binding on the contract without any claim for extra labour and material thereof for.

4. The purpose of these stipulation is to achieve good workmanship and the work done in an Engineer-like-manner in part as well as in the totally at proper stage of work. This necessitates and becomes binding on a part of the contractor to obtain written approval and acceptance of the work done under different items of work at different stages from the Engineer-in-charge.

5. Not obtaining the written approval /acceptance work done from the engineer-in-charge at a particular stage of items of works stipulated and processing ahead of the next stage of work under the same or different item may viewed as serious lapse on part of the contract. In such an event the work done but not proved by the engineer-in-charge may summarily rejected. Similarly wherever work done which converts the unapproved work may also be rejected. Such rejected work shall be removed by the contractor at his own cost.

6. Acceptation of work done and granting permission to the contractor to proceed with further stage of work as per the stipulation made herein shall bedone by the Engineer by such mentions in "work Order Book" or by letter writing. The Contractor shall have to note and sign such remarks and certifications made in the work order book maintained at the site ofwork.

7. In case the contractor finds that part of whole of the excavated material is such that useful for refilling the excavated pits and trenches and/ or plinth or land development of site of work he shall informs so in writing to the Engineer requesting for final disposal outside the premises in the initial stage only. In case the Engineer approves of his fact and such proposal he shall order for final disposal of excavated unuseful material beyond premises.

8. As soon as the excavation pits and trenches partly or fully by the Contractor he shall get the same approved in writing from the Engineer and shall not proceed with next item of work such as laying of soil or bed concrete etc. Without complying with his requirement.

9. As soon as the excavation for foundation is approved he levels of these same shall be taken recorded by the Engineer in a Separate book known as field book which will be signed by the Contractor in token of acceptance of the same.

10. The depth and height of work done under different hidden items of work in foundation shall be determined from difference of level of top and bottom. Hence it will b binding upon the Contractor to arrange for level taking at interval of top and bottom. Hence it will be binding upon the Contractor to arrange for level taking at intervals and sign the levels taking at intervals and sign the levels record riled book by the Engineer in token of acceptance of the same. The Contractor shall not proceed with next items unless this be done

11. The plinth level i.e. floor level of the ground floor shall be got predetermined by the contractor from the Engineer in Writing.

12. The Floor level shall be fixed in the form of reduced level with reference to the level of permanent or temporary bench mark fixed shall be properly secured, Constructed, Protected, and maintained by the contractor atone or more location as ordered by the Engineer.

13. For Fixing the plinth level the Contractor shall get the made up or the developed ground level decided before hand writing from the Engineer.

For this Purpose, the engineer and the Contractor shall take account following considerations.

a) Contours and slop of natural ground of works sight.

b) Level of top adjoining public road.

c) The length and gradient of approach from the public road to the entrance of building.

14. The plinth level shall be accordance with the height of plinth shown on Architectural drawing measured above the made up or developed ground level decide and fixed in advance as above.

15. On the basis of Reduced levels of made up or developed ground level in plinth the Contract shall submit the Sectional drawing of plinth in to copies to Engineer duly signed by him. He shall Clearly show thereon the reduced level of flooring at plinth top of bed concrete below flooring top of the plinth filling on the predetermined reduced level of the made up or developed ground level. The sectional drawing shall show the section through internal wall and external walls distinctly duly indicating top of R.C.C plinth beams incase of frame structure and offset of walls and plinth level and at ground level and inside the foundation, in case of load bearing structure.

16. The Engineer shall scrutinize the sectional drawing submitted by the Contractor modify the same of necessary and return one copy of approved drawing to the contractor duly signed token of approval and acceptance of the content of the drawing. The contractor shall strictly adhere to the reduced level involved different items of work in plinth as shown on approved plan.

ADDITIONAL SPECIFICATION FOR CONCRETE WORKS

1.0 For all items of concrete works in any structural portion or its components only Design Mix concrete shall be used. For grade of concrete less than M-15 nominal mix concrete may be used.

2.0 Nominal Mix.

In case of nominal mix concrete is not required to be designed by preliminary tests. The proportion of cement, fine aggregate sand, coarse aggregates specified by volume.

3.0 Design mix

Concrete of specified grade shall be Designed on the basis or preliminary tests. The contractor shall make trial mixes using samples of aggregates and cement typical of those to be used in the works, if possible the concreting plant and the methods of transporting and depositing the concrete to be employed in the work shall be used to simulate working condition with the trial mixes. Design mix shall be carried out in accordance with the provisions laid IS 10262

3.2 Preliminary tests and strength requirement of controlled concrete shall confirm requirements of IS.456.

3.3 All these preliminary tests approval etc. shall be got done well in advance by the Contractor before any concreting is contemplated. Failure on the part of the Contractor to do so and the consequent delay in the completion of the work will not entitle him to any compensation whatsoever, either financially, or by way of extension of time.

4.0 Cement Content

Minimum cement content of various grades of Design mix concrete shall be as per I.S.

4.1 Water Cement Ratio

Water cement ratio in all element shall be as practicable in conformity with requirement of work as per I.S. 456.

4.2 Water Quantity and Slump

Water quantity and slump for all reinforced (Ordinary and controlled concrete) and plain concrete work shall confirm to IS 456 specification unless otherwise directed by the Engineer.

4.3 Admixtures

Use of superplasticizers in concrete shall be permitted. Admixture shall comply with IS 6925 .the cost of admixtures shall be borned by the Contractor.

5.0 Workmanship

5.1 Proportioning concrete
Proportioning of concrete shall conform to IS : 10252 Unless otherwise directed by the engineer.

5.2 Mixing of Concrete
Design mix concrete as well as nominal concrete shall be mixed following the provision in standard specification unless otherwise directed by the Engineer. Unless otherwise agreed by the Engineer concrete shall be mixed in a batch type mixer which shall comply with IS : 1791, IS : 4935 or such other types as the Engineer may approve.

When swing type weight batcher are used they shall comply with IS 2722.Batch mixers shall be tested and perform in accordance with IS 4634 Or such other tests as the engineer may require. During hot weather the Contractor shall ensure that the constituent materials are sufficiently cool, to prevent the concrete from stiffening in the intervals between its discharged from the mixer and as final position.

5.3 Transportation, placing and compaction of concrete.
The method of transportation, Placing and compaction of concrete shall be followed for standard Specifications unless otherwise directed by the Engineer. The Compaction shall be done with surface float vibrator for slab and with pin vibrator for columns and beams. Vibrators of adequate capacity shall be employed of the all types of works.

5.4 Curing
Curing shall be done following provision of Standard Specifications and as directed by the Engineer. Approved Curing Compound may be used in lieu of moist curing with the permissions of the Engineer. Such approved compound shall be applied to all exposed surfaces of concrete as soon as possible after the concrete has set.

5.5 Working in Extreme Weather
During windy weather efficient protection shall be provided to prevent the cement from being blown away during the process of proportioning and mixing. During wet weather, Concrete shall be adequately protected as soon as it is in position. No concrete shall be carried out during period of continuous heavy rain unless, it is completely covered during mixing, transportation and placing. In extreme hot weather, concrete shall be restricted to mornings and evenings. Time between mixing and placing of concrete shall be kept to the minimum and formwork shall be cooled by sprinkling water starting curing before concrete dries out.

5.6 Finishing

Finishing work shall comply requirement of standard Specification unless otherwise specified herein below :

Immediately on removal soft forms, the RCC work shall be examined by the Engineer before any defects are made good.

a) The work that has sagged or contain honeycombing to an extent detrimental to structural safety or architectural concept shall be rejected.

b) Surface defects of a minor nature shall be rectified generally as indicated below the Contractor.

i) Surfaces defects which require when form are removed unusually consists of bulges due to movement of forms, ridges at form joints, honey combed areas damages resulting from the stripping of forms and bolt hole. Careful chipping or tooling shall remove bulges and ridges and the surface is then rubbed with a grinding stone. Honey combed and other areas shall be chipped out, the edges being cut as straight as possible and perpendicularly to the surface, or preferably slightly under cut to provide a key at the edge of the patch, bolt, and holes shall be closed cement mortar to ensure through filling.

ii) Shallow patches shall first be treated with a coat of thin grout composed of one part of cement and one part of sand and then filled with mortal similar to the used in concrete. The mortal is places in layers not more than 10 mm thick and each layer shall be given in scratch finish to secure bond with the succeeding layer. The last layer shall be finished to match the surrounding by floating; rubbing or cooling formed surfaces by the pressing the form material against the patch while the mortal is still plastic.

iii) Large and deep patches filling up with concrete held an place by forms. Such patches shall be reinforced and carefully dowelled to the hardened concrete.

iv) The same amount of care to cure the material in the patches shall be taken as with the hole structure. Curing shall be started, as soon as possible after the patch is finished to prevent early drying, damp Hessian may be used. Construction joints shall be provided and traded following the provision of specification and as directed by the Engineer.

6.0 Durability

Minimum cement content for different exposures and sulphate attack are given in Table 19 and 20 of IS shall be followed for Design mix.

7.0 Tests and standard of Acceptance.

7.1 Test and Standard of acceptance criteria of design mix concrete and nominal mix concrete shall be as follows.

Sampling and Testing of concrete shall be as per provisions of Standard Specifications. Acceptance criteria fro strength of concrete shall be as below:

a) Design Mix Concrete

Full payment shall be made when 80% of the test cube Results are equal to and above the minimum specified strength and the remaining 20% on the result are above 80% of the specified strength.

b) Nominal Mix concrete

Full payment shall be made when 70 % of the test cube Result are equal to and above the minimum specified strength and remaining 30% of the result are above 75% of he specified strength. Case falling out side the above limit shall be examined by the Engineer on merits in each case.

7.2 Defective Concrete

Any Concrete which give sub standard result, or is severally damaged due to cracking or shows excessive honey combing and exposure of reinforcement of if any faculty, which in the opinion of the Engineer seriously impairs its function may be declared as defective concrete. Acceptance of Such concrete shall be covered by IS 456, such non-acceptance concrete shall be cuts out removed from the site and replaced by fresh concrete of specified quality by the Contractor at his own cost. Alternatively in case of acceptable concrete, the Contractor shall carry out whatever other remedy, shall carry out whatever other remedy the Engineer may responsibly required having regard to all the circumstances at expenses of the contractor.

7.3 Keeping Records

The records of mix design, slump, testing of C.C.cubes shall be maintained in accordance with Standard Specification.

LIST OF APPROVED MAKES

Note:

The Engineer-in-charge is at liberty select any of the brands indicated below. The contractor obtain prior approval from Engineer-in-charge. In charge before placing order for any specific material may approved order any the makes or Brands Listed below.

All materials should confirm to relevant standard and codes of BIS and shall have ISI mark.

In case of items for which approved make/vendor is not given below the Contractor shall with the prior approval of the Engineer-in-charge. In charge procure the same of the first quality and satisfy the Engineer-in-charge before use in the works.

In case of Contradiction between the approved makes/vendor specified below and mentioned in the Specifications/Bill of quantities. The decision of the Engineer-in-charge shall be final and binding on the Contractor.

SR. NO.	Material	Approved Manufactures
1	REINFORCED STEEL	TISCO, SAIL, ISPAT INDIA LTD, JINDAL, MITTAL.
2	CEMENT	ACC, ULTRATECH, MANIKGARH, BIRALA GOLD.
3	CERAMIC TILES (1st QUALITY)	SPARTEK, REGENCY, KAJARIYA, BELL, NITCO, JOHNSON'S
4	SLICA GRANULAR PLASTER	HERITAGE (M/s BACKELITE HYLAM LTD.)
5	SYNTHETIC PLASTER/PAINT	RENOVO, HERITAGE (M/s BACKELITE HYLAM LTD.)
6	WATER PROOFING COMPOUND	FOSCROCK, IMPERMO
7	PLASTICIZERS ETC. PIDLITE	MC BAUCHEMEL, FOSCROCK, CHEMISOL, NAICHEM
8	MEDIUM DENSITY FIBER Boards	
9	ALUMINIUM SECTIONS	JINDAL, HINDALCO, ALUMINIUM
10	POLYSTER SUN CONTROL FILM	GARWARE, SUNFLEX, BALSON, POLYCHEM
11	GLASS	TRIVENI SHREE VALLABH INDOSHHANI, MODIFOLAT GLASS, HINDUSTAN NATIONAL, SAINT GOBAIN
12	MIRROR	ATUL, GOLD FISH, MODIGUARD, SAINT GLOBIN ASSAHI
13	HYDRAULIC DOOR CLOSER	EVERITE, DOORKING, EVEREST, GODREJ, HINDUSTAN.
14	GYPSUM BOARD	SYPSUM INDIA, INDIA GYPSUM, SAINT GLOBIN

Signature of Contractor **No. of Corrections** **Executive Enginer**

SR. NO.	Material	Approved Manufactures
15	LAMINATES SHETS	FORMICA, RAMMICA, NEOLUX, DECOLAM GREENLAM.
16	BITUMEN IMPREGNATED BOARD	SHALTEX (M/s SHALIMAR)
17	MORTISE LOCK & LATCH	GODREJ, HARISON, KESHVRAM, RAMYUS, DHIMANI
18	ROLLING SHUTTER	KESHVRAM RAMYUS, DHIMANI, SWASTIK
19	PRINTER	ASIAN, BERGER, J&N
20	ACRYLIC PLASTIC EMULSION (1* Quality)	ASIAN, BERGER, J&N
21	CEMENT PAINT	SNOWCEM, TERRACO, SURFACEM
22	SYNTHETIC ENAMEL PAINT	ASIAN, BERGER, ICL, J&N
23	ROAD PAINTS	NEROLAC, BERGER, ICL, ASIAN
24	ADHESIVE	BAL ENDURA PIDILITE VEMICOL, FEVICOL
25	HARDWARE FITTING	EVERLITE ECIE, APEX, CNR
26	SANITARY WARE	HINDUSTAN, NYCER, PERRY, CERA, SANYO, VARMORA
27	E.W.C. SEAT COVERS	COMMANDER CAMPIAN, GEM DIPLOMAT
28	C.P. FITTING	GEM, PARDO, JAQUAR, LNK, VARMORA DRIPLESS, HINDWARE PARRYWARE
29	SOIL & WASTE PIPE	RIF BIC, NECO CENTRI, BHARAT (CONFORMING TO IS-3839)
30	G.I. PIPES	ZENITH, TATA, IST, GST, GSL
31	GUN METAL VALVES	LEADER ENGG KIRLOSKAR GG.
32	FLUSH VALUE	JAQUAR, KINSTON, SHREE VALLAB, LNK, VARMORA.
33	CISTERN	NOMOS, HINDUSTAN JINDAL, POLYMERS
34	C.I. s/s L.A. PIPES & FITTING	IISCO, KESORAM, ELECTRO, STEEL
35	C.I. SLUISE VALVE	KIRLOSKAR, INDIAN VALVE, LEADER, BURN
36	C.I. MANHOLE	B.C. IRON RIF (Agra)
37	G.I. FITTING IST QUALITY	ZENITH, TATA, R.M. ENGG. WORKS, SWASTIK
38	P.V.C. FITTING	FINOLEX, JAN, PLASTO
39	CONCRETE ADMIXTURES	FOSCROC, PIDLITE, BASF
40	ANTISTATIC FLOOR COATING	INARCO, PVC, WONDER FLOOR, ARMSTRON.

In addition to the condition of contract described before following General Condition shall also become part of this bid document and will later become part of the contract.

Signature of Contractor **No. of Corrections** **Executive Enginer**

ADDITIONAL CONDITIONS TO BE STRICTLY FOLLOWED BY CONTRACTOR TO CONFORM TO GRIHA 5 STAR RATING :-

i. The contractor shall mandatorily the follow the following guidelines laid here under so that the GRIHA 5 star rating is not suffered on account of acts and action, omission, negligence of the contractor or his team of otherwise. All conditions mentioned below shall be strictly adhered to by contractor at no additional cost.

ii. The contractor shall submit all documentation (Photographs, Test Reports, and Material Vendor Certificates etc) as and when required/ instructed by Green Building Consultant of Engineer In Charge.

iii. The Contractor shall arrange a site visit with Green Building consultant and submit 2 monthly report comprising photographs, documentary evidences to demonstrate compliance with these additional conditions. This report shall be verified by Green Building consultant.

iv. The rates quoted by contractor shall be inclusive of carrying out, documenting, maintaining and following the guidelines for GRIHA rating as detailed in the tender document. No extra payment shall be made for the same.

v. GRIHA compliance conditions as mentioned below shall supersede all other conditions mentioned in contract.

A) Preserve and protect landscape during construction & soil conservation till post construction:

1. The Contractor shall immediately after award of work shall excavate the topsoil for a depth of 200 mm and re-store the same at pre-designated space (in consultation with Green Building Consultant) and also take measures (stockpiling, mulching, temporary grassing/vegetation) that this topsoil is not disturbed till the same is utilized or the work is completed.

2. The contractor shall submit a soil fertility test reports of site's top soil from an ICAR (Indian Council of Agricultural Research) accredited laboratory.

3. The contractor shall preserve the topsoil and existing vegetation. The contractor shall immediately after award of work shall install/construct protection of at-least 2.0 M height (in consultation with Green Building Consultant) to protect existing vegetation (all mature trees) on site. The contractor shall maintain protection for vegetation till the completion of work.

4. The contractor shall immediately after award of work shall prepare a site management plan (in consultation with Green Building Consultant) clearly identifying construction area, site office, material storage, labour camp, waste storage area etc. The contractor shall restrict the construction to pre-planned/pre-designated areas with approval from Engineer-in-charge. The contractor shall submit site plan showing staging and spill prevention measures, erosion and sedimentation control measures along with photographic records to show that other areas have not been disrupted during construction and to show erosion and sedimentation control measures adopted. The contractor shall submit site plan showing demarcate areas on site from which top soil has to be gathered, designate area where it will be stored, measures adopted for top soil reservation.

5. The contractor shall by proper planning of timing of construction activity shall minimize site disturbance such as soil pollution due to spilling of the construction material and its mixing rain water. The contractor shall prepare and implement staging and spill prevention and control plan to restrict the spilling of the contaminated material on site. The contractor shall also control erosion and sedimentation.

6. The contractor shall establish wheel washing facility at the entrance and exist of site for vehicles carrying material to and from site.

7. The contractor shall Vegetate/mulch areas where vehicles do not ply. The contractor shall apply gravel/landscaping rock to the areas where mulching/paving is impractical. The contractor shall identify roads on side that would be used for vehicular traffic. The contractor shall upgrade vehicular roads (if these are unpaved) by increasing the surface strength by improving particle size, shape, and mineral types that make up the surface and base. Add surface gravel to reduce source of dust emission and Limit amount of fine particles (smaller than 0.075 mm) to 10% -20%.

8. The contractor shall limit vehicular speed on-site to 10 km/h.

9. The contractor shall construct temporary swells around the site to manage storm water during construction and a sedimentation tank (in consultation with Green Building Consultant).

10. The contractor shall reduce air pollution by wetting the surface by spraying water.
    i. on any dusty materials before transferring, loading and unloading,

    ii. areas where demolition work is being carried out,

    iii. any unpaved main-haul road, and

    iv. Areas where excavation of earth-moving activities are to be carried out.

11. The contractor shall minimize the disruption of the natural ecosystem.

B) Provide minimum level of sanitation/safety facilities for construction workers :-

1. The contractor shall strictly follow the provisions contained in general conditions of contract for providing basic amenities to the workers. The contractor shall ensure cleanliness of workplace with regard to the disposal of waste and efficient provide clean drinking water and latrines and urinals as per applicable standard. The contractor shall strictly follow the "CPWD SAFETY CODE" of GCC-2010.

2. The contractor shall install a safety demonstration facility in site (in consultation with Green Building Consultant) and arrange training programmes for construction workers to use safety gears and safety procedures.

3. The contractor shall comply with the National Building code 2005 norms on construction safety for ensuring safety during construction. The National Building Code 2005 have provisions for clean and hygienic accommodation, toilet facilities, purified drinking water. general store, a subsidized canteen medical facilities, day care centre and onsite safety equipments, etc.

4. The contractor shall provide a creche facility for children of construction workers.

5. The contractor shall adopt additional best practices and prescribed norms as in NBC 2005 or suggested by green building consultant.

C. Reduce air pollution during construction :

1. The contractor shall immediately after award of work shall install dust screen of Galvanized iron sheets or as approved by green building consultant (at least 3 M high) around the site to prevent air pollution and spillage to undisturbed area.

2. The contractor shall ensure proper screening, covering stockpiles, covering brick and leads of dusty materials, wheel-washing facility and water spraying facility to reduce air pollution during construction. The site roads should be regularly sprayed with water and wheels of all vehicles should be washed to prevent air pollution. The contractor shall transfer, handle/store dry loose materials such as bulk cement and dry pulverized flay ash inside a totally enclosed system.

3. The contractor shall undertake the responsibility to prevent air pollution (dust & smoke), ensure availability of adequate water supply for dust suppression, devise methodology to minimize impact of dust on the surrounding environment and ensure that these methods are implemented. The contractor shall provide documentary evidence regarding the method of working, plant equipment and air pollution-control system being adopted on the site.

4. All diesel gensets on site shall have proper chimneys (minimum Height 3.0 M) with their outlet facing away from the site.

5. The contractor shall efficiently use the natural resources (water, energy & materials) and takes measures to conserve the natural resources.

D. Efficient water use during construction :

1. The contractor shall prevent wastage of water during curing. The contractor shall also make efforts to minimize use of potable water during construction by proper & efficient construction water management practices as follows

   i. Using gunny bags for curing and using ponding for curing

   ii. Monitoring to avoid leaks and water wastage

   iii. Use of additives to reduce water requirements during curing

   iv. use of treated waste water/captured storm water

2. The contractor shall construct Sedimentation tank for collecting of excess curing water.

E. Utilization of fly ash in building structure :

1. The PPC cement to be used in the construction both for RCC and Mortar/Plaster shall be as per condition stipulated in the additional Conditions of the NIT under heading "Technical Specifications". The PPC cement shall have fly ash content of minimum 25% of fly ash on each bag of cement duly supported by test results from the supplier.

F. Reduction on waste during construction, efficient waste segregation, Storage and disposal of wastes & Resource recovery from waste:

1. The contractor shall ensure maximum resource recovery and safe disposal of wastes generated during construction and reduce the burden on landfill. The contractor shall segregate inert, chemical and hazardous wastes separately. The contractor shall make all efforts to recycle/safe disposal of segregated wastes (oil, paint, batteries & asbestos.) The contractor shall dispose-off the inert waste at landfill sites duly approved by local body/Engineer-in-charge.

2. The contractor shall keep record of all waste generated during construction activity and storage facility for segregated inert and hazardous waste before recycling and disposal.

3. The contractor shall use multi-colour bins for waste segregation at source at his own cost.

4. The contractor shall (in consultation with Engineer-in-charge) allocate separate space for the collected waste before transferring to the recycling/disposal stations.

5. The contractor shall make contractual arrangements for recycling of waste through local (Junk) dealers. The contractor shall also keep record of such transactions and provide the same to the department as and when required.

6. The contractor shall make all efforts for achieving zero waste generation by adopting appropriate resource recovery measures.

G. Use low-VOC paints/adhesives/sealants:

1. The contractor shall use zero/low-VOC paints duly approved by Engineer-in-charge. The contractor shall use water-based-acrylic paints duly approved by Engineer in Charge and shall not use solvent based oil paints. The contractor shall also submit certificates & vouchers from suppliers/ manufacturers that the paint used are zero/low-VOC paints. The prescribed VOC limits for paints to be used are given in the table below :-

Paint applications		**VOV limits (g of VOC per litre)**
Interior coatings	Flat	<50
	Non Flat	<150
Exterior coatings	Flat	<200
	Non Flat	<100
Anti corrosive	Glass/Semi glass/flat	<250

Limits for Low-VOC content in Adhesives in interior applications

Architectural Adhesive application	**VOV limits (g of VOC per litre)**
Ceramic tile	65
Structural glazing	100
Multi-purpose construction	70
Sub-floor	50
Wall boards/panel	50
PVC welding	285
Sub-specific use metal to metal	30
Wood	30
Fibre glass	80
Plastic foams/porous materials (except wood)	50

Limits for low-VOC content in interior sealants

Sealant Application	VOC Content limits (grams of VOC per litre)
Single-ply roof material installation/repair	450
Others	420
Sealant Primer applications architectural non-porous	250
Sealant Primer applications architectural porous	775
Other sealant primer applications architectural	750

2. The contractor shall use water based low-VOC sealants (acrylics, silicones and siliconized acrylics) & adhesives (acrylics or phenolic resins) duly approved by Engineer-in-charge. The solvent oil based /low in oil solvent content sealants (urethanes and butyls) & adhesives shall not be used in the construction. The contractor shall also submit certificates & vouchers from suppliers/manufactures that the sealants/adhesives used are low-VOC sealants/adhesives.

3. The contractor shall not use wood in construction. The composite wood products shall be free from urea-formaldehyde resins. The flush door proposed to be used as per the item of this NIT shall confirm to CPWD Specification 2009 with up to date correction slips. The contractor shall also submit certificates & vouchers from suppliers/manufacturers that the composite wood products are free from urea formaldehyde resins.

H. Minimize ozone depleting substances:

1. The contractor shall employ 100% zero ODP (ozone depletion potential), HCFC (hydrochloro-fluorocarbon) free and CFC (chloro-fluorocarbon) free insulation such as HCFC free rigid form insulation, mineral fibre cellulose insulation, glass fibre, wood fibre board, cork wool, expanded (bead) polystyrene, recycled newspaper and jute & cotton duly approved by Engineer-in-charge. The contractor shall not use materials which are not inherently zero-ODP such as polyurethane foams and polyisocyanurates. The contractor shall also submit certificates & vouchers from suppliers/manufactures that the insulation used are ODP/CFC/HCFC free.

2. The contractor shall unsure that water used in construction meets the water quality norms as prescribed in the Indian Standards or various applications.

3. The contractor shall get the water (Drinking water for workers and water used for construction) tested with regard to its suitability of use in the works and get written approval from the Engineer-in-charge before he proceeds with the use of same of execution of works. If the water is not suitable, the contractor shall arrange Municipal water of from any other sources at his own cost and nothing extra shall be paid to the contractor on this account. The water shall be got tested at frequency specified in latest CPWD specifications/ BIS code.

I. Avoid Noise Pollutions:-

1. The contractor shall ensure that the noise levels during construction shall not exceed MPCB norms.

2. The contractor shall conduct noise level tests (daytime and Night time) six monthly and submit test reports to Green Building Consultant demonstrating compliance with MPCB Norms.

ADDITIONAL CONDITIONS FOR MATERIALS
(CEMENT, MILD STEEL, TMT , HYSD BARS BULK ASPHALT ETC.)
BROUGHT BY CONTRACTOR

1. All the materials such as Asphalt, Cement, steel etc. shall be procured by the Contractor from approved Government Institutions or as directed by Engineer-in charge only. The material shall be brought at the site of work well in advance by the Contractor. The gate pas of the Asphalt , Invoice of Cement, steel etc. shall be examined by the authorised representative of the Engineer-in-charge.

2. The Contractor shall submit periodically as well as on the completion of work, an account of all materials used by him on the work. In addition, a separate register shall be maintained on site for recording daily itemwise Asphalt, Cement, steel consumption and also itemwise consumption of other materials. This shall be signed daily by Contractor or his representative and authorised representative of the Engineer-in-charge.

3. All the materials such Asphalt, Cement, steel etc. shall be procured by the Contractor from approved Government Institutions or as directed by Engineer in charge only. The materials from any other source in lieu of the approved Institutions shall be allowed except under written permission from the Executive Engineer. In such case, Certificate for its quality shall be produced by the Contractor and samples of materials shall be tested from any Government Laboratory by the Contractor at his cost and the test results be supplied to the Department. The materials not conforming to the required standard shall be removed at once from the site of work by the Contractor as his own cost. All the materials such as Asphalt, Cement etc. required for use in the work shall be confirming to the concerned I.S. / M.O.R.T.& H. specifications. The Contractor shall get necessary tests carried out to the frequency specified for each material in the specification and submit the test results to the Engineer-in-charge or his authorised representative. These materials shall be used on work by the Contractor, only if the test thereof are found satisfactory to the results Engineer-in-charge or his authorised representative. For the purpose of daily testing of material, such metal, sand, rubble, etc. , the Contractor shall make his own arrangements to install a well equipped Laboratory at the site of work at his own cost. The Contractor shall employ qualified personnel at the site of work at his own cost. The responsibility of carrying out tests to the frequency specified for each material shall rest with the Contractor. The extract of register shall be submitted to the Executive Engineer with each bill. Copy of register for the entire period shall be submitted along with the final bill.

4. The Contractor shall construct at his own cost shed/ sheds as per direction of the Engineer-in-charge of the work for storing the materials and provide double locking arrangements. The Store shed such constructed shall be removed on completion of work. The Contractor shall take all necessary steps to guard the materials brought by him.

5. The Contractor shall make his own arrangement for the safe custody of the materials brought by him on site of work.

6. The charges for conveying of materials from the place of purchase by the Contractor to the site of work and the actual spot on work site shall be entirely borne by the Contractor. No claims on this account shall be entertained.

7. Separate registers shall be maintained by the Contractor on the site for recording detailed itemwise Asphalt, Cement and Steel consumption on the work. These registers shall be signed by Contractor or his authorised representative and got signed from the representative Engineer-in-charge.

8. The material required only for this work shall be kept in the godown at site. No material shall be shifted outside of the godown except for the work for which this arrangement is entered, without prior approval of the Engineer-in-charge.

9. The Contractor shall produce sufficient documentary evidence i.e. bill for the purchase, octroi receipts etc. for the purchase of material brought on the work site at once if so requested by the Department.

10. All these material i.e. cement, steel etc. shall be protected from any damages , rains etc. by the contractor at his own cost.

11. The Contractor will have to erect temporary shed of approved specifications storing of above materials at work site at contractors cost having double lock arrangements (By Double lock - it is meant that godown shall always be locked by two locks, one lock being owned & operated by Contractor & other by Engineer-in charge of his authorised representative & the door shall be openable only after both locks are opened.)

12. If required, the wieghment of cement bags/ steel/ bulk asphalt bouzers etc. brought by the Contractor shall be carried out by the contractor at his own cost.

13. The contractor shall not use cement and other material for the item to be executed outside the scope of his contract except for such ancillary small item as are connected and absolutely necessary for execution of this work as may be decided by the Engineer-in-charge.

14. The Government shall not be responsible for the loss in cement, steel, bulk asphalt etc. during transit to work site. The cement brought by the contractor at the work site store shall mean 50 Kg. equivalent to 0.0347 Cubic Meter per bag by weight. The rate quoted should correspond to this method of reckoning. In case of ordinary/controlled concrete, if cement is found short, the shortage/shortages will be made good by the contractor at his cost.

15. ANNEXURE FOR R.C.C. PIPE PROCUREMENT : The R.C.C. pipes required for the work shall be procured from the MISSIDC only. The payment towards providing and fixing NP2 / NP3 / NP4 pipes will be released only after the contractor submits the bill of MISSIDC to authenticate that the pipes have been purchased from the MISSIDC. No payment towards the item of providing and laying of the pipe will be released in absence of the submission of the requisite document. After completion of these items in the particular kilometer the withheld payment will be finally released.

16. INDEMNITY : The condition regarding indemnity as defined on Page ……. At Sr.No.4 will apply mutatis mutandis in case of material brought by contractor at the site for the execution of the work being executed under this contract.

17. In case the material brought by the Contractor become surplus owing to the change in the design of the work, the material should be taken back by the Contractor at his own cost after prior permission of Engineer-in-charge.

18. Empty asphalt drums shall be the properly of the Contractor and the same shall be removed immediately after completion of work.

19. All empty cement bags shall be returned by Contractor to Department and the Executive Engineer shall preserve them for one year as token of proof of use of cement in proper proportion in work.

Arrangement of Materials

1. The Contractor shall make his own arrangement for supply of materials including bitumen 60/70 grade, and 30/40 grade cement and steel , RCC pipes /Collars. The Contractor shall be responsible for all transportation and storage of the materials at the 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 such inspection or examination as may be required.

2. The Contractor shall keep as accurate record of use of materials like bitumen, cement and steel used in the works in a manner prescribed by the Engineer.

3. After receiving the bitumen, the authorised challan / gate pass should be obtained from the refinery mentioned in the quality of bitumen, grade of bitumen, date, time of delivery etc. and it should be handed over to department for each consignment.

4. While transportation of bouzer a through transport pass should be obtained from the Corporation/ Municipality through which the bouzer is passed and same should be handed over the authorised person of the Department.

5. If there is any doubt regarding the material received, the same should be get tested from the Government laboratory at the cost of the Contractor, and if the results are substandard, the material or the work executed with such material will be rejected.

6. The day to day record of the receipt /utility/ balance of material should be kept by the Contractor at plant site / site of work / store and same will be checked by the Engineer-in-charge or authorised Engineer at any time.

7. The procurement of cement/ steel etc. should be from the authorised manufacturing company and the vouchers regarding purchase thereof shall be submitted to Engineer-in-charge.

8. The testing charges shall be entirely borne by the Contractor.

INTEGRITY PACT

Between

Public Works Department, Maharashtra Government

having its Office at Bandhkam Bhawan, Fort Mumbai - 400001

hereinafter referred to as

"PUBLIC WORKS DEPARTMENT",

and

_____

[Insert the name of the Sale Bidder/ Lead Partner of Joint Venture]

having its Registered Office at *(Insert full Address)* _____

_____

_____

and

_____

[Insert the name of the Partner(s) of Joint Venture, as applicable]

having its Registered Office at *(Insert full Address)* _____

_____

hereinafter referred to as

"The Bidder/Contractor"

Preamble

PUBLIC WORKS DEPARTMENT intends to award, under laid-down organizational procedures, contract(s) for *[Insert the name of tile package]*

_____

(Signature)
(For & On behalf of
PUBLIC WORKS DEPARTMENT)

(Signature)
(For & On behalf of Bidder/
Partner(s) of Joint Venture/
Contractor)

Signature of Contractor **No. of Corrections** **Executive Enginer**

Number *[Insert Specification Number of the package]* _____
PUBLIC WORKS DEPARTMENT values full compliance with all relevant laws and regulations, and the principles of economical use of resources, and of fairness and transparency in its relations with its Bidders/ Contractors.

In order to achieve these goals, PUBLIC WORKS DEPARTMENT and the above named Bidder/Contractor enter into this agreement called 'Integrity Pact' which will form a part of the bid.

It is hereby agreed by and between the parties as under:

Section I - Commitments of PUBLIC WORKS DEPARTMENT

(1) PUBLIC WORKS DEPARTMENT commits itself to take all measures necessary to prevent corruption and to observe the following principles:

a) No employee of PUBLIC WORKS DEPARTMENT, personally or through family members, will in connection with the tender, or the execution of the contract, demand, take a promise for or accept, for him/herself or third person, any material or other benefit which he/she is not legally entitled to.

b) PUBLIC WORKS DEPARTMENT will during the tender process treat all Bidder(s) with equity and fairness. PUBLIC WORKS DEPARTMENT 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) PUBLIC WORKS DEPARTMENT will exclude from evaluation of Bids its such employee(s) who has any personnel interest in the Companies/ Agencies participating in the Bidding/Tendering process.

(2) If Principle Secretary PWD, Maharashtra Government obtains information on the conduct of any employee of PUBLIC WORKS DEPARTMENT which is a criminal offence under the relevant Anti- Corruption Laws of India, or if there be a substantive suspicion in this regard, he will inform its Chief Vigilance Officer and in addition can initiate disciplinary actions under its Rules.

Section II-Commitments of the Bidder/Contractor

(1) The Bidder/Contractor commits 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:

(Signature)	*(Signature)*
(For & On behalf of PUBLIC WORKS DEPARTMENT)	(For & On behalf of Bidder/ Partner(s) of Joint Venture/ Contractor)

Signature of Contractor **No. of Corrections** **Executive Enginer**

a) The Bidder/Contractor will not, directly or through any other person or firm, offer, promise or give to PUBLIC WORKS DEPARTMENT, or to any of PUBLIC WORKS DEPARTMENT's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange an advantage during the tender process or the execution of the contract.

b) The Bidder/Contractor will not er.ter into any illegal agreement or understanding, whether formal or informal with other Bidders/Contractors. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or actions to restrict competitiveness or to introduce cartelization in the bidding process.

c) The Bidder/Contractor will not commit any criminal offence under the relevant Anti-corruption Laws of India; further, the Bidder/Contractor will not use for illegitimate purposes or for purposes of restrictive competition or personal gain, or pass on to others, any information provided by PUBLIC WORKS DEPARTMENT as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d) The Bidder/Contractor of foreign origin shall disclose the name and address of the Agents/ representatives in India, if any, involved directly or indirectly in the Bidding. Similarly, the Bidder/Contractor of Indian Nationality shall furnish the name and address of the foreign principals, if any, involved directly or indirectly In the Bidding.

e) The Bidder/Contractor will, when presenting his bid, disclose any and all payments he has made, or committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and/ or with the execution of the contract.

f) The Bidder/Contractor will not misrepresent facts or furnish false/forged documents/informations in order to influence the bidding process or the execution of the contract to the detriment of PUBLIC WORKS DEPARTMENT. The Bidder /Contractor will not have filled any suit/wirt petition/contempt petition in any of Hon'ble Court or to Government for getting payments of works or extra claims on payments against Public Works Department in case of delay of payments from Government.

(2) The Bidder/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.

(Signature)	*(Signature)*
(For & On behalf of PUBLIC WORKS DEPARTMENT)	(For & On behalf of Bidder/ Partner(s) of Joint Venture/ Contractor)

Signature of Contractor **No. of Corrections** **Executive Enginer**

Section III- Disqualification from tender process and exclusion from future contracts

(1) If the Bidder, before contract award, has committed a serious transgression through a violation of Section II or in any other form such as to put his reliability or credibility as Bidder into question, PUBLIC WORKS DEPARTMENT may disqualify the Bidder from the tender process or terminate the contract, if already signed, for such reason.

(2) If the Bidder/Contractor has committed a serious transgression through a violation of Section II such as to put his reliability or credibility into question, PUBLIC WORKS DEPARTMENT may after following due procedures also exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressors within the company hierarchy of the Bidder/Contractor and the amount of the damage. The exclusion will be imposed for a minimum of 12 months and maximum of 3 years.

(3) If the Bidder/Contractor can prove that he has restored/recouped the damage caused by him and has installed a suitable corruption prevention system, PUBLIC WORKS DEPARTMENTmay revoke the exclusion prematurely.

Section IV - Liability for violation of Integrity Pact

(1) If PUBLIC WORKS DEPARTMENThas disqualified the Bidder from the tender process prior to the award under Sectron Ill, PUBLIC WORKS DEPARTMENT may forfeit the Bid Guarantee under the Bid.

(2) If PUBLIC WORKS DEPARTMENT has terminated the contract under Section Ill, PUBLIC WORKS DEPARTMENT may forfeit the Contract Performance Guarantee of this contract besides resorting to other remedies under the contract.

Section V- Previous Transgression

(1) The Bidder shall declare in his Bid that no previous transgressions occurred in the last 3 years with any other Public Sector Undertaking or Government Department that could justify his exclusion from the tender process. The Bidder shall also declare in his bid that no legal suit/petition against Public Works Department for delay of payments or extra claims on elegible payments from Government that could justify his exclusion from the tender process.

(Signature)	*(Signature)*
(For & On behalf of PUBLIC WORKS DEPARTMENT)	(For & On behalf of Bidder/ Partner(s) of Joint Venture/ Contractor)

Signature of Contractor **No. of Corrections** **Executive Enginer**

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section VI - Equal treatment to all Bidders/Contractors

(1) PUBLIC WORKS DEPARTMENT will enter into agreements with identical conditions as this one with all Bidders.

(2) PUBLIC WORKS DEPARTMENT will disqualify from the tender process any bidder who does not sign this Pact or violate its provisions.

Section VII - Punitive Action against violating Bidders/Contractors

If PUBLIC WORKS DEPARTMENT obtains knowledge of conduct of a Bidder or a Contractor or Ius subcontractor or of an employee or a representative or an associate of a Bidder or Contractor or his Subcontractor which constitutes corruption, or if PUBLIC WORKS DEPARTMENT has substantive suspicion in this regard, PUBLIC WORKS DEPARTMENT will inform the Chief Vigilance Officer (CVO).

(*)SectionVIII - Independent External Monitor/Monitors

(1) PUBLIC WORKS DEPARTMENT has appointed a panel of Independent External Monitors (IEMs) for this Pact with the approval of Central Vigilance Commission (CVC), Government of India, out of which one of the IEMs has been indicated in the NIT/IFB.

(2) The IEM is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement. He has right of access to all project documentation. The IEM may examine any complaint received by him and submit a report to Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT, at the earliest. He may also submit a report directly to the CVO and the CVC, in case of suspicion of serious irregularities attracting the provisions of the PC Act. However, for ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter shall be referred to the full panel of IEMs, who would examine the records, conduct the investigations and submit report to Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT,giving Joint findings.

(Signature)	*(Signature)*
(For & On behalf of PUBLIC WORKS DEPARTMENT)	(For & On behalf of Bidder/ Partner(s) of Joint Venture/ Contractor)

Signature of Contractor **No. of Corrections** **Executive Enginer**

(3) The IEM is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT.

(4) The Bidder(s)/Contractor(s) accepts that the IEM has the right to access Without restriction to all documentation of PUBLIC WORKS DEPARTMENT related to this contract including that provided by the Contractor/Bidder. The Bidder/Contractor will also grant the IEM, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his documentation. The same is applicable to Subcontractors. The IEM IS under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s)/ Subcontractor(s) with confidentiality.

(5) PUBLIC WORKS DEPARTMENT will provide to the IEM information as sought by him which could have an impact on the contractual relations between PUBLIC WORKS DEPARTMENT and the Bidder/Contractor related to this contract.

(6) As soon as the IEM notices, or believes to notice, a violation of this agreement, he will so inform the Principle Secretary PWD, Maharashtra Government PUBLIC WORKS DEPARTMENT and request the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT to discontinue or take corrective action, or to take other relevant action. The IEM can in this regard submit non-binding recommendations. Beyond this, the IEM has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the IEM shall give an opportunity to PUBLIC WORKS DEPARTMENT and the Bidder/Contractor, as deemed fit, to present its case before making its recommendations to PUBLIC WORKS DEPARTMENT.

(7) The IEM will submit a written report to the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT within 8 to 10 weeks from the date of reference or intimation to him by PUBLIC WORKS DEPARTMENT and, should the occasion arise, submit proposals for correcting problematic situations.

(8) If the IEM has reported to the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT, a substantiated suspicion of an offence under relevant Anti- Corruption Laws of India, and the Principle Secretary PWD, Maharashtra Government, PUBLIC WORKS DEPARTMENT has not, within the reasonable time taken visible action to proceed against such offence or reported it to the CVO, the Monitor may also transmit this Information directly to the CVC, Government of India.

(Signature)
(For & On behalf of
PUBLIC WORKS DEPARTMENT)

(Signature)
(For & On behalf of Bidder/
Partner(s) of Joint Venture/
Contractor)

Signature of Contractor **No. of Corrections** **Executive Enginer**

(9) The word 'IEM' would include both singular and plural.

(*) *Thiss Section shall be applicable for only those packages wherein the IEMs have been Identified in Section - I : Invitation for Bids and/or Clause ITB* 9.3 *in Section - III: Bid Data Sheets of Conditions of Contract, Volume-I of the Bidding Documents.*

Section IX - Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor after the closure of the contract and for all other Bidder's six month after the contract has been awarded.

Section X- Other Provisions

(1) This agreement is subject to Indian Law Place of performance and jurisdiction is the establishment of PUBLIC WORKS DEPARTMENT. The Arbitration clause provided in the main tender document / contract shall not be applicable for any issue / dispute arising under Integrity Pact.

(2) Changes and supplements as well as termination notices need to be made in writing.

(3) If the Contractor is a partnership firm or a consortium or Joint Venture, this agreement must be signed by all partners, consortium members and Joint Venture partners.

(4) Nothing in this agreement shall affect the rights of the parties available under the General Conditions of Contract (GCC) and Special Conditions of Contract (SCC)

(5) Views expressed or suggestions/ submissions made by the parties and the recommendations of the *CVO/lEM#* in respect of the violation of this agreement, shall not be relied on or introduced as evidence in the arbitral or judicial proceedings (arising out of the arbitral proceedings) by the parties in connection with the disputes/ differences arising out of the subject contract.

 # CVO shall be applicable for packages wherein IEM are not Identified in Section IFB/BDS of Condition of Contract, Volume-I, IEM shall be applicable for packages wherein IEM are identified in Section IFB/BDS of Condition of Contract, Volume-l.

(Signature)	*(Signature)*
(For & On behalf of PUBLIC WORKS DEPARTMENT)	(For & On behalf of Bidder/ Partner(s) of Joint Venture/ Contractor)

Signature of Contractor **No. of Corrections** **Executive Enginer**

(6) 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.

(Signature)	*(Signature)*
(For & On behalf of PUBLIC WORKS DEPARTMENT)	(For & On behalf of Bidder/ Partner(s) of Joint Venture/ Contractor)
(Official Seal)	(Official Seal)
Name:	Name:
Designation:	Designation:
Witness 1:	Witness 1:
(Name & Address)	(Name & Address)
_____	_____
_____	_____
Witness 2:	Witness 2:
(Name & Address)	(Name & Address)
_____	_____
_____	_____

Price Variation

1) For Material such as Bitumen , Cement and Steel

Contract price shall be adjusted for increase or decrease in rates and price of Bitumen, Cement and Steel with the following principles and procedures and as per formula given in the contract data.

a) The price adjustment shall apply for the work done from the start date given in the contract data upto end of the initial intended completion date or extension granted by the Engineer and shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor,

b) The Price Adjustment shall be determined during each month from the formula given in the contract data

c) Stare Rates for 1) Cement Rs. 6,000.00/ MT

2) TMT Fe 500 Reinforcement Rs. 63,440.00/MT

3) Structural Steel Rs. 65,078.00/MT

Formula for Bitumen Component

$$V = QB [B_1 - B_0]$$

Where :

V = Amount of price variation in Rupees to be allowed for Bitumen component

QB = Quantity of Bitumen (Grade - 60/70) in metric tonne used in the permanent works and approved enabling works during the quarter under consideration.

B_0 = Basic rate of Bitumen in rupees per Metric tonne as considered for working out value of P or average Ex-refinery price in rupees per Metric tonne excluding taxes (Octroi, excise, GST tax) of Bitumen for the grade of bitumen under consideration prevailing quarter preceding the month in which the last date prescribed for receipt of tender, falls, whichever is higher.

B_1 = Current average Ex-refinery price per metric ton of Bitumen grade 60/70 under consideration excluding taxes , octroi , excise , GST Tax during the quarter under consideration.

Formula for TMT/HYSD and Mild Steel Component :

$$V_5 = \frac{S_0 \ (SI_1 - SI_o)}{SI_o} \times T$$

Where :

V_5 = Amount of price variation in Rupees to be allowed for T.M.T Steel component.

So = Basic rate of T.M.T Steel in rupees per Metric tonne as considered for working out value of P.

SI1 = Average Steel Index as per Wholesale Price Index during the quarter under consideration.

SI0 = Average Steel Index as per Wholesale Price Index for the quarter preceding the month in which the last date prescribed for receipt of tender, falls.

T = Tonnage of steel used in the permanent works for the quarter under consideration.

Formula for Cement Component :

$$V_6 = \frac{C_0 \ (CI_1 - CI_o)}{CI_o} \times T$$

Where :

V_6 = Amount of price escalation in Rupees to be allowed for Cement component.

Co = Basic rate of Cement in rupees per Metric tonne as considered for working out value of P.

CI1= Average Cement Index Published in Wholesale Price Index for the quarter under consideration.

CI0 = Average of Cement Index Published in the Wholesale Price Index for the quarter preceding the month in which the last date prescribed for receipt of tender, falls.

T = Tonnage of Cement used in the permanent works for the quarter under consideration.

2) <u>For labour, materials, fuels and lubricants exluding bitumen, cement and steel</u>

Contract price shall be adjusted for increase or decrease in rates and price of labour, materials, fuels and lubricants excluding bitumen, cement and steel in accordance with the following principles and procedures and as per formula given in the contract data.

The price variation clause to be included shall be read as follows:

a) The price adjustment shall apply for the work done from the start date given in the contract data upto end of the initial intended completion date or extensions granted by the Engineer and shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor.

b) The price adjustment shall be determined during each month from the formula given in the contract data.

c) Following expressions and meanings are assigned to the work done during each month:

R = Total value of work done during the month. It would include the amount of secured advance granted, if any, during the month, less the amount of secured advance recovered, if any during the month minus cement, HYSD/TMT/Mild Steel and Bitumen consumed during the month at stared rate provided in the tender. It will exclude value for works executed under variations for which price adjustment will be worked separately based on the terms mutually agreed.

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 in costs.

The formula (e) for adjustment of prices are: R = Value of work

Adjustment for labour component

(i) Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the following formula:

(ii) $VL = 0.85 \times Pl/100 \times R \times (L_1 - L_0)/L_0$

(iii) VL= increase or decrease in the cost of work during the month under consideration due to changes in rates for local labour.

(iv) L_0 = the consumer price index for industrial workers for the State on 28 days preceding the date of opening of Bids as published by Labour Bureau, Ministry of Labour, Government of India.

(v) L_1 = The consumer price index for industrial workers for the State for the under consideration as published by Labour Bureau, Ministry of Labour, Government of India.

(vi) P_l = Percentage of labour component of the work.

Adjustment of POL (fuel and lubricant) component

Price adjustment for increase or decrease in cost of POL (fuel and lubricant) shall be paid in accordance with the following formula:

$Vf = 0.85 \times Pf/100 \times R \times (F_1 - F_0)/F_0$

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

F_0 = The official retail price of High Speed Diesel (HSD) at the existing consumer pumps of IOC at nearest center on the day 28 days prior to the date of opening of Bids.

F1 = The official retail price of HSD at the existing consumer pumps of IOC at nearest center for the 15th day of month of the under consideration.

Pf = Percentage of fuel and lubricants component of the work.

Note: For the application of this clause, the price of High Speed Diesel oil has been chosen to represent fuel and lubricants group.

Adjustment of Other materials Component (Excluding bitumen, steel and cement)

Price adjustment for increase or decrease in cost of local materials other than cement, steel, bitumen and POL procured by the contractor shall be paid in accordance with the following formula:

$Vm = 0.85 \times Pm / 100 \times R \times (M_1 - M_0)/M_0$

Vm = Increase or decrease in the cost of work during the month under consideration due to changes in rates for local materials other than cement, steel, bitumen and POL.

M_1= The all India wholesale price index (all commodities) on 28 days preceding the date of opening of Bids, as published by the Ministry of Industrial Development, Government of India, New Delhi.

M_0= The all India wholesale price index (all commodities) for the month under consideration as published by Ministry of Industrial Development, Government of India, New Delhi.

Pm= Percentage of local material component (other than cement, steel, bitumen and POL of the work.

Percentage of Components

			For Civil Work	**For Electrical Work**
01.	Labour component	K_1	**30%**	**20%**
02.	Petrol / Oil and Lubricants Component	K_2	**02%**	**02%**
03.	Material Component	K_3	**68%**	**78%**
			100 %	**100 %**
04.	Bitumen Component (VG-30)	**Actual**		
05.	HYSD and mild steel Component	**Actual**		
06.	Cement Component	**Actual**		

Name of Work: Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

SCHEDULE - A (Civil Work)

Schedule showing (Approximately) the materials to be supplied from the Public Works Department stores for work contracted to be executed and preliminary and ancillary works and the rates at which they are to be charged for.

Sr. No.	Particulars	Quantity	Rates in Figures	Unit	Rates in Words	Place of Delivery / Amount
1	2	3	4	5	6	7
			NIL			

Note : ***1.*** *All materials such as Cement, Steel etcetera shall be procured by contractor at his own cost.*

Signature of Contractor **No. of Corrections** **Executive Enginer**

GOVERNMENT OF MAHARASHTRA
PUBLIC WORKS DEPARTMENT
ELECTRICAL DIVISION, CH. SAMBHAJINAGAR

SCHEDULE - A (Electrical Work)

Schedule showing (Approximately) the materials to be supplied from the Department stores for

NAME OF WORK: Est No. /2022-2023 Providing Electrical Installation Work in Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

Particulars	Quantities	Rate at which the material will be charged to the contractor		Place of Delivery
	Unit	In Fig.	In Words	
	*****	***NIL***	*****	

Note : The person or firm submitting tender should see that rates in the above Schedule are filled up by the Executive Engineer-in-charge on the issue of from prior to the.

Signature of Contractor **No. of Corrections** **Executive Enginer**

MANNER OF SUBMISSION OF TENDER AND ITS COMPANIMNTS

SPECIAL ATTENTION TO CONTRACTOR

As the contract includes works of Electrical installation with civil work, The Civil contractor not having the registration of carrying out above mentioned electrical and allied works shall have written Agreement executed before executive Magistrate with valid Class "A" and above Electrical Contractor registered with Maharashtra State Public Works Department or can sublet the respective electrical and allied works to the eligible class contractor the agreement should be made with concerned agencies till handling over of work and copy of the same should be enclosed in an Envelope No. 1. However the responsibility of whole work (Civil, Electrical & allied work) lies with the Civil Contractor only.

The Successful bidder shall submit Performance guarantee in the proforma attached in Envelope No. 1 and which will be binding for 3 years. Security Deposit in the form of Bank guarantee or fixed/call Deposit should be submitted which will be refundable after successful completion of comprehensive maintenance of three years after commissioning of installation/system.

ADDITIONAL CONDITIONS OF THE WORK

1. The Contractor shall get the list of make/brands approved by Executive Engineer, P. W. Electrical Division, DHARASHIV or any of his authorized representative well in advance before the execution of work.

2. The Contractor shall produce & submit original manufacture test certificate for the electrical item/ equipment to be used at site as mention in Schedule "B"

3. No deviation of Make/ Brands will be allowed subsequently.

4. The Contractor shall prepare Drawing as required by Electrical Inspector / Appropriate Authority from Fire Deptt. and get it approved before starting the work and get necessary certificate / NOC / Permission from concern authority, necessary Fees / charges if any shall be borne by the contractor.

5. After the completion of work the contractor shall get necessary final charging permission from Appropriate Authority from Fire Deptt / Electrical Inspector, before connecting the installation to license supply.

6. After the completion of work the contractor shall test the entire installation in the presence of Engineer in-charge or any of his authorized representatives and submit the test report.

7. If necessity, Tree cutting shall be done by contractor with necessary permission of concern authority Fees / charges if any shall be borne by the contractor.

8. The responsibility of safety of worker during the execution of work is solely on contractor. The contractor will have to follow all the safety rules during the execution of work ,the responsibility of compensation will be of the contractor .In any case , this dept. Will not responsible for any compensation.

9. During the execution of said work, the contractor shall take care of avoiding any traffic obstacle on site.

10. Arrangement for the curing of C C foundation muffing, brick masonry work etc shall be done by clean and soft water at site by the contractor at his own cost.

11. The contractor will have to use all required T & P while execution of work at his own cost.

12. The insurance labour / staff working at site shall be done by the contractor under the insurance actual his own cost.

Signature of Contractor **No. of Corrections** **Executive Enginer**

13. Any fees/charges/taxes or penalties towards payment of Government/semi government/local/ private bodies arising during the execution of work is to be borne by the contractor. No refund will be paid for this.
14. The Contractor should provide the demo and operational training to the operating staff, & have to keep Contractors Two Skilled personnel in the premises for One years.
15. The Contractor should arranged water , MSEB Supply arrangement for E.I. Fire Fighting & Fire Alarm commissioning and testing charges borne by contractor himself.
16. The Contractor should provide necessary MOCK DRILL for firefighting system as per fire norms during DLP Period.
17. The Successful Bidder, after completion of the work, should arrange to submit authorized contact person details vise Name, Mobile Number, email ID, etc, with EXECUTIVE ENGINEER (ELECTRICAL)P.W.D, DHARASHIV for day to day Complaints resolution regarding Fire fighting & Fire Alarm System.
18. The Scope of work includes supply, installation testing and commissioning & providing free fully comprehensive maintenance including all equipments, spares of system & consumables for the period of 12 months after commissioning the system.
19. Contractor shall produce manufactures certificate in regard with components specifications for all equipment's along with catalogs & manuals.
20. Free Replacement warranty/ Guaranty of defective equipment's for the period of 12 months after commissioning Internal Electrification & Fire Fighting System , and for Luminaries 36 months after commissioning the LED Fitting ,
21. Contractor shall visit the site & get himself thoroughly conversant with the actual site conditions before tendering. No extra item shall be admissible on this ground.
22. Contractor shall prepare the bar chart of activities submit it to engineer in charge & strictly follow the time schedule.
23. The system provided shall be complete in all respect inclusive of all components ancillaries to give the desired results & as per design parameters. All material supplied shall confirm the technical specifications
24. The Site shall be cleaned after completion to the satisfaction of Engineer in charge.
25. Electrical work shall comply CEA Regulations -2010 & other related statutory provisions.
21 .All other Bidding clauses Conditions and Clauses should be as per Civil PWD Bidding Documents

Scope of Work.

Scope of work covered under this tender shall be as mentioned but not limited to following.

1. Internal Electrification design, supply, installation, testing & commissioning.

2. The necessary permission along with the approved plans for electrical installation, be got approved from appropriate authority on completion of the works submitted to Engineer-in-charge.

3. The electrical supply for the other activities than those will have to be obtained separately from Electric supply company by the contractor.

1.0 PREFACE

All the Electric work shall be carried out as per,

i) The relevant Indian Standard formulated by Bureau of Indian standards, New Delhi.

ii) Indian Electricity Rules 1956 (Revised)

iii) National Electrical Code.

iv) Chapter 16 of P.W.D. Hand Book, Government of Maharashtra.

v) Bombay Lift Act. 1939/ Bombay Lift Rules, 1958.0

vi) Development Control Regulations.

vii) Development control Regulation of Maharashtra State and Rules of local bodies pertaining of E.I. works including fire alarm system, fire fighting system, public announcement system, lift etc.

1.1 Intent of Specifications.

This specification covers complete design, supply, installation, Testing & commissioning of total Electrical work. Scope of work covered under this tender shall include, design, supply of the necessary equipment installation, erection testing and commissioning of the system. All electrical work shall be carried out in accordance with these specifications. These specifications shall be read in conjunction with the relevant Indian standards, NEC India Electricity Rule, Chapter 16 of PWD Handbook and Development control rules of Government and local Authorities, the work shall be executed according to most stringent of these requirements.

1.2 **Standards**

The following standards shall be applicable:-

Specification for Electrical Installation

Sr. No.	Particulars	IS No.
1.	Electric Wiring shall be with copper wiring	732
2.	Protection such as M.C.B.M.C.C.B. & Breakers. Etc.	8828
3.	Switches	4949
4.	Electric fans	2997
5.	Exhaust fans for Kitchen or any smoke area/ bathroom/toilet	4283
6.	Electronic type fan Regulator	11037
7.	Electrical lamp and their anxieties	13021 part I & II
8.	Tubular Florescent Lamp	2418 Part I,II,&III
9.	Appliance Connected inlets	3010 Part I,II,&III
10.	Box for Enclosure of Electrical Accessories	5133
11.	Box for Enclosure ceiling rose	371
12.	Conduit for E.I.	9537 Part II,III,IV
13.	Plug and socket outlets per rated Voltage upto and including 250V. current 16A	1293
14.	Switch for domestic and similar purpose	3458
15.	Electric call bells and buzzers	2268
16.	Electric Water boilers	3412
17.	Code of practice of Earthing	3043
18.	Code or practice as per the projection of buildings and allied structures against lighting	2309
19.	Dangers notice plates	2555
20.	Guide for electrical layout in residential building	4648
21.	Chart on treatment for electric shock	sp35
22.	National Electrical code	sp30
23.	Warning symbol for dangerous voltages	8923
24.	AC Electric Meters.	722 part3,5,6,7
25.	Electric lighting fitting	4053
26.	Current transformer	2705 part 1 to 4
27.	Code or practice for selection installation and maintenance of switches and controller	100 8 part 1 to 4
28.	Power cable	
29.	1. Bus glands for PVC cable 2. Conductors for insulated electric cable and flexible cords	12943 8130

Sr. No.	Particulars	IS No.
	3. Cross linked polyethylene insulated PVC sheathed cable V. up to and including 1100 V	7089 Part I
	4. Cross linked polyethylene insulated PVC sheeted cable	70981 Part 2
	5. PVC insulated cables for wearing voltage up to and including 1100 V	694
30	6. PVC insulated (Heavy duty) electric	1554 Part I 2
31	cable voltage 1100 V	
32	Capacitors for Electric Fan Motor	1909
33	PVC casing, N capping of accessories	14927 Part I
34	Rigid PVC conduit	9537
35	Rigid PVC Conduit accessories	3410
36	Measuring instruments	1248
	Wet riser installation	34191248
37	Specification for CFL compact Fluorescent Lamps Code practice for Ventilation	IS 3666-1966
	Protection of Building and Allied structure against lighting code of practice	IS 1511 IS 2309-1989

WIRING ON SURFACE OF WALL/ CEILING

1. **Wiring in PVC casing capping.**

PVC casing n-capping type wiring to be adopted with its accessories such as T, bends elbows etc.

PVC casing -n-capping and its accessories shall be conform to IS 14927 Part-I. The rules of casing - n - capping on wall and ceiling should be approved prior to fixing, by Engineer-in-charge.

2. **Wiring of PVC conduit**

Conduit wiring system with rigid Non-metallic conduit to be fixed on wall and ceiling as per design requirements. The conduit shall conform to IS 9537 (part 3) and corresponding accessories shall conform to IS 3479 conduits shall be joined by means or compiling for long run, on junction inspection type couplers junction boxes shall be provided at intervals not exceeding junction.

BUNCHING OF INSULATED WIRES

1. Conductors for concealed and wiring on surface of wall ceiling in conduits shall be bunched. The number of insulated cables that may be drawn into single conduit is given in the following table. In this table the space factor should not exceed 40%.

Nominal cross section area Sq.mm	Size of conduit (milimeter) outside daimeter				
	20	25	32	38	50
	No. of cables Max.				
2.5	5	10	14	-	-
4.0	3	6	10	14	-
6	2	5	8	11	-
10	-	4	7	9	-
16	-	2	4	5	12
25	-	-	2	2	6
35	-	-	-	2	5
50	-	-	-	2	3

Design of wiring, mains shall be such that voltage drop shall be limited to 1% of the system voltage for single phase & 1.5& of the system voltage for motor load like pump lifts etc. and 2% of the system voltage for other three phase loads.

2. Conductors for surface wiring in casing - n - capping shall be restricted to occupy not more than 60% the space casing - n - capping on it fixing position on wall ceiling.

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List of Preferred Materials

Sr. No.	Item/ Category of Electricals	Make Brand Name
1	Swithches, Socket, Ceiling Rose Fan Regulators, Holder and accessories.	Anchor Roma, Legrand , Kolors, Schneider, Havells,Kalki,
2	Modular Switches, and accessories	Anchor Roma, Legrand , Kolors, Schneider, Havells,Kalki,
3	Wires	Havells, RR Kables, KEI, Grate white.
4	Cables	Havells, RR Kables,vishal, Kei, polycab
5	PVC Pipes and accessories	precision, Diamond, pressfit, anchor,Modi
6	PVC Casing Caping	precision, Diamond, pressfit, anchor,Modi
7	H.G.Conduit	GB, NIC
8	Water Heater	Bajaj, Recold, Havells
9	Swithch Gears (conventional)	L&T, Havells
10	MCB, MCBDB,MCCB,ACB	L&T, Schneider, Legrand, Havells
11	RCCB	L&T, Havells, HPL
12	Floor Mounting MCCB Panels	L&T, Havells, Standard, HPL
13	Indoor/Outdoor fitting (including LED Fitting)	Havells, Syska, wipro,RR, Crompton
14	Ceiling Fans	Havells, Crompton, Usha,RR,Orint,Almorand,
15	Ventilating/Exhaust Fans	Havells, Crompton, Usha,RR,Orint,Almorand,
16	Pumps	Crompton, CRI,KSB,
17	Octagonal/Conical/High mast ploes	Bajaj, Transrail, Volmont
18	APFC Panel	L&T, Shreem
19	Air Conditioning system	Blue Star, Voltas, Daikin Carrier
20	CAT6 Cable	D-link, KEI,DIGISOL,
21	Fire Fighting sprinkler main Pump, Stand by Pump, Jockey pump	Kirloskar/Lubi/M&P/CRI
22	M.S.c. Class Pipes (IS:1239)	Jindal/Prakash Surya/Apollo/TATA
23	Standard G.I. Fittings	Standard-Heavy Duty
24	MS/GI forged Steel Fittings	Standard-Heavy Duty
25	Paints	Asian Paints/Berger/Shalimar
26	Double /Single Headed	Kartar /Fire Shield/Newage/Micro/Shah

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Sr. No.	Item/ Category of Electricals	Make Brand Name
27	Landing Valve	Bhogilal/Essel
28	Fire Hose	New Age /Kartar//Rhino/FIRE Shield/Micro
29	First Aid Hose Reel	New Age /Kartar/Monsher/FIRE Shield/Micro
30	Branch pipe	Kartar /Newage/Micro/Essel/FIRESHIELD
31	Fireman Axe	Kartar /Newage/Micro/Essel/FIRESHIELD
32	Installation Control Value	Kartar /Newage/FIRESHIELD
33	Sprinkler Heads	Kartar /HD/Newage/FIRESHIELD
34	Fire Extinguishers	Kanex / FIRESHIELD/Safepro/Safety First/Minimax
35	Water Flow Switch/Detector	Honeywell/Apollo/System Sensor/Tyco
36	Wrapping Coating	Supreme / BTP /IWL/ Shalimar
37	Pipe Clamp & Supports	Hitech/Chilly
38	GM/Forged Brass Valves	Kartar /Leader/ Hammer/FIRE SHIELD
39	Sluice Valves	Kartar /IVC/Hammer/Kirloskar
40	Butterfly Valve	Kartar /Zoloto/Hammer/Aarko/IVC
41	Check Valve	Kartar /Zoloto/IVC/Hammer
42	Check Valve- Dual Plate	Kartar /Zoloto/IVC/Hammer
43	Pressure Reducing Valve (Listed)	HD/Kartar /Tyco
44	Air Release Valve	Newage/Kartar / FIRESHIELD
45	Ball Float Valve	Normax /Sheetal/Hammer/Aarko/Kirloskar/Kartar
46	Y Strainer	Sheetal/Zoloto/IVC/Hammer/Aarko/Kartar
47	Anti Vibration Mounting & Flexible	Dunlop/Easyflex
48	Pressure Guage	H /Guru/Syntific/Waree
49	MCC Panel	Fabricated with Internal Components-L&T/Siemens/Havells
50	Cable	Polycab/RR/Finolex/KEI/Rotoplast
51	Fire Alarm Panel	Honywell-Morley/Spencer/GST/Apollo/Ravel/Simplex
52	Beam Detector	Honywell-Morley/Spencer/GST/Apollo/Ravel/Simplex

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Sr. No.	Item/ Category of Electricals	Make Brand Name
53	Optical Smoke Detector	Honywell-Morley/Spencer/GST/Apollo/Ravel/Simplex
54	Hooter	Honywell-Morley/Spencer/GST/Apollo/Ravel/Simplex
55	Manual Call Point	Honywell-Morley/Spencer/GST/Apollo/Ravel/Simplex
56	Response Indicator	Agni/Ravel
57	LED type Signages	Prolight /Maxglow/Autoglow
58	Sprinkler Hose	Agelflex /Kartar/Newage/Paratech/FIRESHIELD / Tyco/Agni
59	Alarm Valve	HD/Kartar/Tyco
60	Heat Detector	Honywell-Morley/Spencer/GST/Apollo/Ravel/Simplex
61	Modules	Honywell-Morley/Spencer/GST/Apollo/Ravel/Simplex
62	Hose Cabinet	CRC Standard Fabricated

NOTE: Makes other than the above if not available in market, prior approval from engineer -in-change is essential and the make shall be either from the approved list by the Chief Engineer (Electrical), PWD, Mumbai or shall have ISI mark

MINIATURE CIRCUIT BREAKERS DISTRIBUTION BOARD:

Distribution boards along with the controlling MCB's / Fuse or isolator as shown shall be fixed in sheet steel enclosure suitable for recessed mounting in wall. Distribution boards shall be made of 16 SWG sheet steel duly rust inhibited through a process of degreasing acid prickling and spray painted to approved over a coat of red oxide primer.

Three phase boards shall have phase barriers and a wire channel on three sides Neutral bar shall be a solid tinned copper bar with tapped holes and chase headed screws. For 3 phase D independent neutral bars shall be provided.

All DB's shall be internally pre-wired using PVC insulated copper wires brought to a terminal strip of appropriate rating for out going feeders.

Conduit knockouts shall be provided as required / shown on drawings and the entire boards shall be rondered dusts and vermin proof with necessary rubber gaskets.

MCB's shall have quick make and break non welding self viping silver alloy contacts for 10KA short circuit both on the manual and automatic operation. Each pole of the breaker shall be provided with inverse time thermal over load and instantaneous over current tripping with trip free mechanism. IN case of multi pole breakers, the tripping must on all the poles and operating shall be common to IS - 8828.

Pressure clamp terminals for stranded / solid conductor insertions are acceptable up to 4 Sq.mm. Aluminium or 2.5 Sq.mm. copper and for higher ratings, the terminals shall be suitable shrouded wherever MCB isolators are specified they are without the tripping elements.

Fuses shall be HRC links Bolt type fuse are not acceptable fuse carrier terminals shall be suitable shrouded re-wireable fuse.

Distribution boards shall have HRC/ Rewirable fuses as shown on the schedule and drawing. Boards shall meet with the requirements of IS - 2675 and making arrangement of bus bars shall be in accordance with IS - 375 bus bars shall suitable for the in-comer switch rating and sized for temperature rise of 35 ^{0} C over the ambient. Each board shall have two separate earthing terminals. Circuit diagram indicating the load distribution shall be posted on the inside of the DB's as instructed one earthing terminal for single phase and two terminals for 3 phase DBs shall be provided with an earth-strip connecting the brass studs and the outgoing ECC earth bars.

In case of MCB distribution boards the backup fuses wherever shown shall be not less than 63 A. with delayed characteristic and a minimum pre arecing time of 0.5 sec. at 9 KV fault current.

All outgoing feeders shall terminate on a terminal strip which in turn in inter connected to the MCB / Fuse base by means of insulated single conductor copper wire as follow.

Upto 15 Amps. - 2.5 Sq.mm.
25 Amps. - 4.0 Sq.mm.
63 Amps. - 10 Sq.mm.

EARTHING :-

Earthing shall be done in accordance with IS 3043 of 1987

Systems of earthing :-

Equipment and portion of installations shall be deemed to be earthed only if earthed in accordance with the directed earthing system. In all case, the relevant provisions of 'Rules 33 and 61 of the Indian Electricity Rules 1956 shall be complied with.

EARTH ELEFTRODES

A. Type :- Earth plate electrodes shall be provided and they shall not be less than 60 centimetre X 60 centimetre X 60 millimetre copper as per clause 9.2 of IS - 3043.

B. Installation :- Electrodes shall as far as possible, be embedded below permanent moisture level. In addition, they shall be buried at a depth of not less than 3 metre complete installation shall be as per IS - 3043 and as per plate no. 4 of chapter 16 of PWD handbook.

C. Copper Earth Plate of 60 centimetre X 60 centimetre X 6 millimetre shall be buried in

Specifically prepared earthpit so as to keep top of earth plate 3 Metre below ground with 40 Kgs. charcoal and salt (with alternate layers of charcoal and salt) with 19 millimetre diameter GI pipe provided with funnel with a wire mesh for watering and brick masonry block. CI cover etc. complete as per Para 9 of IS 3043 of 1987. With necessary length of double copper earth strip of adequate size bloted with lug to the plate and covered in adequate size GI pipe 2.5 metre long complete connected to the switch gear with-end socket as per direction and duly tested by earth tester and recording results. Distance between two earth pits shall not be less than 6 metres i.e. double the depth of each Electrode.

General Rule Applying to All system :-

Ms. of Earthing Method of earthing :-

A) Connection of earthing conductors.

1. Main earthing copper strip shall be laid from the earth station provide in the sub station HT Equipment. VBC stabilizer, and Transformer shall be earthed in the sub station as per the provision of IS 3043 - 1987.

2. Main LT panel connection shall be taken from earth electrode provided near main L.T. panel room.

3. There will be copper stip of vertical riser from the earthpits independently provided for earthing of distribution floor panels located at different floors.

4. Interloping of sub panels to room DBS shall be done with PVC insulated copper conductor of appropriate size.

B) Cable sheathing and armouring -

These shall be earthed at the ends adjacent to switch boards at which they originate or other wise at the commencement of the run by an earthing conductor connected to an earthclip, clamp or gland ineffective electrical contract with cable sheathing and armoring.

Earthing conductor :-

Every earthing conductor shall be either stranded strips or circular or rectangular bar. Protection against mechanical injury shall be provided where necessary. The earth conductor may be of high conductivity copper. The sizes of earthing conductors shall correspond to the load current as given below. Size of earth conductor from main switchboard to sub main switches or DBS.

Cross sectional area of Current carrying conductor Copper (Sq.mm)	Cross sectional area of current carrying Conductor copper	
	(Sq.mm.)	(Sq.mm.)
4	4	12
6	4	12
10	6	10
16	10	8
25	16	8
35	16	8
50	25	6
70	35	2
95	50	20 x 3mm
120	70	25 x 3mm

Size of earth conductors of plug sockets for the use of portable appliances.

Cross sectional area of Current carrying conductor Copper / Aluminium (Sq.mm.)	Cross sectional area of current carrying Conductor copper (SWG)
2.5	14
4	12
6	12

Cables :- Design aspect-load, length, Voltage drop

Switchgears :- Protection - rating S.C. rating nominal rating, back up etc. MCB/ MCCB / ELCB / RCCB. The contract includes 3 years comprehensive maintenance period for Electrical Installation after completion of the work.

The maintenance schedule are as below

MAINTENANCE SCHEDULE

E. I. & FANS, LIGHTINGS.

DAILY CHECK

1. Ensure installation is always kept clean and in healthy and working condition.
2. Attend complaints promptly and in satisfactory manner.
3. Ensure no breakdown in power supply. In case of breakdown, take prompt steps including contacting supply company for early restoration.
4. Carrying out minor alterations and additions as per directions of Engineer -in- charge (Material will be supplied by department.)
5. Replacement of lamps & tubes (Lamps and tubes will be provided by the user department.)

MONTHLY

1. Work out material requirement for prompt maintenance.
2. Inspect and tighten MB, DDB, rising mains for loose connections.
3. Watering of earthing pits.

HALFYEARLY

1. Measure the earth resistance of all earthing stations and ensure that all equipments are properly earthen i.e. there are no loose joints.
2. Measure & record insulation Resistance of installation including MB's, DB & Rising Mains.

YEARLY

1. Painting and sign writing of streetlight poles and feeder pillars.

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Scope of Work :-

1. Stand by arrangement for maintenance shall have to be done by the contractor in case of any BANDH OR STRIKE OR MAJOOR BREAKDOWN so as the get an uninterrupted service.
2. If any part of the complete system is modified or altered with change in design / concept the contractor for the Executive Engineer will terminate that particular item / full. In case of fatal or non fatal accident occurred to the workers during erection and maintenance of system, the Department will not be liable to pay for any compensation and its is duty of contractor to observe all labour Acts and Rules.

WORKING PROCEDURE

1. All complaint calls shall have to be attended by contractors workers within reasonable time and with fastest possible speed but in any case, it shall not be extended beyond 24 hours.
2. Log Book has to be maintained by the contractor at site in consultation with the site Engineer.
3. Inspection :- Inspection not with completion reports shall have to be maintained in duplicate by the contractor mentioning all work details and to be signed by contractors representatives and site-in-charge by handing over one copy to site in charge.
4. Periodicity within monthly shall have to be made with respect to work order schedule for regular servicing and inspection and repair if any required.
5. The Contractor shall preferably obtain the signature of Engineer-in-charge after attending the break down calls and inspection / servicing and all work should be carried out with knowledge to in-charges.
6. Daily comprehensive contract covers work of replacement of unserviceable/ defective operational parts, moving parts switchgears related in the system, control cables and switchgears etc.
7. The contractor has to maintain cleanliness towards respective system, sufficient safety, ethics and politeness in behavior by him, staff.

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DAILY COMPREHENSIVE CONTRACT COVERS :-

1. Work of repair of replacement of unserviceable operational parts or moving parts such as motor, car rope to be governed, gear box, pulley contact relays, switchgears etc.
2. Replacement of consumable items such as bulbs, fuses, control cables, lugs, locks with keys etc, & also lubricants, service materials.
3. Replacement of gear box oil periodically with test result.
4. Cleaning of all necessary parts periodically with help of required materials with respect to method of construction / servicing to be decided with Engineer-in-charge checking of system and alignment and overhauling.
5. Complete installation, machine room lift pit etc. shall be maintained neat and in clean manner every day.
6. Painting shall be done once in a year for complete machinery including moving and not moving parts.
7. Rewinding of motor and all its preventive maintenance.
8. Monthly regular servicing and inspection shall be carried out.

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SPECIAL CONDITIONS OF CONTRACT FOR

FIRE FIGHTING

1. The **"Special Conditions of Contract"** are as per standards of "PWD" Maharashtra State.

   The special conditions of contract shall be read in conjunction with the general conditions of contract, Schedule of Quantities, Technical Specifications, Drawings and other documents relating to the work and shall have preference over laid down general conditions.

1.0 GENERAL

1.1 Entire Fire Fighting system work shall be carried out in strict compliance with specifications give ninth esection'Additional Technical Specifications'.

1.2 Work shall be executed by the Licensed Agency as mandated in Maharashtra Fire Prevention & Life Safety Measure Act, 2006 & Rules framed under this act.

1.3 Not with standing the sub-division of the documents into these separate sections and volumes, every part of each section shall be deemed to be supplementary and complementary to every other part and shall be read with and into the contract, so far asit may be practicable to do so.

1.4 Contractors shall mobilize and employ sufficient resources to achieve the detailed schedule within the broad frame work of the accepted methods of working and safety. The Contractor shall provide everything necessary for the proper carrying out of the work, including tools, plants and other materials.

1.5 No additional payment will be made to the Contractor for any multiple shift work or other incentive methods contemplated by him In his work schedule seven though the time schedule is approved by the Engineer-in-charge.

1.6 The work shall be executed as per the program drawn or approved by the Engineer-in-charge and it shall be so arranged as to have full coordination with any other agency employed at site. No claim for idle labour shall be entertained nor shall any claim on account of the delay in the completion of the building work to betenable except extension of time secured by the Contractor as stated elsewhere. After the issue of Work Order the Contractor will have to start the installation work of piping for Sprinklers with necessary supports immediately for facilitating the completion of False Ceiling work of the building. The Contract or will have to supply the essential materials required for above job on urgent priority basis as per the decision of Engineer-in-charge.

1.7 The Contractor shall permit free access and afford normal facilities and usual conveniences to other agencies or departmental workmen to carry out connected work or other work services under separate arrangements. The Contractor will not be allowed any extra payment on this account.

1.8 All soil, filth or other matter of any offensive nature taken out of any trench, sewer drain, cesspool or other place sall not be deposited on the surface, but shall at once be carted away by the Contractor free of charge to a suitable pit or place to be provided by him.

1.9 The Contractor shall provide all equipment, instruments, labour and such other assistance required by the Engineer-in-Charge for measurement of the work, materials etc.

2. SCOPE OF WORK

The scope includes carrying out the fire protection system with Wet riser, Court Yard Hydrant ring, Hose reels, etc., as per the provisions mentioned in the Provisional Fire NOC issued by the appropriate authority.

2.1 Fire Hydrant system

2.1.1 Fire Sprinkler System

2.3 Fire Extinguishers

3.0 SITE CONDITIONS

The Contractor shall make him self aquatinted with all conditions and situations existing at the site.The rate quoted by the Contractor shall take into account all such factors and no extra shall be payable on any account, especially on the pleath at the Contract or was not a ware of any particular situation or conditions.

4.0 BY-LAWS AND REGULATIONS

The installation shall be in conformity with the Bye-laws and Regulations of the local authority concerned in so far as these be come applicable to the installation but if these specifications and drawings call for higher standard of materials and or workman ship than those required by any of the above regulations and standards, then the specifications and drawings shall take precedence over the said regulations and standards. However if the drawings or specifications require something which violates the bye laws and regulations, then said by e-laws and regulations shall govern the requirements of this installation.

5.0 ASSOCIATED ELECTRICAL WORKS

Following Electrical work associated with Fire fighting work is excluded from the scope of Fire fighting Contractor. These works shall be executed by Department.

i. Power supply with earthing at the incoming of main fire control panel.

6.0 FEES, PERMIT AND TESTS

The Engineer-in-Charge shall have fullpowers regarding the materials or work got tested by independent agency at the Contractor's expense in order to prove their soundness and adequacy.

7.0 MATERIALS

All materials, equipments, fittings and fixtures used in this work shall conform to the Indian Standards. All material shall be new, sound and robust in construction and well finished. Surplus material after completion of work shall be taken back by the Contractor and the cost shall be recovered if the advance payment has been made earlier by the Engineer-in-Charge.

Unless otherwise stated in the conditions of contract, samples of all materials to be supplied by the Contractor shall be submitted to the Engineer-in-charge for his approval. The Contractor shall not commence the work until the samples are approved, in writing from the Engineer-in-charge. The Contractor shall ensure that all the materials incorporated in the work are identical in all respects with the approved sample. All samples not destroyed intesting shall be returned to the Contractor after completion of contract. No payment shall be made for samples destroyed intesting.

8.0 DRAWINGS

The drawings, specifications and bill of quantities shall be considered as apart of this contract. Anywork or materials shown on the drawings but not included in the schedule of quantities or viceversa, shall be executed as if specifically called for in the drawings indicate the extent and general arrangement of various equipment and their piping etc. and are essentially diagrammatic. The work shall be installed if found essential to coordinate the installation of this work with other trades shall be made without any additional cost to the Owner. The data given herein and on the drawings is for the assistance and guidance of the Contractor, the exact locations, distances and levels will be governed by the space conditions. The Contractor shall be responsible to check exact location of sprinklers, wet riser, hose reels & boxes, etc

8.1 All the shop drawings shall be prepared on computer through Auto CAD System based on Architectural Drawings, site measurements and Interior Designer's Drawings within four weeks of the award of the contract, Contractor shall furnish, for the approval of the Engineer-in- charge, two sets of detailed shop drawings of all equipment and materials including layouts for Pump room, Sprinkler piping layout; electrical panels inside/outside views, power and control wiring schematics, cable trays, supports and terminations. These shop drawings shall contain all information required to complete the Project as per specifications and as required by the Engineer-in-charge/Consultant/Owner's site representative. These Drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity of all items of equipment ,also the details of all related items of work by other Contractors. Each shop drawing shall contain tabulation of all measurable items of equipment/materials/works and progressive cumulative totals from other related drawings to arrive at a variation-in-quantity statement at the completion of all shop drawings. Minimum 3 sets of drawings shall be submitted after final approval along with CD.

When the engineer-in-charge makes any amendment in the above drawings, the Contractor shall supply two fresh sets of drawings with the amendments duly incorporated along with check prints,for approval. The Contractor shall submit further six sets of shop drawings to the Owner's site representative for the exclusive use by the Owner's site representative and all other agencies. No material or equipment may be delivered or installed at the job site until the Contractor has in his possession, the approved shop drawing for the particular material/equipment/installation.

8.2 Shop drawings shall be submitted for approval four weeks in advance of planned delivery and installation of any material to allow Engineer-in-charge/Consultant ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to his failure to produce shop drawings at the right time, in accordance with the approved program.

8.3 Manufacturers drawings, catalogues, pamphlets and other documents submitted for approval shall be in four sets. Each item in each set shall be properly labeled, indicating the specific services for which material or equipment is to be used, giving reference to the governing section and clause number and clearly identifying in ink the items and the operating characteristics. Data of general nature shall not be accepted.

8.4 Samples of all materials like valves, pipes, sprinkler heads, etc shall be submitted to the Owner's site representative prior to procurement. These will be submitted in two sets for approval and retention by Owner's site representative and shall be kept in the site office for reference and verification till the completion of the Project.Wherever directed amockup orsample installation shall be carried out for approval before proceeding for further installation.

8.5 Approval of working drawings shall not be considered as a guarantee of measurements or of building dimensions. Where drawings are approved, said approval does not mean that the drawings supersede the contract requirements, nor does it in anyway relieve the Contractor of the responsibility or requirement to furnish material and perform work as required by the contract.

8.6 Where the Contract or proposes to use an item of equipment, other than that specified or detailed on the drawings, which requires any redesign of the structure, partitions, foundation, piping, wiring or any other part of the mechanical, electrical or Architectural layouts; all such re-design, and all new drawings and detailing required therefore, shall be prepared by the Contract or at his own expense and gotten approved by the Engineer-in-charge/Consultant/ Owner's site representative. Any delay on such account shall be at the cost of and consequence of the Contractor.

8.7 Contractor shall prepare coordinated services shop drawings based on the drawings prepared by Electrical, HVAC & Low Voltage Contractors to ensure adequate clearances are available for installation of services for each trade Where the work of the Contractor has to be installed in close proximity to, or will interfere with work of other trades, he shall assist in working out space conditions to make a satisfactory adjustment. If so directed by the Owner's site representative, the Contractor shall prepare composite working drawings and sections at a suitable scale, not less than1:50, clearly showing how his work is to be installed in relation to the work of other trades. If the Contractor installs his work before coordinating with other trades, or so as to cause any interference with work ofother trades, he shall make all the necessary changes without extra cost to the Owner.

8.8 Within four weeks of approval of all the relevant shop drawings, the Contractor shall submit four copies of a comprehensive variation in quantity statement, and itemized price list of recommended (by manufacturers) imported and local spare parts and tools, covering all equipment and materials in this contract. The Project Manager shall make recommendation to Owner for acceptance of anticipated variation in contract amounts and also advise Owner to initiate action for procurement of spare parts and tools at the completion of project.

9.0 CLARIFICATIONS OF DISCREPANCIES

In case of any discrepancy between specifications and drawings etc. furnished by the Engineer-in- charge or disputes in respect thereof, the interpretation of Engineer-in-charge shall be final and binding.

10.0 WORK AND WORK MANSHIP

The work shall be of the highest standard, and conformed to the technical specifications both as regard its design and workmanship. Modern tools and first class, latest techniques shall be employed for its execution.

Any damage done to the building during the execution of work shall be responsibility of the Contractor and it shall be made good by him,at his cost,to the entire satisfaction of the Engineer-in- charge.

All work shall be executed by skilled workers under the direct supervision of whole time, fully qualified Engineers and Supervisors. The Contractor shall produce requisite evidence regarding the qualification s of his Engineers, Supervisors and other workers.

The work shall have to be coordinated with the building work and other allied jobs/trades to the entire satisfaction of Engineer-in-Charge.

11.0 WORKING DRAWINGS

The shop drawings shall be prepared based on latest Architectural layout, in complete coordination with other services. Initially 2 sets of working drawings shall be submitted alongwith1 soft copy for approval of Engineer-in-charge and the consultant. Upon obtaining approval on 1 set of working drawings, Contractor shall produce 6 sets of working drawings for final approval and for issue to all concerned.

12.0 PERFORMANCE GUARANTEE

After executing the work as per scope, the responsibility for the performance of entire Fire fighting system as per the provision mentioned in Provisional Fire NOC issued by MIDC authorities shall ie with the Contractor including for performance of individual equipment installed by him.

13.0 FINAL FIRE NOC

Contractor shall be responsible for obtaining the Final Fire NOC and relevant documents from the appropriate authority.

MAKE LIST FOR ELECTRICAL WORKS		
Sr. No.	ITEM	STANDARD MAKE
1	TRANSFORMER-CSS	ABB/SCHNEIDER ELECTRIC / SIEMENS / C&S
2	H.T.VCB/PANEL	ABB/SCHNEIDER ELECTRIC / SIEMENS / C&S
3	PROTECTION RELAY FOR H. PANEL	ABB/SCHNEIDER ELECTRIC / SIEMENS / C&S
4	H.T.XLPE CABLE	UNIVERSAL/MSEB/FINOLEX / HAVELLS / KEI / POLYCAB
5	H.T.JOINT (HEAT SHRINKABLE)	RAYCHEM / XICON / 3-M
6	LT PANELS	CPRI/ERDA APPROVED PANEL BUILDER. 65 KA SHORT CIRCUIT WITHSTHAND STRINGTH. OEM APPROVED. SWATI SWICH GEAR / SHIV SAKTI/A.D.ENTERPRIES/HI-TECH
7	DISTRIBUTION BOARDS	LEGRAN / SCHNIEDER/HAGER/L&T/C& S
8	MEDIUM VOLTAGE CABLE	FINOLEX/RRKABLE/KEI/HAVELLS/ POLYCAB
9	CONTROL CABLE	FINOLEX/RRKABLE/KEI/HAVELLS/ ALIPLAST/POLYCAB
10	LT ACB	SIEMENS/SCHNEIDER/L&T/C&S
11	LT MCCB	LEGRAND/SIEMENS/SCHNEIDER ELECTRIC/L&T/C&S
12	LT MCB, ELCB	LEGRAND/SIEMENS/SCHNEIDER ELECTRIC/L&T/C&S
13	LT SFU	LEGRAND/SIEMENS/SCHNEIDER ELECTRIC/L&T/C&S
14	LT CONTACTORS	LEGRAND/SIEMENS/SCHNEIDER ELECTRIC/L&T/C&S
15	CHANGE OVER SWITCH	HPL/SOCOMEC/INDOASIAN/L&T/C &S
16	METERS (DIGITAL)	CONZERVE/SCHNEIDER/SECURE/L &T
17	LOAD MANAGER	ENERCON/CONZERVE/SCHNEIDER/ L&T
18	RELAYS-EARTH FAULT	SIEMENS/GE/L&/C&S/SCHNEIDER /MINILEC
19	INDICATING LAMP	SIEMENS/SCHNEIDERELECTRIC/L& T/TEKNIC-KEYCEE
20	ELECTRIC TIMER	SIEMENS/L&T/LEGRAND/CONSERV E/RUSHABH ENTERPRISE

Signature of Contractor **No. of Corrections** **Executive Enginer**

21	ROTARY SWITCH	SIEMENS/SCHNEIDER ELECTRIC/TEKNIC-KEYCEE/SALZER/L&T
22	PUSH BUTTON AND PUSH BUTTON SET	SCHNEIDER ELECTRIC/L&T/BINAY/RAAS CONTORL
23	SELECTOR SWITCH	TEKNIC-KEYCEE/SALZER/L&T
24	ANNUNCIATOR	PROTION/EAPL/TEKNIKA/MINILEC
25	LUGS/BIMETALLIC LUGS	DOWELL'S/HMI/COMET
26	CABLE GLAND	JAINSON/COMET/POLYCAB
27	CONNECTORS (COLOURS AS PER PHASE & NEUTRAL	SALZER/ELEMEX
28	DG SET WITH AMF PANEL	STERLING & WILSON/CUMMINS (SUDHIR)/CATERPILLAR
29	SYNCHRONIZATION RELAY	STUCKE/WOODWARD
30	CAPACITOR	EPCOS/SCHNEIDER/L&T/ABB
31	PVC CONDUITS AND ACCESSORIES	PRECISION/NIHIR/POLYCAB
32	CASING CAPING	PRECISION/NIHIR/POLYCAB
33	MODULAR SWITCHEES, SOCKETS & OTHER ACCESSORIES	MK-BLENZ/LEGRAND-ARTEOR/HAVELLS-CRABTREE-ATHENA
34	KEY TAG PANEL WITH CONTROL SWITCH	MK/LEGRAND
35	PVC JUNCTION BOX	SINTEX/CLIPSAL/NIHIR/PRECISION /POLYCAB
36	WIRES FOR INTERNAL WIRING	FINOLEX/RRKABLE/HAVELLS/POLY CAB
37	COAXIAL TV CABLE	DELTION/HAVELLS/RR/FINOLEX/P OLYCAB
38	LIGHT FIXTURES-INTERNAL	CG/WIPRO/LIGHTING CONTROLS/K LITE MODEL SHALL AS PER APPROVED BY ARCHITECH, CONSULTANT & CLIENT.
39	LIGHT FIXTURES-ENTERNAL	NERI/Hess/Bega/SCHRIDER MODEL SHALL AS PER APPROVED BY ARCHITECT, CONSULTANT & CLIENT.
40	CEILING FAN / EXHAUST FAN	CROMPTON/HAVELLS/ORIENT/USH A
41	FIBER OPTIC PATCH CABLE AND PANEL	AMP (Formerly TYCO) /Panduit (Pan-net)/Systemax
42	CAT 6 /RJ45/CAT6 JACK PANEL	AMP (Formerly TYCO) /Panduit (Pan-net)/Systemax
43	POLE	Neri/Hess/Bega

Signature of Contractor **No. of Corrections** **Executive Enginer**

44	HVAC	DAIKIN/MISTUBISHI/HITACHI
45	EARTHING	OBO BETTERMANN
46	CCTV SYSTEM	Germen, TELCO, BOSCH
47	EPBX SYSTEM	PANASONIC,ALCATEL,AVAYAL,MES

Special Note :-	
1	Client have right to check the challans of supplier.
2	The MCB and MCB DB s must be of same make.
3	Approve all the make of material from Client before execution.
4	The client reserve the right to select the manufacture or approved make from the above list. No change to be permitted in this make during execution contract.
5	Any make not mentioned in the above lists must be approved from Client before execution.
6	All the material should be ISI and as per standards mentioned in specifications and BOQ.
7	In case of shortage of material or un-time delivery or change in model prior approval from client and consultant required.

Signature of Contractor **No. of Corrections** **Executive Enginer**

ELECTRICAL MAKE LIST
LIST OF APROVED MATERIALS ON SITE

SR. NO.	ITEMS	MAKE/BRANDS
1	PVC Rigid. Conduits/PVC Trunking (Casing-n-Capping	Pressift/Modi/Diamond
2	PVC Copper wires FR/FRLS grade	KEI/Polycab/Havels/Finolex/RR Kale
3	MCB (All Poles), ELCB (All Poles), RCCB (All Poles), MCCB Distribution boards,	Schneider electric/Siemes/Havells/L&T/legard
4	ACB, MCCB (All poles), MCCB Distribution boards,	L&T/Siemens/Legrand/Schneider/Indosian (optipro)/C&S/HPL
5	VCB	L&T/ABB/Crompton Greaves/Legrand/Schneider,
6	Fluorescent/T-8, T- 5, Fitting, Bulb and Tube.	Bajaj/Wipro/Philips/Cromton/
7	LED Surface/Recessed type indoor fitting & Outdoor Fittings.	Bajaj/Wipro/Philips/Cromton/
8	Ceiling Fans, Exhaust Fan, Bracket Fan, Wall mounting Fans, Regulators	Crompton Greaves/Orien/RR/Bajaj/Usha
9	Wiring accessories :- Modular type switches, sockets, ceiling rose and accessories.	Anchor Roma/Wipro/legrand
10	Fluorescent tubes MF/GF Lamp	Philips/Bajaj/Crompton/Greaves/Osram
11	LT PVC / XLPE armoured aluminum/copper cables	Polycab/KEI/Finolex/RR Kable/Unicab/Apar/KEC/Gloster
12	HT Cables	Polycab/KEI/Finolex/RR Kable/Unicab/Apar/KEC/Gloster

Signature of Contractor **No. of Corrections** **Executive Enginer**

13	HT Cables Termination	Raychem/M seal/3M
14	Lugs	Dowells/Comment/Hex.
15	HT Switchgear	L&T/Siemens/ABB/ Crompton Greaves/Schneider,
16	Transformers	United/Rajesh/HRT/silverline/Rakesh/PVN/Kalki/Tru pti power/Telawane
17	DG SET	Cummins/kirloskar/cater piller/ Sterlling/Mahindra
18	UPS	Emerson.Neowatt/Hitachi/Delta/C&S/Eaton
19	Sandwich Bus bar system	Siemens/Schneider/C&S/L&T/Godrej
20	LT Power Contractor s	Siemens/Schneider/ABB/L&T
21	Capacitors	L&T/Shreem/Subodhan
22	Data Cable (CAT-6), Fibre Optic Cable	AMP/Systimax/Molex/R&M/D-Link.
23	Telephone Cable	Polycab/Havells/Finolex/Anchor/HPL
24	LT Panel	CPRI Approved panel Manufacturer
25	Cable Trays	Profab/Indiana/Lcon
26	Water Pump	Kirloskar Brothers/CRI/Lubi/Crompton
27	Networking components' & accessories.	Cisco/HP/Netgear/D-Link
28	I/O, Jack Panel, Patch Cord, Face Plate	AMP/Systimax/Molex/R&M/D-Link
29	Octagonal / Conical GI Poles	Bajaj/Volmont/Transrail
30	Energy Meters	Havells/L&T/HPL all MSEDCL Tested.
31	Lifts/elevators	Schindler. OTIS, Kone, Johnson Lifts
32	CCTV Items	Axis, Samsung, Bosch, Dahua,
33	Street Lights LED/Flood lights	Phillips, Bajaj, Crompton, Havells
34	Water Cooler	Voltas, Bluester, Usha
35	Solar PV Pannels MONO Crystline	All Panels of Mono type –Jinko, Longi, Trina, Canadian solar, LG
36	Batteries of Invertor /UPS	Exide IT series, Amara Raja
37	Solar PV Invertor, Ongrid type	SMA, DELTA, ABB, GROWATT, FRONIUS, HUA WEI
38	Solar DC Cables	LAPP
39	RMU	Schneider Electric, ABB, Crompton, C&S
40	APFC Panels	CPRI Approved
41	Fire Fighting equipments and Pumps and Accessories	

Note : Makes other than the above if required are not acceptable, even approval given by chief Engineer (Electrical) Mumbai approved material is not accepted. Kindly note this point while tendering.
Only above material as per list/table is allowed.

Signature of Contractor **No. of Corrections** **Executive Enginer**

List of Preferred Makes		
SN	**Item Particulars**	**Preferred Make**
1	LED Panel light, LED Tube Light	Philips, Crompton, Havells, Wipro, Canopus Solutions Pvt. Ltd.,
2	Networking Rack & accessories	Valrack, iball, DLink, Cisco
3	PVC Insulated Copper Wires & / XLPE insulated 1.1KV grade Cables	Super Cable Industries, Polycab wires Pvt. Ltd., Rajnigandha Cables, Epsillon Cables Pvt Ltd., Vikas Cables, KEI, Dynamic Cables Pvt. Ltd., Ketan Enterprises, Chandresh cables Pvt. Ltd., Gloster Cables Ltd., RR Kable Ltd., Polycab, Finolex, Anchor, Havells, Electrolite
4	PVC Conduits / Casing N Capping	MODI'S, CROWN, Precision, Anchor, Press fit, Diamond, Modi, Diamond, AkG, Polycab, Asian.
5	Modular Type Switches / Socket / MCBBoards	HI-FI, Vinay, PRESSFIT, KALKI, Great White Anchor Legrand, L&T, Havells or Great white, Siemens, Gold Metal, Schneider electric, Indoasian
6	Switchgears - MCB's /MCCB's / MCB-DB's / RCCBO's,Motor Starters,ACBs etc.	L&T, Schneider electric, Anchor, Legrand, Standard Siemens, Crompton Greaves, Indoasian
7	Air Circulator, Ceiling fan, Pedestal Fan,Exhaust Fan	Crompton, Almonard, Electromech, Orient, Havells
8	Co-axial low voltage RG-6 Cable	Polycab, Finolex, RR Kabels, Anchor, Havells, KEI safelex, century
9	All types of UTP networking Cat-6 & Telephone Cable,	Finolex, RR Kabels, Havells, D-Link, Polycab

Signature of Contractor **No. of Corrections** **Executive Enginer**

List of Preferred Makes		
SN	**Item Particulars**	**Preferred Make**
	fiber optic cables etc.	
10	All types of Networking switches	D'link, Cisco,
11	All types of Sandwich rising busbars from200 A to 1250 A capacity, Tapoff box, allaccessories	Godrej, Legrand, L & T, Schneider, C&S, Standard
12	CCTV camera	Bosch, Sony, Samsung, CP plus, Hikvision, AVtron, Panasonic, Honeywell
13	Multistage Fire Hydrant Pumps, Jockey Pumps, Booster Pumps	Kirloskar, Crompton Greaves, Mather platt, KSB
14	All types of G.I. pipes	Jindal, TATA, Zenith, Vimco
15	All types of CO2 fire Extinguishers, ABC powder type fire Extinguisher	Cease fire, Safex, minimax, flamex, Bhartifire, supermax
16	Sprinkler bulb	Tyco, HD fire, New Age, Viking
17	HG conduit	GB, AKG
18	Wireless Addressable FDAS with izedMonitoring Station & allied accessories	Honeywell, Ravel

List of Preferred Makes		
SN	**Item Particulars**	**Preferred Make**
19	UPS & Battery	UPS – APC, Emerson, Eton,Socomec BATTERY - Excide, Rocket, Quanta, Standard Farkwa-SF, Amaron
20	BF / Sluice / gate /ball / NRV Valves	Kirloskar, Audco, Zoloto, Sant MR, Hamer, Leader
21	Voltmeter, Ammeter Selector Switch	Kaycee, L&T, Siemens, Meco, Trinity
22	Pressure Transducer	Indfoss, Danfoss
23	Pressure Guages	H Guru, Fiebig, pricol
24	Lift	Kone, Johnson, Thysenkrupp, Schindler
25	Octagonal Pole, High Mast Pole	ULTRA ENGINEERS, VALMONT, TRANSRAIL
26	HDPE pipe	SY-ARON, Gemini
27	Earthing Pits	U - PROTEC EARTHING
28	AC unit	Daikin, Carrier, Voltas
29	Cable tray	PENTAX
30	Solar	Space solar, Tata, Racold Thermo Limited, Green Field Material Handling Pvt. Ltd., Borosil Glass Works Limited.

Signature of Contractor **No. of Corrections** **Executive Enginer**

List of Preferred Makes		
SN	**Item Particulars**	**Preferred Make**
31	Speaker / amplifier	Bosch, Ahuja,Philips, DNM
32	Antena / Phone	Polycab, Finolex, RR, Delton
33	DVD player	Philips, Pioneer, LG, Sony, Samsung
34	Tag block	Krone, malson
35	Smoke & heat detectors, hooters, flashers	Notifier, morley, siemens, appolo, Zicom, EST,
36	Fire Alarm System	Honeywell, Zicom, Siemens, Jhonson, EST,
37	Water level control	minilec, RDS, Accent
38	PA	Bosch, Ahuja
39	Panic switch	Zicom, Securicon
40	Diesel Generator	Kirlosker, Powerica, CG, Mahendra

SPECIFICATION FOR ELECTRIC WORKS

Specification No (WG-MA/CON)
Scope
PVC Trunking:
Providing specified PVC Trunking (Casing capping) and erecting as per approved Method of Construction on surface of wall/ Ceiling, etc. including entries made with PVC conduit through walls/slabs/flooring as per requirement with all necessary hardware, accessories such as inner/ outer Elbows, Tees boxes, etc. and duly finishing, removing debris from site.

Material:
PVC Trunking (Casing Capping)
PVC Trunking (Casing Capping) ISI mark, 1.2 mm thick, minimum 20 mm width and above depending on No. of wires to be drawn (Refer Table No 1/3 for the size of trunking and number of wires to be drawn); with double locking arrangement 1.8mm thick push-fit joints/accessories for PVC trunking such as couplers, elbows, internal /external angles, junction boxes of required ways of the same make.

Hardware:
Sheet Metal (SM) screws of sizes specified in Method of Construction, washers, raw!/ PVC/fill type plugs, wooden gutties, etc.

Method of Construction:
Erection of PVC Trunking for surface type wiring:
Erection Shall be done as per the final approved layout. The Trunking shall be in perfect level and plumb. Screws of minimum 35x8 mm and suitable plugs shall be used for fixing. In case of stonewalls wooden gutties shall be grouted in wall for fixing of screws of Trunking. Distance between 2 screws shall not more than 600 mm. size of Trunking shall be correct depending on number of wires to be drawn as per Table No 1/3 but not less than 20mm. Separate trunkng shall be used for each phase in single phase distribution and for power and light distribution and also for wiring of other utilities like data, telephone. TV cabling and distance of 300mm shall be maintained between the Trunking or an!; electrostatic partition to be provided. Double locking shall be checked while fixing capping Adequate use of accessories shall be made at joints and at required locations.

Specification No (WG-MA/BW)
Scope
Bunch of wires:
Providing specified wires and drawing them through provided conduits/Trunking and / or as directed; with coded ferrules, harnessing the bunch of wires with necessary material when used in panel boards, duly connecting / terminating with lugs, and testing for safety and beneficial use.

Material:
Wires: in Conduits /Trunking /Panel /Boards
Mains /Sub-mains /Circuit mains (Comprising phase and neutral wires);
PVC insulated wire of specified size, minimum FR Grade insulation, copper conductor of electrolytic tough pitch (ETP) grade, having insulation of 1.1 kV grade, ISI marked, of required colour coding as per Table No 1/5.

Wires: Open
PVC insulated and PVC sheathed wire of specified size minimum FR grade insulation, copper conductor of electrolytic tough pitch (ETP) grade, having insulation of 1.1 KV grade, ISI marked, of required colour coding as per Table No 1/5.

Earth Continuity Wire:
PVC insulated wire minimum FR grade insulation copper conductor of electrolytic grade, having insulation of 1.1 KV grade of green / yellow colour, ISI marked of specified size but not less than 2.5 Sqmm as per Table No 1/5.
Lugs: Copper lugs of appropriate size & type
Other material : Rubber grommet, bush, harnessing material, flexible conduit etc. 3age 9 of 189

Method of Construction:
Bunch of Wires:
Drawing of wires : General
Specified wires shall be drawn with adequate care. Correct colour coding as per Table No. 1/5, shall be used for phase, neutral and earth. Wires shall not have intermediate joint in between terminals of the accessories. Earth-wire and Return wire (neutral) may be looped only within circuit. For lighting load or single-phase distribution wires of two different phases shall not be drawn irvsingle pipe. Wires shall be terminated in the terminals of accessories only, with appropriate type and size of lugs.

Drawing of wires : through PVC conduits
Bush shall be used at pipe opening to protect wire insulation from getting damaged due to sharp edges. Number of wires shall not exceed with respect to size of pipe as per Table No. 1/2.

Drawing of wires : through Rigid Steel conduits
Bush shall be used at pipe opening to protect wire insulation from getting damaged due to burrs/sharp edges. Number of wires shall not exceed with respect to size of pipe as per Table No. 1/1.

Open Wire Bunch : Open wires shall be erected with due care so as to avoid chances of any mechanical injury. Harnessing shall be done with required material in an approved manner in panel boards or where ever necessary. For covering lead wires flexible conduit shall be used with gland as per necessity.
Testing:

Insulation resistance test:
All wiring shall be tested with 500 V Megger between phases, phase-neutral and to Earth. IR value shall not be less than 1M-ohm.
Earth continuity:
Earth continuity shall be ensured between termination points of Earth wire.
Polarity Test: Test shall be carried out for ensuring the correct polarity in switch and plug.
Mode of Measurement :
Measurement shall be carried out on the basis per running meter length of single wire or such as specified.

Specification No. (WG-MA/PC)
Scope:
Mains in surface PVC conduit:
Providing specified PVC conduits, wires and erecting the conduits as per approved Method of Construction; on surface of wall/ceiling etc. including entries through walls/labs/flooring as per requirement, and with all necessary hardware, accessories such as spacers, Saddles, Bends, Tees, Junction boxes, check-nuts/glands, etc.; making conduits erection work rigid; and drawing the specified wires through these conduits and duly connecting/terminating with lugs, complete finishing, removing debris from site testing for safety and beneficial use.

Material:

PVC Conduit:

PVC pipe of minimum 20 mm dia. and above depending on No. of wires to be drawn (refer table No 1/2); ISI mark, HMS grade (2 mm thick), accessories for PVC pipes of the same make that of pipe; such as Spacers & Saddles, Couplers, Bends, inspection or non inspection type Elbows, Tees, Junction boxes of required ways and resin/adhesive to make all joints rigid. Black pipe shall not be used for surface type wiring.

Hardware:

Sheet Metal (SM) screws of sizes specified in Method of Construction, washers, raw!/ PVC/fill type plugs, wooden gutties, etc.

Wires: Mains 7 Sub-mains/Circuit mains (comprising phase and neutral wires)

PVC insulated wire of specified size, minimum FR Grade insulation, copper conductor of electrolytic tough pitch (ETP) grade, having insulation of 1.1 kV grade, ISI marked, of appropriate colour coding as per Table No 1/5.

Earth Continuity Wire:

PVC insulated wire minimum FR Grade insulation, copper conductor of electrolytic grade, having insulation of 1.1 kV grade, of green or green yellow colour, ISI marked, of ISI marked, of specified size but not less than 2.5 Sqmm as per Table No 1/5.

Lugs: Copper lugs of appropriate type & size.

Other material : Rubber grommet, bush, flexible PVC conduit, gland etc.

Method of Construction:

General:

Erection Shall be done as per the final approved layout. in perfect level and plumb. Conduits shall be firmly fixed on spacers with saddles. Fixing of spacers shall be equidistant and at ends, bends, elbows, junction boxes, couplings, boards. CSK screws of minimum 35x8 mm and suitable plugs shall be used for fixing spacers and 12x5 mm, round headed screws for fixing saddles on spacers. In case of stonewalls wooden gutties shall be grouted in wall for fixing of spacers. Distance between 2 spacers shall not more than 600 mm. size of conduit shall be correct depending on number of wires to be drawn (as per Table No Vz for PVC conduits). Separate pipe shall be used for each phase in 1-ph distribution and for power and light distribution. Also for wiring of other utilities like data, telephone. TV cabling and distance between pipes shall not be less than 300mm or anti electrostatic partition is to be provided. Adequate use of conduit accessories shall be made at required locations. Entries in wall shall be at level of surface conduit with colour coding (For Visual identification) as per Table No. 1/4. Flexible conduits shall be used at expansion joints.

Especially for PVC conduits of surface type wiring:

In addition to general instructions above, all joints shall be made rigid with resin/adhesive. Wherever offsets are necessary, it shall be done with bending spring. Size of conduit shall be as per Table No. 1/2 for number of wires to be drawn through the conduit.

Drawing of wires: General

Wires shall be drawn with adequate care. Correct colour coding as per Table No. 1/5, shall be used for phase, neutral and earth. Wires shall not have intermediate joint in between terminals of the accessories. Earth-wire and Return wire (neutral) may be looped only within circuit. For lighting load or single-phase distribution wires of two different phases shall not be drawn in single pipe. Lead wires of sufficient extra length shall be provided ana shall be terminated in the terminals of accessories only, with appropriate type and size of lugs.

Drawing of Wires : through PVC conduits for surface type wiring

Insulated Earth wire of green of green-Yellow colour of minimum 2.5 Sqmm or as per specified shall be drawn through conduit. Number of wires shall not exceed with respect to size of pipe as per Table No. 1/2. At the termination end flexible PVC conduit shall be used with gland as per required.

Specification No (WG-PW/SW)
Scope:
Point wiring (Surface type):
Providing all required approved specified material including hardware and erecting wiring on surface of wall, ceiling from switch board to outlet for light/fan/bell/independent plug point, in rigid steel/PVC conduit or PVC truning as specified; fixing one board with a 1 way switch for one way point or two boards with a 2 way switch on each board, in case of 2 way point; for controlling power supply and one board/block with accessory for outlet of light/fan/plug and terminating wires within as per approved Method of Construction; removing all debris and testing the installation for safety and beneficial use.

Material:
Point wiring (Surface)

PVC conduit:
PVC pipe of minimum 20 mm dia. and above depending on No. of wires to be drawn (refer table No 1/2); ISI mark, HMS grade (2 mm thick), accessories for PVC pipes of the same make that of pipe; such as Spacers & Saddles, Couplers, Bends, inspection or non inspection type Elbows, Tees, Junction boxes of required ways and resin/adhesive to make all joints rigid. Black pipe shall not be used for surface type wiring.

PVC Trunking :
PVC Trunking (Casing Capping) ISI mark, 1.2 mm thick, minimum 20 mm width and above depending on No. of wires to be drawn (Refer Table No 1/2 for the size of trunking and number of wires to be drawn); with double locking arrangement, 1.8mm thick push-fit joints/accessories for PVC trunking such as couplers, elbows, internal /external angles, junction boxes of required ways of the same make.
Rigid Steel Conduit:
Rigid steel screwed conduit minimum 20 mm dia. and higher depending on No. of wires to be drawn as per Table No. 1/1, 16 gauge, ISI mark, ERW grade duly processed for antirust treatment and painted with black enamel paint, accessories for rigid steel conduit such as 5 mm thick 20 mm width spacers and G.I. saddles for individual pipe or GI strip for bunch of pipes, sockets, inspection type or normal; open bends, junction boxes of required ways all of the same make.
Wires: Phase and Neutral
PVC insulated wires of specified size, 1.1 kV, & minimum FR grade insulation, electrolytic tough pitch (ETP) copper conductor, ISI marked, of required colour coding as per Table No 1/5.
Earth Wire:
PVC insulated minimum FR grade copper wires of electrolytic grade, having insulation of 1.1 kV grade, of green/green-yellow colour, ISI marked, 2.5 Sqmm or bare copper wire of 14g
Accessories:
Switch: 1 or 2 way Piano type 6/10 A, 1 or 2 way Modular type switch 6/10A
Outlet : 6A angle/batten lamp holder or 3 plate ceiling-rose or Bakelite/porcelain three way connector or if plug point, 6A, 3-pin plug socket.
Boards:
Switchboards shall be double walled (back and front) of suitable size, to accommodate independent slot for each switch, socket, fan regulator. Boards shall be made up of 4 mm thick marine grade plywood for back and front fixed on wooden frame with 0.8 mm thick laminate pasted on exposed portion of front ply, totally varnished and with either brass hinged door or screwed top.
Or
As above with 3 mm thick Bakelite/Hylam top instead of laminated front ply.
Or
Board made from Filled polypropylen.
Round/Square double wooden block or PVC board for mounting light/fan outlet accessory.
Hardware:

Sheet Metal (SM) screws of sizes specified in Method of Construction, washers, raw!/ PVC/fill type plugs, wooden gutties, PVC/rubber bushings etc.

Method of Construction:

Point wiring (Surface)

Erection of Conduits:

General:

Erection Shall be done as per the final approved layout, in perfect level and plumb. Conduits shall be duly screwed and firmly fixed on spacers with saddles. Fixing of spacers shall be equidistant and at ends, bends, elbows, junction boxes, couplings, boards. CSK screws of minimum 35x8 mm and suitable plugs shall be used for fixing spacers and 12x5 mm, round headed for fixing saddles on spacers. In case of stonewalls wooden gutties shall be grouted in wall for fixing of spacers and saddles. Distance between 2 spacers shall not more than 600 mm. Separate pipe shall be used for each phase in 1-ph distribution and for power and light distribution. Also for wiring of other utilities like data, telephone, TV cabling and distance between pipes shall not be less than 300mm. Adequate use of conduit accessories shall be made at required locations. Entries in wall shall be at level of surface conduit with colour coding (For Visual identification) as per Table No. 1/4. Flexible conduits shall be used at expansion joints. Bushing shall be provided at open ends.

Erection of Conduits:

PVC pipes for surface type wiring:

In addition to General conditions above, all joints shall be made rigid with resin/adhesive. Wherever offsets are necessary, same shall be done with bending spring. Size of conduit shall be correct depending on number of wires to be drawn as per Table No. 1/2.

Or

Specialty for Rigid steel conduit of surface type wiring:

In addition to general conditions above, size of conduit shall be correct depending on number of wires to be drawn (as per Table No. 1/1 for steel conduits). All exposed threaded portion of Rigid Steel Conduits shall be painted with anti corrosive paint. Sharp edges and burr at cut ends shall be made smooth. Inspection type conduits or withdrawing of wires. All conduits piping work shall be properly earthed with 2.5 sq. mm G.I. Earth wire fixed to conduit and made continuous with Earth clips at every 1 m and at ends and joints viz. bends, junction boxes.

Or

Erection of PVC Truning for surface type wiring:

Erection Shall be done as per the final approved layout. The Trunking shall be in perfect level and plumb. Screws of minimum 35x8 mm and suitable plugs shall be used for fixing. In case of unleveled surface number and size of screws shall be changed to higher size as per requirement and in case of stonewalls wooden gutties shall be grouted in wall for fixing of screws of Trunking. Distance between 2 screws shall not be more than 600 mm. size of Trunking shall be correct depending on number of wires to be drawn as per Table No 1/3 but not less than 20mm. Separate trunkng shall be used for each phase in 1-ph distribution and for power and light distribution and also for wiring of other utilities like data, telephone, TV cabling and distance of 300mm shall be maintained between the Trunking. Double locking shall be checked while fixing capping. Adequate use of accessories shall be made at joints and at required locations.

Drawing of wires: General

Wires shall be drawn with adequate care. Correct colour coding as per Table No. 1/5, shall be used for phase, neutral and earth. Wires shall not have intermediate joint in between terminals of the accessories. Earth-wire and Return wire (neutral) may be looped within circuit. For lighting load distribution wires of two different phases shall not be drawn in single pipe. Wire shall be terminated in the terminals of accessories only. Insulated Earth wire of green or green-Yellow colour of minimum 2.5 Sqmm or as per specified shall be erected wherever necessary in case of 2-way point wiring additional wires of phase conductor shall be provided between the 2-way switches.

Drawing of Wires : through PVC conduits for surface type wiring

Insulated Earth wire of green of green-Yellow colour of minimum 2.5 Sqmm shall be drawn through pipe. Number of wires shall not exceed with respect to size of pipe as per Table No. 1/2.

Or

Drawing of wires : through Rigid Steel conduits for surface type wiring
Bush shall be used at pipe opening to protect wire insulation from getting damaged due to burrs/sharp edges. Number of wires shall not exceed with respect to size of pipe as per Table No. 1/1.
Or
Erecting wires in Trunking:
Wires shall be erected within Truning with adequate care. Number of wires shall not exceed with respect to size of Truning as per Table No. 1/3. After erection of wires double locking shall be checked while fixing capping.
Fixing Switchboards and accessories:
Control switchboards shall generally be erected at 1.35m height or as specified and fixed with minimum 2 Nos. (and more as per size of board) of screws of lenght not less than 50 mm, termination of wires shall be done with lugs on switch and other accessories only by carefully inserting all strands in lugs, terminals and proper tightening. Switches shall be provided on phase wire only. Bare wire shall not be used for looping incoming supply to switches and for earthing inside switchboards. For plug socket phase wire shall be connected in right side terminal when seen from front. Proper termination of earth wire in Earth terminal shall be ensured.

Testing:
Insulation resistance test:
All wiring shall be tested with 500V Meggar between phases, phase-neutral and to Earth IR value shall not be less 1M-ohm.
Earth Continuity:
earth continuity shall be ensured at all earth terminal of plug outlets and at earth terminals of metal enclosures.
Molarity test:
Molarity test shall be carried out for ensuing the correct polarity in switch and plug.
Aode of Measurement:
Measurement shall be carried out on the basis per number of points **for the point length up to 6 metre between switch and outlet.** For the length exceeding 6 metre 10% of overall rate shall be added for every 1M.
Specification No (FG-IDF/BHF)
Supplying and erecting bulkhead fitting with fine finished cast Aluminium enamel painted body with 20 mm conduit entry and clear glass / prismatic glass with guard and complete water tight hinged with locking screw porcelain holder to house CFL up to 79/11 Watt erected in position on polished double wooed block.
Material:
Bulkhead fitting:
Bulk Head Fitting shall be made from pressure dia-cast aluminium LM6 body in stove enamel finish and fitted with a heat resistant elegant glass cover through a gasket. A vo pin BC porcelain holder for GLS or a CFL holder shall be fitted inside the housing. In electro-galvanized MS wire guard for protection against pilferage. Glass and wire guard assembly shall be hinged to body for ease of maintenance. The bulkhead shall be suitable for Integral type CFL with cable entry through one no. 3/4" B.S threaded inlet Incoming Wires shall be terminated on the lamp holder terminals in case of GLS and in the terminal block in The of CFL Two lugs with slots for facilitating wall/ceiling mounting. The fitting shall be LP.4 Protected.
Vooden board: As per **(WG-PW/PW)** 1.6 specified in chapter for point wiring hardware Sheet Metal (SM) screws, washers plugs / wooden gutties etc. Method of Construction;
ne Bulkhead shall be mounted on polish double wooden, plugs/wooden block with required size of <M screws, duly wired. code of Measurement Executed quantity shall be counted on number basis. (i.e.each)
Specification No **(FG-IDF/ML2)**
Supplying and erecting Mirror light fitting with 1x 9 Watts CFL, with necessary Choke & Accessories complete elected on polished wooden/ sunmica block.

Material:
Fitting
Channel fabricated from CRCA MS sheet and finished in reflector white inside and outside Pre-wired with vacuum pressure impregnated copper ballast lamp holder and mains connector, and an aesthetically appealing serrated/reeded opal diffuser in position by decorative end covers white (W)/deep blue (B)/orange (O)/H.C. (G), post office red (R)/Black (BK) or approved colour, 12 mm dia. grommet. Two 5 mm dia. holes on the rear side of the channel to facilitate wall/ceiling mounting.
Vooden Board : As per 1.6 specified in chapter for Point wiring (WG-PW/PW)
Hardware : Sheet metal (SM) screws, washers, plugs/wooden gutties etc.
Connection wire : Two core flexible standard copper wire cord 24/0.2 mm ISI marked
Terminal connector: As per (FG-FG/AS10) specified in chapter 2.4.

Method of Construction:
The fitting shall be mounted on polished wooden/Laminated 4 mm plywood top required size of screws with necessary flexible wire for connection.
Mode of Measurement: Executed quantity shall be counted on number basis, (i.e. inch)

Specification No. (FG-IDF/DL1)
Supplying and erecting circular type recessed down lighter suitable for 2x18 watts L including gear box. The luminarie comprises a ceiling ring spun from Aluminium cached to mounting unit made of mild steel. The mounting unit has a pair of sliding packets for fixing the luminaire to the ceiling.

Material:
Fitting:
Scientifically designed highly polished & anodized Aluminum reflector ensures precise light control with optimum light utilisation, leading to substantial savingsin energy cost and excellent ambient conditions. Reflector is fitted into the frame with decorative screw arrangement. Frame is fabricated from CRCA MS sheet and epoxy powder coated white. Precoated frame ensure corrosion free life. Fitting shall have a prismatic acrylic diffuser resting on upper part of reflector to reduce glare. Retaining clips facilitate mounting in false ceilings.

Ballast: As per (FG-FG/AS1) specified in chapter 2.4.
Bi-pin lamp holder : Conforming to IS: 3323/80 with amendment No. 1 to the extent possible/applicable.
Capacitor/Condenser : As per (FG-FG/AS7) specified in chapter 2.4.
Connection wire : Flat/round Two core flexible standard copper wire cord 24/0.2 mm ISI marked
Terminal Connector : As per (FG-FG/AS10) specified in chapter 2.4.

Method of Construction:
The fitting shall be fixed firmly in the designated place (False ceiling/unspecified ceiling) with the help of swinging bracket, and making the connection.
In case where fittings are to be installed flush with/on false ceiling; layout shall be given to civil wing and work shall be done in co-ordination with civil wing e.g. making recesses in false ceiling.
Mode of Measurement: Executed quantity shall be counted on number basis, (i.e. each)

Specification No. (FG-IDF/BFF)
Supplying & erecting white stove enamelled/powder coated box type fluorescent fitting suitable for T 8 tube/tubes, with specified ballast, and necessary accessories, duly wired up for use on 250 V AC, supply and erected if required on varnished wooden/PVC block with flexible wire, twin core 24/0.20 mm. and with necessary materials complete and marking Sr. No. and date of erection.

Material:
Fitting:
White stove enameled/powder coated box type fluorescent fitting suitable for T8 tube, made of CRCA sheet not less than 0.5 mm thick, painted white on the reflector side and gray/any other colour (specified by the Engineer in-charge) on other surface. Wire ways shall be smooth & free from sharp edges, burrs, flashes & like which might cause abrasion of the insulation of the wiring. Parts such as metal set screws shall not protrude into wire ways. Fitting shall be duly wired up internally with appropriate size of wire. (Refer drawing no IDF-1 (Fig.1))
Ballast: As per (FG-FG/AS2)/(FG-FG/AS3)/(FG-FG/AS4) specified in chapter 2.40
Tube holders : As per (FG-FG/AS8) specified in chapter 2.4
Starter : As per **(FG-FG/AS11)** specified in chapter 2.4
Condenser : As per **(FG-FG/AS7)** specified in chapter 2.4
Starter Holder : As per (FG-FG/AS9) specified in chapter 2.4
Terminal Connector : As per (FG-FG/AS10) specified in chapter 2.4
Connection wire : Flat / round Two core flexible standard copper wire cord 24/0.2 mm ISI marked.
Paint : Superior quality enamel paint of specified colour.
Hardware : Sheet metal (SM) screws, washers, plugs/wooden gutties, etc.
Chain : Heavy duty lacquered MS chain with hooks.
Down Rod : Steel conduit as per (WG-MA/CON) specified in chapter for Point wiring.
Block : As per 1.6 specified in chapter for Point wiring (WG-PW/PW)
Method of Construction:
The complete fitting with all the above accessories shall be fixed on wooden/PVC block with SM screws (minimum size shall be 25 x 8 mm). The wooden/PVC block shall be fixed on wall/ceiling with SM screws (minimum size shall be 75x8 mm) with necessary-plugs, gutties, etc. S.No. and date of erection shall be painted/marked by enamel paint. The fitting shall be connected with PVC insulated copper wire leads, to the point and testing shall be carried out.
Mode of Measurement: Executed quantity shall be counted on number basis, (i.e. each)

Specification No (FG-IDF/CBF)
Supplying & erecting white stove enameled/powder coated Chalk board type fluorescent fitting with enameled reflector of 0.8 mm thick, white on the reflector side and gray on other surface suitable for T 8 tube/tubes, with specified ballast, and necessary accessories, duly wired up for use on 250 V AC, supply including material required for erection and erecting as per requirement complete and marking Sr. No. and date of erection.
Material:
Fitting:
White stove enameled/powder coated chalk board type fluorescent fitting suitable for T8 tube, made of CRCA sheet not less than 0.5 mm thick, with enameled reflector of 0.8 mm thick, painted white on the reflector side and gray on other surface. Wire ways shall be smooth & free from sharp edges, burrs, flashes & like which might cause abrasion of the insulation of the wiring. Parts such as metal set screws shall not protrude into wire ways. Fitting shall be duly wired up internally with appropriate size of wire. (Refer drawing no IDF-1 (Fig.2))
Ballast: As per (FG-FG/AS2)/(FG-FG/AS3)/(FG-FG/AS4) specified in chapter 2.4
Tube holders : As per (FG-FG/AS8) specified in chapter 2.4
Starter : As per **(FG-FG/AS11)** specified in chapter 2.4
Condenser : As per **(FG-FG/AS7)** specified in chapter 2.4
Starter Holder : As per (FG-FG/AS9) specified in chapter 2.4
Terminal Connector : As per (FG-FG/AS10) specified in chapter 2.4
Connection wire : Flat / round Two core flexible standard copper wire cord 24/0.2 mm ISI marked.
Paint : Superior quality enamel paint of specified colour.
Hardware : Sheet metal (SM) screws, washers, plugs/wooden gutties, etc.
Block/Board : As per 1.6 specified in chapter for Point wiring (WG-PW/PW)

Method of Construction:
The complete fitting with all the above accessories shall be fixed on wooden/PVC block with SM screws (minimum size shall be 25 x 8 mm). The wooden/PVC block shall be fixed on wall/ceiling with SM screws (minimum size shall be 75x8 mm) with necessary-plugs, gutties, etc. S.No. and date of erection shall be painted/marked by enamel paint. The fitting shall be connected PVC copper wire leads, to the point and testing shall be carried out.
Mode of Measurement: Executed quantity shall be counted on number basis, (i.e. each)

Specification No. (FG-IDF/INF)
Supplying & erecting white stove enameled/powder coated industrial type fluorescent fitting with enameled reflector of 0.8 mm thick, white on the reflector side and gray on other surface suitable for T 8 tube/tubes, with specified ballast, and necessary accessories, duly wired up for use on 250 V AC, supply including material required for erection and erecting as per requirement complete and marking Sr. No. and date of erection.

Material:
Fitting:
White stove enameled/powder coated industrial type fluorescent fitting suitable for T8 tube, made of CRCA sheet not less than 0.5 mm thick, with enameled reflector of 0.8 mm thick, painted white on the reflector side and gray on other surface. Wire ways shall be smooth & free from sharp edges, burrs, flashes & like which might cause abrasion of the insulation of the wiring. Parts such as metal set screws shall not protrude into wire ways. Fitting shall be duly wired up internally with appropriate size of wire. (Refer drawing no IDF-1 (Fig.3))

Ballast: As per (FG-FG/AS2)/(FG-FG/AS3)/(FG-FG/AS4) specified in chapter 2.4
Tube holders : As per (FG-FG/AS8) specified in chapter 2.4
Starter : As per **(FG-FG/AS11)** specified in chapter 2.4
Condenser : As per **(FG-FG/AS7)** specified in chapter 2.4
Starter Holder : As per (FG-FG/AS9) specified in chapter 2.4
Connection wire : Flat / round Two core flexible standard copper wire cord 24/0.2 mm ISI marked.

Paint : Superior quality enamel paint of specified colour for marking.
Hardware : Sheet metal (SM) screws, washers, plugs/wooden gutties, etc.
Block: As per 1.6 specified in chapter for Point wiring (WG-PW/PW)
Terminal Connector : As per (FG-FG/AS10) specified in chapter 2.4

Method of Construction:
The complete fitting with all the above accessories duly wired up shall be fixed on block with SM screws (minimum size shall be 25 x 8 mm). The block shall be fixed on wall/ceiling with SM screws (minimum size shall be 75x8 mm) with necessary-plugs, gutties, etc. The fitting if, to be ceiling suspended, it shall be fixed to the provided 16 SWG 20 mm dia., HG conduit duly threaded in ball suspension plate. The provided ball suspension plate shall be fixed on block with SM screws (minimum size shall be 25x8mm) and the block shall be fixed at ceiling with SM screws (minimum size shall be 75x8mm) with necessary plugs, gutties, etc. S.No. and date of erection shall be painted/marked by enamel paint. The fitting shall be connected with PVC insulated copper wire leads, to the point and testing shall be carried out.
Mode of Measurement: Executed quantity shall be counted on number basis, (i.e. each)

Specification No. (FG-BKT/WB)
Fabrication of Street light bracket of specified diameter 'B' class G.I. pipe, 1.2 m in length erected on wall for erection of side entry WP fluorescent/CFL/MV/MH/SV fittings(s), duly painted with one coat of red oxide & one coat of Aluminum paint, and duly connected to supply with PVC wire leads.

Material:
GI Pipe: GI pipe of specified diameter as per (CW-PLB/GP) mentioned in chapter 17.5
Hardware: Grouting MS belts, nuts of 10 mm dia. & 100 mm length. "U" shaped clamps of suitable diameter made of GI.
MS Flat: MS flat 3 mm thick 50 mm wide
Paint : Red oxide & Aluminium paint.
Wire leads : 1.5 mm 2, as per (WG-MA/BW) mentioned in chapter 1.3
Miscellaneous: Cement, Sand, Water etc.
Method of Construction:
The bracket fabricated as per drawing No BKT 1 (Fig.2) shall be erected on wall as explained below.
MS flat of length 15 cm with 10 mm diameter hole shall be welded to the pipe as shown in drawing.
Grouting bolts shall be grouted in wall and finished with cement plaster.
Bracket shall be placed on the grouted bolts with clamps and nut shall be tightened.
Fitting shall then be inserted onto the bracket and connections shall be made.
Mode of Measurement: Executed quantity shall be counted on number basis, (i.e. each)
Specification No. (FG-FN/CF)
Supplying and erecting ceiling fan of specified sweep with all accessories and necessary materials, erected in provided hook/clamp. **Material :** ceiling **Fan:** Electric ceiling fan capacitor type with double ball bearing complete with capacitor, 300 mm down rod, canopies, shakles, reel insulator, half threaded bolts of 9.53 mm (3/8") dia 62.5 mm (2-1/2") to 88 mm (3-1/2") long and 7.94 mm (5/16") dia 44.5 mm (1-3/4") to 57 mm (2-1/4") long with nuts, with lock type split pin, spring & plate washers, etc. three number blade made of Aluminium alloy, suitable for single phase, AC 210 volts, 50 Hz supply and conforming to class I of IS : 374/1979 wtih amendment no 1 to 6 except for performance parameters to the extent modified as details in general requirements. The down rod shall be capable to withstand a tensile load of 1000 kg without breakdown and a torsion load of 500 kg cm without breakage as per Clause 10.14.1 of IS: 374/1979 with amendment no. 1 to 6 Electrical motor should be single phase permanent capacitor type with no. of poles 12/14/16/18 (As per sweep), Class-I with basic insulation. Class of insulation shall be B class. The winding wire used for fan should be synthetic enamelled of 30 to 38 SWG.
Connection wire: Flat/round Two core flexible standard copper wire cord 24/0.2 mm ISI marked.
Paint : Superior quality enamel paint of specified colour for marking Sr. No. and date of rection

Table 2.6/1
Performance Parameters for Fans suitable for Rated Voltage

Sr. No.	Sweep	Maximum input Power in watts	Air delivery in m^3/minute	Minimum Service Value
			at Rated Voltage	at 180 V
1	900 mm	42	140	3.4
2	1200 mm	50	215	4.3
3	1400 mm	60	270	4.5

Method Construction:
Blades of ceiling fan shall be properly fixed. Down rod, clamp shall be carefully fixed with nut bolt and split pin. Canopies shall be tightened on down rod keeping sufficient clearance. Wiring connections shall be made with required wire leads. Regulator of fan shall be erected on provided switchboard with required wire leads.

Testing:
After erection fan shall be tested by connecting to supply at all positions of regulator. Also steadiness of fan shall be checked at full speed, so that there is no wobbling.
Mode of Measurement: Executed quantity shall be counted on number basis, (i.e. each)

Specification No (AF-WCR/WC)
Supplying, erecting testing and commissioning self contained water cooler with specified storage capacity & cooling capacity, and marking S No and date of erection.

Material Water Cooler:
The water cooler shall be suitable for operation on 230 V +/-10% 50 Hz single phase AC supply with hermetically sealed type suction cooled compressor with overload orotection conforming to IS:- 10617 (part1) : 1983 with amendment No 1&2.

Tank:
Tank shall be fabricated from SS sheet of 0.8 mm min thickness as per ISI 304 and shall be made by electrically seam welded lap joints or alternatively from 0.63 mm thickness stainless steel sheet with PUF insulation, with required number of Taps. However tank fabricated by double seam jointing is also acceptable if the same is reinforced and sealed by lead free solder material. Use of lead soldering material for sealing the joints of water tank is not permitted. Water tank cover and lid bottom shall be made of 1.25 mm aluminium sheet duly anodized/epoxy painted/high impact polystyrene (HIP) of 1.5 mm thickness. Positive locking of the lead is to be provided (lock with two keys). A drain valve at the bottom of the storage tank to be provided to draw out water while cleaning.
Cabinet (Body):
The cabinet of the water cooler shall be made of GS or SS sheet of 1.0 mm. The front panel, below the water outlets in the storage type water coolers shall be made of stainless steel of 0.8 mm. The drain pan for storage type water coolers shall be made of stainless steel sheet of 0.63 mm upto size 40 liters/hour and beyond 40 liters/hour of 0.8 mm thickness. The bottom pedestal shall be made of 2.65 mm minimum thick stainless steel sheet. Pedestal shall have a minimum ground clearance of 100 mm for ease of cleaning. Pedestai shall be strong enough to withstand weight with storage tank full and shall be reinforced to prevent skewing. The body shall be held securely with the pedestal with stainless steel nuts and bolts. The drain size should be 25 mm or above. In case water outlets are provided on three sides then all the three lower panels should be made of aluminium sheet or stainless steel sheet.
The mild steel components used in the manufacture of the cabinet shall be individually degreased, pickled, scrubbed and rinsed to remove grease, rust scale or any other foreign elements. Immediately after pickling the MS parts shall be given phosphate treatment. The Components along with the front panels shall then be given a primer coat with a finish coat of stove with a finish coat of stove enamel paint. The finish shall be smooth and uniform with hard tough film of the enamel adhering to the surface. The finish shall be free from all the visible defects and shall not chip when tapped lightly with a dull pointed instrument. Alternatively rr 3thod of corrosion protection like plastic powder coating, electrostatic painting shall be permitted Refrigeration coils to be fully soldered to the outside of the tank for good thermal contact and not merely tack welded.
There shall not be any gap between water tank cover (mask) and water tank to prevent rodent/insect dust entry.
water tank overflow should be adequately covered with strainer such as wire mesh etc to avoid rodent/insect/dust entry.
Condenser Fan Motor: The condenser fan motor shall be capacitor start and capacitor run (CSR) or permanently split capacitor (PSC) or alternatively permanently lubricated motor may be provided.
Thermostat: The thermostat shall conform to IS: 11338-1985. The position of the thermostat shall be adjustable through a rotary switch mounted on the front or side panels. Min and max of the thermostat setting shall be from 0 degree Celsius and 25 degree Celsius which shall be marked.

Method Construction:
The water cooler shall be fixed at designated place or as directed by the site engineer, duly connected with inlet and drain by leak proof joints. The water cooler is to be erected on stand and tested.
Mode of Measurement: Executed quantity shall be counted on number basis, (i.e each)

Specification No (SW-SWR/MCB)
Supplying MCB of specified poles, current rating, and either of B or C series with required wiring connections & lugs etc and erecting in provided enclosure /distribution board General Specifications for MCB' s

MCB's shall be of current limiting type, ISI marked confirms to IS 8828-1996 The power loss per pole shall be low and shall be in accordance with IS 8828-1996.

All cable entries shall be either from bottom or top.

MCB's shall be of C- curve characteristic & shall have quick make & break non-welding self wiping silver alloy contacts for 10 ka short circuit both on the manual & automatic operation.

All the active live parts of MCB's should be out of human reach ensuring safety & confirms to IP: 55 degree of protection The MCB's must house transparent label holder to ensure circuit identification.

The MCB's shall have fully insulated safety shutters. page 95 of 189

The Minimum electrical endurance shall be 20,000 operations.

The housing of the MCB shall be mounted self-exitinguishing DMC (Dough Moulding Compound) The short circuit Current shall be brought to zero within 4 to 5 milliseconds from the time they are established.

All MCB's shall a minimum short circuit Capacity of 10 ka RMS Material:
single Pole /Single pole with Neutral**/ Double Pole Triple Pole /Four pole:**
MCB,ISI marked as per IS 8828: 196 (IEC 60898) with hammer trip and watch nechanism 15 arc plates, 10 ka capacity with nominal rating of 240/415V.
Lugs: Copper lugs of suitable size as per **(CB-CUCU)** in chapter 7.10 for Cable
Method of Construction:
MCB shall be erected in provided enclosure/distributing board and terminating the provided wires by copper lugs (Crimping type) and connecting the same.
Mode of Measurement: Executed quantity shall be counted on number basis,(i.e. each)

Specification No (SW-SWR/RCBDB)
Supplying of MCBDB suitable for 230 V /415 V, horizontal/vertical, with/without door of specified ways (poles) surface/flush mounting to house incoming and outhgoing MCB's and erected on iron frame.
General Specifications for MCBDB's
DB's shall be prewired and shall be fabricated as per IS: 8623. Suitable for flush mounting & surface mounting with 100 A copper bus bar for Horizontal type DB) neutral bar earth bar & cable ties for cable management
In case of Vertical DB the bus bar shall be of 200 A rating.
DB's shall be of IP-43 degree of protection.
All the MCB distribution boards shall be fabricated out of 18 SWG thick sheet steel duly rust inhibited through a process of degreasing pickling phosphating & powder coating to an approved colour over primer & shall be of he totally enclosed dust proof type suitable for wall mounting.
All components shall be mounted on DIN rails & covered totally with a sheet steel cover rendering it finger-safe Access to the internal connectins shall be only through removing the cover sheet.
All DB's shall be internally prewired using copper insulated high temperature PVC wires.
Bus bars & neutral bar shall be fully insulated with standerad colour code.
Bus bar withstanding capacity shall be 10 ka
DB's must have facility of reversing door without modification, pan assemble for ease of installation & convertible locking.

Material:
Horizontal Vertical type MCBDB: ISI marked as per IS 8623. of specified ways poles) surface/flush mounting, with/without door suitable for 230 V/415 V
lugs- Copper lugs of suitable size as per (CB-CL/CU) in chapter 7.10 for Cable Iron work: Suitable size of angle/flat hardware: SM screws rawl plug gutties etc. Page 96 of 189
Method of Construction:
MCBDB shall be erected at designated location and directed by site engineer and terminating the provided wires by copper lugs (Crimping type) and connecting the same.
Mode of Measurements : Executed quantity shall be counted on number basis,(i.e. each)

Specification No (SW-SWR/MCCB)
Providing & erecting 3 Pole/4 Pole MCCB of specified rating and with specified short circuit rupturing capacity in KA complete erecting in provided enclosure & connected with provided leads on incoming and outgoing side complete.
General Specifications for MCCB's
MCCB's should comply with IS 13947 part -2 IEC (6094) and IEC 60947-3 & IEC 60947 part -2
The MCCB shall be suitable for universal mounting i.e. the load /line shall be interchangeable with shrojded incoming contacts.
The MCCB shall be suitable for minimum operating voltage of 415 V.
The thermal setting shall be adjustable from 64% to 100 % of its normal current

The magnetic setting shall be adjustable from 3.5 to 10 In (normal current)
Trip reset should be available Manual /Automatic.
Isolator switches for electronic circuits to open the MCCB automatically
The MCCB's must house transparent label holder to ensure circuit identification.
The MCCB's must have fully insulated safety shutters.
Overload Zone adjustable from 0.4 to 1 in with line (For 630 amp & above MCCB)
Short circuit zone adjustable from 1.5 to 10 In with time .
Material:
3 Pole or 4 Pole MCCB Moulded case circuit breaker Fixed version-front Terminals with current rating & breaking capacity as below: i. 63 A to 125 A- 15 KA ii. 160 A to 250 A-35 KA iii. 300/400 A -35 KA iv. 630 A 70 **KA Method of Construction:** 3 Pole /4 pole MCCB shall be erected in provided enclosure & connected with provided leads/strip on incoming & out going site complete
Mode of Measurement: Executed quantity shall be counted on number basis,(i.e. each)

Specification No. (CB-LT/AL,CB-LT/CU,CB-HT)
Providing armoured cable of specified voltage level, size & specified conducting material (Aluminum/copper) as per Table No. 7/3 including required material, hardware's for erection and erecting on wall, ceiling, RCC slab or drawing the same through pole, pipe, laying in provided conduit, trench, ducts, trays as per approved method of construction including glands, lugs, etc.
Material:
Cables:
Cables shall be PVC for LT/MP and XLPE for HT as per Table no. 7/3 and of required construction, colour, shall carry ISI mark, IS No. manufacture's name, size, duly embossed/ screen printed at every metre and having the total count of progressive length in meter at each mark.
Earth wire: Galvanized iron (GI) wire of appropriate gauge as per Table No 7/1.
Glands: As per specification (CB-GL)
Lugs: As per specification (CB-CL/AL, CB-CL/CU)
Saddles: Saddles fabricated from GI sheet of required gauge and size depending on dia of cable either galvanized or painted with superior quality enamel black paint with necessary Ghoaring mechanical strength, semi circular shaped with extended piece having suitable holes for fixing.
GI strip: 22 g x 25 mm width GI strip.
Clamps: MS Clamps fabricated of required length and shape, having the size of 3/6 mm thick mild steel having 25/50 mm width (as per size of cable), rounded ends with wooden/resin cast grip for holding the cable.

Identification tags: For identifying root, connection position GI strip with identification mark/name embossed/painted with arrangement to tie should be fix on cbale or arrangement of ferrules to be done.
Hardware : Sheet metal (SM) screws or required sizes, plugs/wooden gutties, etc. Page 107 to 189
Method of Construction:
General:
a) Irrespective of method of construction the cable ends shall be terminated with appropriate size & type of glands with lugs duly crimped as directed by Site engineer.
b) Wherever the cable has to be bent, the turning radius shall be as mentioned in Table No 7/2 Grouping of cables shall be done with adequate distance between cables as mentioned in IS so as to minimize de-rating Cables shall be tagged/ferruled with identification name /mark at the point from where distribution starts and at ends. Bare earth wire of appropriate size as per Table No. 7/1 shall run along with the cable Earth wire.
running with the cable shall be terminated at the earth terminal nearest cable
Termination.
1 Erection of Cable on Surface:
Erection shall be done as per the routes and layout finalized in perfect level and in plumb. before fixing the cable shall be straightened as far as possible for good aesthetics look, continuous bare GI earth wire of required gauge as per Table No. 7/1 shall be run. Cable with GI wire shall be fixed by saddles firmly clipped on cable and shall be fixed to wail with minimum 50 x 8 mm SM screws with plugs/wooden gutties, etc. (Distance between two supports/saddles shall be maximum 450 mm) Wooden gutties shall be used wherever required (Especially for stone wall). The entries made in wall, floor slab etc for laying the cable shall be made good by filling and finishing with plastering the same.
2) Erection of Cable on Trusses:
Cable along with bare GI earth wire while erecting on trusses shall be firmly clamped by wrapping GI strip of 22 g, 25 mm width of required length fixed to truss with nuts and bolts.
3) Erection of Cable on Pole:
cable along with bare GI earth wire, while erecting on pole, shall be firmly clipped by suitable wooden /epoxy resin cast grips clamped with 25 x 3 mm or 50 x 6 mm MS strip of required length and fixed to pole with nuts and bolts.

4) Laying of Cable in provided Trench/Pole:
while laying Cable along with bare GI earth wire, utmost care shall be taken to prevent damage to the insulation of the cable and to the open end. Cable shall be brought out from trench vertically straight (minimum 1.0 metre above GL) Care shall be taken to inspect the trench so that depth of cable shall not be less than as shown in Table No 7/4 Suitable size cable loops shall be provided near termination point at adequate depth.
5) Erection of cable in constructed Trench /duct:
erecton of cable/s in constructed trench /duct, shall be as per guide lines of IS 1255.
6)Erection of cable/s on trays: Cable/s shall be tied with PVC tags on GI trays. that bending point care shall be taken so at sharp edges of sheet will not damage insulation of cable.
7) Mode of Measurement: Executed quantity shall be measued on the basis of runnig metre per run of cable.

Dismantling
cable laid underground. or fixed on any surface shall be dismantled carefully without-amaging complete with all its accessories making coil and stored as directed. The surface of the dismantled cable shall be made clear by removing of unwanted material, cement motor. etc. When cable is dismantled from trench refill back the trench and making the surface proper.
Mode of Measurement: Executed quantity shall be measured on the basis of running metre per run of cable.

Table No 7/1

Size of Bare GI Earth Wire to be used with LT Cables up to 1.1 kV

S. No.	Size of cable	Size of bare GI Earth wire to be used with cable
1	2.5 Sqmm to 50 Sqmm of all cores	12 SWG
2	70 Sqmm to 95 Sqmm of all cores	10 SWG
3	120 Sqmm and above of all cores	8 SWG

Table No 7/2

Minimum bending Radius for Cables

S. No.	Voltage level of cables	Single Core	Multi core Unarmoured	Multi core Armoured
1	Up to II kV	20 D	15 D	12 D
2	Up to 22 kV	25 D	20 D	15 D
3	Up to 33 kV	30 D	25 D	20D

Note : D diameter of cable
Wherever possible, 25 percent larger radii than the specified above should be used.

Table No 7/3

Current Rating (In Ground) for PVC/XLPE Insulated 1.1 kV Grade Cables

Nominal area of Conductor	A li. minum Conductor				Copper Conductor			
	Single Core		Multi Core		Single Core		Multi Core	
Sqmm	PVC	XLPE	PVC	XLPE	PVC	XLPE	PVC	XLPE
10	51	55	46	50	65	71	60	65
16	66	74	60	68	P*-t	95	77	67
25	86	OQ	76	90	110	125	99	115
35	100	118	92	108	130	150	120	138
50	120	137	110	126	155	175	145	161
70	140	172	135	158	190	220	175	202
95	175	204	165	187	220	260	210	239
120	195	234	185	215	250	30	240	276
150	220	262	210	240	280	336	270	308
185	240	298	235	273	305	381	300	350
240	270	344	275	316	345	441	345	405
300	295	387	305	355	375	496	385	455
400	325	458	335	420	400	586	425	538
500	345	495	-	-	425	635	-	-
630	390	555	-	-	470	710	-	-
800	440	625	-	-	-	-	-	-
1000	490	685	-	-	-	-	-	-

Rating Factors for Variation in Ambient Air Temperature			
Air Temperature (^{0}C)	40	45	50
Rating Factor (XLPE)	1.00	0.94	0.83
Rating Factor (PVC)	1.00	0.90	0.81

Signature of Contractor **No. of Corrections** **Executive Enginer**

Table No 7/4

Minimum Laying Depth of Cables (IS: 1255)

S. No.	Voltage level of Cables	Minimum depth from top of the cable
1	Up to 1.1 kV	750 mm
2	3.3 kV to 11 kV	900 mm
3	22 kV to 33 kV	1050 mm
4	At road crossing	1000 mm
5	At railway crossing (from Bottom of sleepers to Top of pipe)	1000 mm

Notes below Table No 7/4 :

1	PVC insulated electrical cable for voltage grade up to 1.1 kV is based on 8 volts deop
2	The distances are given in meters and after rounding
	The distances are given in meters and after rounding

For Temperature correction please see as detailed below.				
Ground Temp.	20 degree C	25 degree C	30 degree C	35 degree C
Rating factors:	0.95	0.90	0.85	0.80

Signature of Contractor **No. of Corrections** **Executive Enginer**

Table No. 7/5

Distance up to which different size of UG Aluminum Conductor Cables 1.1 kV grade, can be used for different current ratings of 8 Volts drop. (PVC insulated, PVC Sheathed

(3 cores or 4 cores)

Maximum Conductor temperature - 70 degree C														
S. No	Current	Distance in meters for the following cable sizes in Sqmm												
	Amp	6	10	16	25	35	50	70	95	120	150	195	240	300
1	5	165	260	415	725	895	1300	1925	2360	3065	3555	4300	5770	6460
2	10	80	130	250	360	450	650	960	1180	1530	1775	2150	2885	3230
3	15	55	65	140	240	300	430	640	785	1020	1185	1430	1920	2155
4	20	40	65	100	180	225	325	480	590	765	890	1075	1440	1615
5	25	30	50	80	145	180	260	385	470	610	710	860	1150	1290
6	30	25	40	70	120	150	215	312	390	570	590	715	960	1075
7	40	20	30	50	90	110	160	240	295	380	445	535	720	805
8	50	-	25	40	70	90	130	190	235	305	355	430	575	645
9	60	-	-	35	60	75	110	160	195	255	295	355	480	535
10	70	-	-	30	50	65	90	135	165	215	255	305	410	460
11	80	-	-	-	45	55	80	120	145	190	220	265	360	405
12	90	-	-	-	40	50	70	105	130	170	195	235	320	360
13	100	-	-	-	35	45	65	95	115	150	175	215	290	320
14	110	-	-	-	-	40	60	85	105	140	160	195	260	290
15	120	-	-	-	-	35	55	80	95	125	145	180	240	270
16	130	-	-	-	-	-	50	75	90	115	135	165	220	250
17	140	-	-	-	-	-	45	70	80	110	125	150	205	230
18	150	-	-	-	-	-	-	65	75	100	115	140	190	215
19	160	-	-	-	-	-	-	60	70	95	110	130	180	200
20	170	-	-	-	-	-	-	55	70	90	105	125	170	190
21	180	-	-	-	-	-	-	50	65	85	100	120	160	180
22	190	-	-	-	-	-	-	-	60	80	90	110	150	170
23	200	-	-	-	-	-	-	-	60	75	90	105	145	160
24	225	-	-	-	-	-	-	-	-	65	80	95	125	145
25	250	-	-	-	-	-	-	-	-	-	70	85	115	130
26	275	-	-	-	-	-	-	-	-	-	-	80	105	115
27	300	-	-	-	-	-	-	-	-	-	-	70	95	105

Specification No (CW-PLB/GP)

Supplying and erecting GI pipes of specified class, with necessary accessories, (such as: bends, tees, couplings, unions, sockets, enlargers, reducers, check nuts, plugs, (etc.) at designated place, having relevant ISI mark, complete to the satisfaction of the department.

Material:

Pipe : The galvanized iron pipes shall comply with IS: 1239-1973 and 1969 for the specified class. The specified diameter of the pipes shall refer to inside diameter.

Fittings & Accessories : Bends, Tees, Couplings, Unions, sockets, bends, tees, enlargers, reducers, back nuts, plugs, unions, etc. shall made of galvanized iron and shall comply IS: 1239-1973 and 1969.

Plumbing material: Hemp" Linseed oil.

MS Clamps: Clamps fabricated of required length and shape, of 3/6 mm thick mild steel having 25/50 mm width.

Hardware : MS nuts & bots of required size and strength, sheet metal (SM) screws of required sizes, plugs/wooden gutties, etc.

4. Method of Construction:

4.1 Pipes to be used as Enclosure:

4.1.1 Erection of Pipe on wall:
The required length of pipe shall be machine cut, without any sharp edges, burrs, etc. The pipe duly enclosing the specified material, shall be erected on wall in plum, and fixed with required size of MS clamps on wall with plugs, gutteies etc. When the pipe is to be fixed to walls it shall be fixed with standard bracket, clips or holder by keeping the pipe about 12 mm clear of the wall. The pipe shall be fixed to the wall horizontally and vertically and parallel to one another, when more than one pipe is to be laid, unless unavoidable. The supporting clips, etc. for the pipe shall spaced at about two meters or so as necessary. Holes cut during construction shall not be left out; they shall be filled and finished after passing of the pipe through it.

4.1.2 Erection of Pipe on pole:
The required length of pipe shall be machine cut without any sharp edges, burrs, etc. The pipe duly enclosing the specified material, shall be erected on pole in plum, and fixed with required size of MS clamps with MS nuts & nuts & bolts of required size and strength When the pipe is to be used as cable enclosure and is to be terminated on street light pole (S) the pipe at the trench level should be placed at least 30 cm above the cable kivel for avoiding damage to the insulation of cable.

4.1.3 Laying the Pipe underground:
The excavation for laying the pipe underground shall be done as required and in advance of laying so as to cause least damage to the trench and least inconvenience to traffic and in other respects The trench for laying the pipe snail be excavated to the lines and levels ad directed by the site engineer The bed shall be made even. Unless otherwise Page 189 of 189
specified in the special provisions the excavation shall be about 30 cm wide and not less than 45 cm deep. The trench shall be excavated through all strata met with. Where necessary, sides may be shored or sloped. In case rock is met with the erection of the trench, the depth may be slightly reduced but shall be sufficient to receive the pipe and the cushioning with a safe margin Dewatering shall be done where necessary.
During excavation, if any pipes water mains, cables, etc. are met these shall be/ carefully protected and suppoited any damage done shall be made good by the contractor ? this own cost.

4.3 Pipe used for Plumbing purpose:
The required length of pipe shall be machine cut and threaded (threading shall be done by machine only) without any sharp edges, burrs, etc. The pipe shall then be properly aligned with the accessory and tightening by applying hemp, linseed oil, so as to make it leak proof. During the erection Wherever required, correct accessory shall be used When holes are not left during construction they shall be cut into the walls or slabs, etc. to pass the pipe through The necessary clamps suppets shall be provided wherever required.

5. Mode of Measurement
Executed quantity shall be measured on running meter basis including the entire accessory. The lengths shall be measured net including the straight and bends along the center line of the pipes and fittings correct up to a cm (i. e. per merer)

Specification No (EA-EP)
Supplying and erecting galvanised cast iron / copper earth plate type/G.I. pipe type earthing with/ without C. I. cover as per instructions from the site engineer

Material :
Earth Plate: Galvanised cast iron/ Copper earth plate G. I. pipe as per specification jiven in Table No.9.1/1
Cover : As per specification given in Table No 9.1/1
Earthing Conductor: Copper/G.I. Strip/Annealed bare copper wire/G.I. earth wire of size as **G/Pipe:** As per specification **(CW-PLB/GP)** mentioned chapter no 17.5 for watering and as enclosure for Earth wire, refer specifications given in Table **No. 9.1/1.**
Hardware: Screw / nut bolts with required washer of dimensions **Rawl** Plug/ clip **IT nails** and material as per specification given in Table No 9.1/1
Filling material: Coal/**Charcoal/** salt as per specifications given in Table No. 9.1/1.as per specification **given** in Table **No**. 9.1/1.
Lugs: As per specification **(CB-LG/AL,CB-LG/CU)** Mentioned chapter 7.9 & 7.10 Copper/ Aluminium lugs as per specifications given in Table No. **9.1/1.**

Method of construction:
Pit is to be dug of required dimension and depth for the earthing at site, and laying of Galvnaised cast iron /Copper earth plate or G.I. pipe shall be as per Table No9.1/1. The earth connection to equipment/ switch earth gear and earthing electrode shall be connected as shown in the diagram and as per IS 3043 amended up to-date. The connect Ms shall be made either by strip or double run of each wire drilling, welding, riveting, brazing and nut bolting to plate or pipe, where ever required in an approved manner. As far as possible continuous strip

shall be used, but where ever jointing of strip is unavoidable, the overlap portion must no be less than 21/2 times the width of the strip either welded/ brazed/sodered by all sides or 6 inches overlap with two nut bolts/riveting of adequate size with required washer and covered by anti-corrosive paint as per approved jointing practice in the industry and as per directives from site engineer in charge. Pit shall then be filled with screened soil with alternate layer of coal and slat, and if, necessary brick masonry work (Where ever applicable) shall be done as specified in IS: 3043, with laying wires in PVC/G.I. pipe and watering arrangement as per drawing no EA-1 and covered with C.I. cover (Where ever applicable).
Where ever requires or as specified by Site Engineer, a Test link shall be provided for facilitating the testing or resistance of earth electrode.
Testing:
The value of each earth electrode shall be measured by earth tester in presence of site Engineer and record to be submitted.
Mode of Measurement: Executed quantity will be measured on number basis (i.e. each)

Table No. 9.1/1
Detailed Specifications of various types of Earthing

Type of earthing		Glavinised cast iron earht plate type without C.I. cover	Copper earth plate type with C.I. cover	Glavinised cast iron earht plate type without C.I. cover	Pipe Type Earthing with out C.I. Cover
S. No.	Particular				
1	Depth from top of plate Up to Ground level	1.5 m	1.5 m	1.5 m	1.5 m
2	Size & type of material for pipe/plate type earthing	cast iron earth plate size 60 x 60 x 0.6 cm	cast iron earth plate size 60 x 60 x 0.6 cm	cast iron earth plate size 60 x 60 x 0.6 cm	B grade G.I. pipe 40 mm dia. 2.5 m long or 20 mm G.I. rod.
3	Salt/charcoal	30 Kg. charcoal and salt each	30 Kg. charcoal and salt each	40 Kg. charcoal and salt each	N.A.
4	Type of Wire	Double G.I. 8 SWG	Double G.I. 8 SWG	Double G.I. 6 SWG	Double G.I. 8 SWG
5	Wire enclosure	12 mm dia. G.I. pipe 2 mtr. Long	12 mm dia. G.I. pipe 2 mtr. Long	12 mm dia. G.I. pipe 2.5 mtr. Long	N.A.
6	Nut bolts	12 mm cadmium/ G.I.	12 mm cadmium/ G.I.	12 mm cadmium/ G.I.	N.A.
7	Washers	G.I.	G.I.	G.I.	N.A.
8	Watering pipe	15 mm dia. G.I. pipe	13 mm dia. G.I. pipe	19 mm dia. G.I. pipe	N.A.
9	Lugs	Yes	Yes	Yes	Yes
10	Funnel	No	No	Yes	N.A.
11	Brick Masonry	No	Yes	Yes	N.A.

Specification No (CW-EXN/CTR)
Excavating in all types of soil strata and making trench for laying cable/cables, providing sand bed for laying the cable, covering cable with specified material as per requirement, and finishing the same by making the surface proper with crown on top of the trench.
The following list shows Indian Standards, which are acceptable as good practice, and accepted standards.
SP 30: 1984: National Electrical Code
SP 7 (Group 4) : 2005 : National Building Code

IS 1255: 1967: Code of practice of Installation & Maintenance of armoured cables up to 33 kV.

3. Material:

Bricks: Solid Clay bricks of minimum size 225 x 110 x 62.5 mm (L x B x H), burnt in the kiln, of good quality.

Sand: Screened sand of good quality.

4. Method of Construction:

Trench in soft soil/Hard murum/ tar road: Single run of cable. Before excavating the soil for preparing trench, route of cable laying shall be got finalized from the site in-charge. Trench of minimum 300 mm width shall be excavated upto minimum depth below the ground surface as per Table 17.1/1 Bottom of the trench should be carefully levelled and freed from stones. Cable duly straightened shall be laid flat and embedded in the 20 C mm layer of screened sand at the bottom of the trench. Bricks shall be laid all over the run of cable as specified below:

Lengthwise for cable upto and including 10 Sqmm of all cores.

Width wise for cable above 10 Sqmm of all cores.

Remaining portion of the trench shall be back filled with the excavated material after removing stones and sharp/hard material, and making the surface proper. Crown of 150 mm shall be provided over the trench. The remaining excavated material shall be removed from site and dumped in scrap yard of Local authorities or at suitable place.

Trench in Soft soil/ Hard Murum/Tar road: Two or more cables run of cable. Before excavating the soil for preparing trench, route of cable laying shall be got finalized from the site in-charge. Trench of minimum required width more than 300 mm shall be excavated upto minimum depth as per Table No. 5, below the ground surface. Bottom of the trench should be carefully levelled and Ceed from stones. Cable duly straightened shall be laid flat and embedded in the 200 mm layer of screened sand. The Inter-axial distance between two cables shall be between 230 and 400 mm. at the bottom of the trench. Bricks shall be laid all over the run of cable as specified below:

Lengthwise for cable upto and including 10 Sqmm of all cores.

Width wise for cable above 10 Sqmm of all cores.

Remaining portion of the trench shall be back filled with the excavated material after removing stones and sharp/hard material, and making the surface proper. Crown of 150 mm Page 185 of 189 shall be provided over the trench. The remaining excavated material shall be removed from site and dumped in scrap yard of Local authorities or at suitable place.

Trench in Soft soil/Hard Murum/Tar road with half round Hume pipe

(For cables of size 25 Sqmm and above shall be covered by min. 150 mm dia. of RCC Hume pipe)

Before excavating the soil for preparing trench, route of cable laying shall be got finalized from the site in-charge. Trench of minimum required width more than 300 mm shall be excavated upto minimum depth as per Table No. 5, below the ground surface. Bottom of the trench should be carefully levelled and freed from stones. Cable duly straightened shall be laid flat and embedded in the 200 mm layer of screened sand. The Inter-axial distance between two cables shall be between 230 and 400 mm. at the bottom of the trench. Inverted 150 mm dia. Half round RCC Hume pipe shall be laid above full length of cable. For more than one cable higher size or more number of Hume pipes are to be provided.

Remaining portion of the trench shall be back filled with the excavated material after removing stones and sharp/hard material, and making the surface proper. Crown of 150 mm shall be provided over the trench. The remaining excavated material shall be removed from site and dumped in scrap yard of Local authorities or at suitable place.

As per 3.1 above, in place of bricks, the cable of size 25 Sq.mm and above shall be covered with 150 mm dia. Half round Hume pipe.

4.4 Mode of Measurement: Executed quantity shall be measured on the basis of running meter per run of cable.

Table No. 17/1/1

Minimum Laying Depth of Cables (IS:1255

S. No.	Voltage level of cables	Minimum depth from top of the cable
1	Up to 1.1 kV	750 mm
2	3.3 kV to 11 kV	900 mm
3	22 kV to 33 kV	150 mm
4	At road crossing	1000 mm
5	at Railway crossing (from Bottom of sleepers to Top of pipe.)	1000 mm

17.4 Painting (PTG)
General:
This part of specification deals with the painting of all types of Fans, Pole? Fluorescent fittings, Panel type lift doors, Collapsible gates of lift, Transformer, Fencing & Gate of transformer sub station, Feeder pillar, etc.

LIST OF RECOMMANDED MAKES OF MATERIAL USED FOR SID WORK

Sr. No.	Item	Approved make
1	6A/ 16A Piano type Switch	I.S.I. mark Ketto/Kalki/Vinay/Batson/ Anchor modern (ISS No. 3854)
2	6A/ 16A Piano type Socket	I.S.I. mark Ketto/Kalki/Vinay/Batson/ Anchor modern (ISS No. 1293)
3	CFL Lamps/Tubes - T-836 W/T5-14W	Philips/Crompton/Wipro/Bajaj/ Joshica/ Kalki/ Standard.
4	Switchgears	Joshica/Kalki/Standard
5	Batten holder/Pendent holder/ceiling rose	Anchor/Kalki/Vinay (ISS No. 1258)
6	PVC insulated Wires	Finolex/Indoplast/Polycab/Anchor (ISS No. 694)
7	Exhaust fan fresh Air	ISI Mark Almonard/ GEC/ Crompton.
8	PVC Truning/Cunduit	Prestoplast/Pressfit/Diamond.
9	Armoured Cable	Keydoor/Bharatcab (ISS No. 1554)
10	NCB Sp, DP, TP, FP/MCB DB/ RCCB	Standard/Hawells/HPL/MDS Legrand (IS marked)
11	2 x 18 W fitting/2 x 24 T-5	Crompton/Bajaj/Shakti
12	Ceiling Fan 1200/1400 mim	Bajaj/Crompton/Usha/Orient
13	Flu Fitting T 8/36 W	Bajaj/Crompton/Wipro/Philips.

Note: - 1) I.S.I. mark issued by Bureau of Indian standard/Approval accorded by Chief Engineer (Electrical) P.W.D. Mumbai shall be valid during the period of completion of work.
2) If necessary materials will be tested from I.S.I. or any approved Laboratory for Verifying the geniuses of product.

Signature of Contractor **No. of Corrections** **Executive Enginer**

REGISTER NO.1

FOR RECEIPTS & CONSUMPTION OF CEMENT

Name of Work :- _____

_____

_____

Balance since last week at the work site :

STATEMENT OF RECEIPT AND CONSUMPTION

Date	No. of bags received	No. of bags Consumed	Balance No. of bags at end of day
1	2	3	4

Contractor's Signature. Supervisor's Signature.

Signature of Contractor **No. of Corrections** **Executive Enginer**

REGISTER NO.2

Chart showing weekly required theoretical consumption and actual consumption of cement bags for work done actually for the following items.

1) Brick Masonry in C.M. 1:6

2) RCC M-10, M-15, M-20

3) PCC M-8, M-10

4) Others

ABSTRACT ENDING .....

Sr. No.	Item	Work done		Theoretical consumption constant (in bags)	Theoretically required consumption of cement (in No. of bags)	Cement actually consumed (in No. of bags)
		Quantity	Unit			
1	2	3	4	5	6	7

Contractor's Signature. Supervisor's Signature.

Signature of Contractor **No. of Corrections** **Executive Enginer**

REGISTER NO.1

Quantity of Steel
(Receipt, Consumption & Balance) for month ending .....

..... Division ..... Place of work .....

Name of Work :- _____

_____

_____

Balance since last month	Type and quantity in M.T.					
	Type					
	Quantity					

Daily receipt, consumption and balance of steel for week ending .....

Date	Receipt of Steel (M.T.)		Consumption of Steel (M.T.)		Balance on each transaction		Abstract of balance steel for each type for week ending	
	Type	Weight in M.T.	Type	Weight in M.T.	Type	Weight in M.T.	Type	Weight in M.T.
	Total		Total		Total		Total	

Contractor's Signature.
For issued/consumed
Steel Quantity

Signature of J.E.
Sec. Engineer

Signature of Contractor **No. of Corrections** **Executive Enginer**

REGISTER NO.1

Statement for comparison of steel consumed on each item and theoretical consumption as per drawings for month ending.....

Name of Work :- _____

_____

_____

Sr. No.	Item executed	Quantity Executed	Qty. of steel to be consumed as per design drawing (in M.T.)	Actually consumed steel. (in M.T.)

Contractor's Signature.
For issued/consumed
Steel Quantity

Signature of J.E.
Sec. Engineer

Signature of Contractor **No. of Corrections** **Executive Enginer**

DRAWINGS

CONTRACT DRAWINGS :

The Contract Drawings provided for tendering purpose with the tender documents shall be used as a reference only. Contractor should visualize the nature of type of work contemplated and to ensure that the rates and prices quoted by him in the bill of quantities take due considerations of the complexities of work involved during actual execution / consideration as experienced in the field.

The tendered rates/prices for the work shall be deemed to include the cost of preparation, supply and delivery of all necessary drawings, prints, tracings and negatives which the contractor is required to provide in accordance with the contract.

DOCUMENTATION :

If so ordered by the Engineer-in-charge, the contractor will prepare drawings of the work at constructed and will supply original and three copies to the Engineer who will verify and certify these drawings.

Final as constructed drawings shall then be prepared by the contractor and applied in triplicate along with a micro-film of the same to the Engineer for record and reference purpose at the contractors cost.

SCHEDULE - C

Name of Work : Construction of New Administrative Building at Parali Tq. Parali Dist. Beed

SCHEDULE 'C' SPECIFICATIONS

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
	PART - A (Work Portion)		
	(i) Civil Work		
1.00	Excavation for foundation in earth, soil of all types, sand, gravel and soft murum, including removing the excavated material up to a distance of 50 metre beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etcetera complete. (Lift upto 1.5 metre) By Mechanical Means	Bd.A.1 Page Number 259	As directed by Engineer in charge.
2.00	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 Metre beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etcetera complete. (Lift upto 1.50 metre) By Mechanical Means	Bd.A.2 Page Number 259	As directed by Engineer in charge.
3.00	Excavation for foundation in Hard murum including removing the excavated material upto a distance of 50 Metre beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etcetera complete. (Lift from 1.5 to 3.0 metre.) By Mechanical Means	Bd.A.2 Page Number 259	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
4.00	Excavation for foundation in Hard murum and boulders including removing the excavated material upto a distance of 50 Metre, beyond the building area and stacking and spreading as directed, dewatering, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etcetera complete. (Lift from 1.5 metre to 3.0 metre) By Mechanical Means	Bd.A.3 Page Number 259	As directed by Engineer in charge.
5.00	Filling in plinth and floors with approved excavated material in 15 centi metre. to 20 centi metre layers including watering and compacting etcetera complete.	Bd.A.10 Page Number 262	As directed by Engineer in charge.
6.00	Filling in plinth and floors with contractors material/brought from outside and approved by Engineer incharge in layers of 15 centi metre to 20 centi metre including watering and compaction etcetera complete.	Bd.A.11 Page Number 263	As directed by Engineer in charge.
7.00	Conveying materials obtained from road cutting including all lifts, laying in layers of 20 centi metre to 30 centi metre breaking clods, dressing to the required lines, curves, grades and section, watering and compacting to not less than 97% of standard Proctor density for a lead of over 50 metre to 300 metre inclusive from the site of excavation to the site of deposition as directed.	MORTH 305	As directed by Engineer in charge.
8.00	Providing preconstructional antitermite treatment as per Indian Standard 6313 (Part-II) by treating the bottom surface and sides of excavation at the rate of 5 litres of emulsion concentrate of 1.0 percent of chlorophyrifos per square meter of surface area covering 10 years guarantee on bond paper.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
9.00	Providing preconstructional antitermite treatment as per Indian Standard 6313 (Part-II) treatment by treating the backfill in immediate contact with foundation at the rate of 5 litres of emulsion concentrate of 1.0 percent of clorophyrifos per square metre of vertical surface area covering 10 years guarantee on bond paper.	As directed by Engineer in charge.	As directed by Engineer in charge.
10.00	Providing preconstructional antitermite treatment as per Indian Standard 6313 (Part-II) by treating the top surface of plinth filling at the rate of 5 litres of emulsion concentrate at 1.0 percent of clorophyrifos per square metre of surface area covering ten years guarantee on bond paper.	As directed by Engineer in charge.	As directed by Engineer in charge.
11.00	Providing preconstructional antitermite treatment as per Indian Standard 6313 (Part-I) to the soil along the external face of building by punching holes of 1.2 of 1.5 Cement Mortor diametre about 30 -60 centi metre deep at 15 centi metre centre to centre as close to the wall as possible and to inject 0.5 percent of aldrin or clorophyrifos at the rate of 7.5 litres per hole and sealing the same with proper filling and covering 10 years guarantee on bond paper.	As directed by Engineer in charge.	As directed by Engineer in charge.
12.00	Providing soling using 80 mili metre size trap metal in 15 centi metre layer including filling voids with Crushed sand/grit, ramming, watering etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
13.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-10 of trap/ granite/ quartzite/ gneiss metal for foundation and bedding including bailing out water, Steel centering, formwork, laying/ pumping, compacting, roughening them if special finish is to be provided, finishing if required and curing complete, with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd. E. 1 Page Number 287	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
14.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-15 of trap/ granite/quartzite/gneiss metal for bed blocks, foundation blocks and such other items including bailing out water, Steel centering, formwork, laying/ pumping, compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etcetera complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etcetera (Wooden centering will not be allowed.), with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.E.4 Page Number 289 and B- 7, Page Number38	As directed by Engineer in charge.
15.00	Providing and laying Cast in situ/Ready Mix cement concrete M-15 of trap/ granite/quartzite/gneiss metal for coping to plinth or parapet, moulded or chamfered as per drawing or as directed including steel centering, plywood/ steel formwork compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etcetera complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etcetera (Wooden centering will not be allowed.) With fine aggregate (Crushed sand VSI Grade)	Bd.E. 3/Page Number 288/I.S. 456 (2000)	As directed by Engineer in charge.
16.00	Providing and laying in situ cement concrete M-30 with tremix treatment for 200 mili metre thickness for flooring with groove cutting of 4 mili metre wide and 20 mili metre deep with necessary refilling with bitumen etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
17.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete work in foundations like raft, strip foundations, grillage and footings of Reinforced Cement Concrete columns and steel stanchions etcetera columns as per detailed designs and drawing or as directed including Steel centering formwork, cover blocks laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.3 Page Number 298 and B.7, Page Number38	As directed by Engineer in charge.
18.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete columns as per detailed designs and drawing or as directed including steel centering, formwork,cover blocks, laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete,(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.5 Page Number 300 and B.7, Page.Number 38	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
19.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete beams and lintels as per detailed designs and drawings or as directed including steel centering, formwork, cover blocks, laying/ pumping, compactionand roughening the surface if special finish is to be provided and curing etcetera complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.6 Page Number 300 and B.7, Page Number38	As directed by Engineer in charge.
20.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap/ granite / quartzite/ gneiss metal for Reinforced Cement Concrete slabs and landings as per detailed designs and drawings including steel centering, formwork, cover blocks, laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete,(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.8 Page Number 302 and B.7, Page Number38	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
21.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete chajja as per detailed design and drawings including steel centering, formwork, cover blocks, laying/ pumping, compacting and roughening the surface if special finish is to be provided and curing complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.9 Page Number 303 and B.7, Page Number38	As directed by Engineer in charge.
22.00	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap / granite / quartzite / gneiss metal for Reinforced Cement Concrete canopy as per detailed designs and drawings including steel centering, formwork, laying/ pumping, compacting and roughening the surface if special finish is to be provided and curing etcetera complete (excluding reinforcement). with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.8 Page Number 303 and B.7, Page Number38	As directed by Engineer in charge.
23.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-30 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete pardi of required thickness including steel centering, formwork, cover blocks, laying/ pumping, compacting and roughening them if special finish is to be provided and curing complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.11 Page Number 304 and B.7, Page Number 38	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
24.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-30 of trap / quartzite /granite /gneiss metal for Reinforced Cement Concrete Waist slab, and steps of staircases as per detailed design and drawings or as directed including steel centering, plywood/ steel formwork, steel props, laying/ pumping, compaction, finishing uneven and honeycombed surface with Cement Mortor 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening the surface if special finish is to be provided and curing etcetera complete. (Excluding reinforcement, including cover block).(Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etcetera) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd. F. 13 Page Number 305 /I.S. 456 (2000	As directed by Engineer in charge.
25.00	Providing and fixing in position Thermo Mechanical Treated (TMT) - FE - 500 bar reinforcement of various diameters for Reinforced Cement Concrete pile caps, footings, foundations, slabs, beams columns, canopies, staircase, newels, chajjas, lintels pardis, copings, fins, arches etcetera as per detailed designs, drawings and schedules. including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required complete.	Bd.F.17, Page Number 306	As directed by Engineer in charge.
26.00	Providing and fabricating structural steel work in rolled sections like joists, channels, angles, tees etcetera as per detailed design and drawings or as directed including cutting, fabricating, hoisting, erecting, fixing in position making riveted / bolted /welded connections without connecting plates, braces etcetera and including one coat of anticorrosive paint and over it two coats of oil painting of approved quality and shade etcetera complete.	Bd.C.2 Page Number 275	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
27.00	Providing fly ash brick masonry with conventional / Indian Standard type fly ash bricks in Cement Mortor 1:6 in foundation and plinth including bailing out water manually striking joints, racking out joints watering and scaffolding etcetera complete.	As director by engineer in charge and BDG- 2 and 5	As directed by Engineer in charge.
28.00	Providing Autoclaved Aerated Concrete Block masonary of Ecolite or equivalent make conforming to IS:2185 (Part 3) - 1984 in extra fine jointing mortar of fixoblock of UltraTech or equivalent in superstructure including striking joints, raking out joints and scaffolding etcetera Complete. (The test shall be carried out conforming to IS:6441 (Part I) - 1972)	As directed by engineer in charge	As directed by Engineer in charge.
29.00	Providing Autoclaved Aerated Concrete Block masonary of Ecolite or equivalent make conforming to IS:2185 (Part 3) - 1984 in extra fine jointing mortar of fixoblock of UltraTech or equivalent in Half brick thick wall including striking joints, raking out joints and scaffolding etcetera Complete. (The test shall be carried out conforming to IS:6441 (Part I) - 1972)	As directed by engineer in charge	As directed by Engineer in charge.
30.00	Providing cement based water proofing treatment to terraces (Indian water proofing or alike) with brick bats laid in required slope to drain the water for any span after cleaning the base surface. Applying a coat of cement slurry admixed with approved water proofing compound and laying the brick bats on bottom layer in Cement Mortor1:5 admixed with approved water proofing compound filling up to half depth of brick bats, curing this layer for 3 days, applying cement slurry over this layer joints of brick bats with Cement Mortor1:3 admixed with approved water proofing compound and finally top finishing with average 20 mili metre. thick layers of same mortar added with jute fiber at 1 Kilogram per bag including finishing the surface smooth with cement slurry admixed with approved water proofing compound. Marking finished surface with false squares of 300 mili metre x 300 mili metre making the junctions at the parapet rounded and tapered top for required height, with drip mould at the junction of plaster and parapet and curing and covering 10 years Guarantee against leakproofness on Court fee stamp paper of Rs. 500/- including ponding test etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
31.00	Providing water proof bedding for flooring of Bath and Water Closet 25 mili metre thick in Cement Mortor 1:3 including using approved water proofing compound in specified proportion as per manufacturers specifications for per bag of cement including leveling, curing and covering 10 years guarantee on court fee stamp paper of Rs.500/- including ponding test etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
32.00	Providing and applying two coats of High Albedo paint having minimum Solar Reflective Index (SRI) 108 (with solar reflectance & thermal emittance tested as per ASTM) C 1549 and ASTM C 1371 respectively, VOC less than 10 cc/gm. The coating thickness and the methodology of application shall strctly as per manufacturer's specifitions and as approved by engineer in charge. Surface preparation includes cleaning with metal wire brush to remove all dust, fungus etcetera washing with water all complete.The contractor shall give guarantee for the performance of SRI and also the durabitity of coating, all complete as per direction of Engineer - in- incharge.	As directed by Engineer in charge	As directed by Engineer in charge.
33.00	Providing and fixing 20 to 25 mili metre thick rough shahabad box type waterproofing for basement or underground floor on a base of Cement concrete 1:3:6, including sub base of 2.50 centimeter thick Cement mortar 1:3 with conceal, secrete (RMW), Algae proof or other alike waterproofing liquids, raking of joints upto 35 mili metre depth, filling the joints with 6 mili metre size crushed metal, hand grouting with cement slurry, curing and cleaning, with 7 years guarantee on court fee stamp of Rs. 100/- with ponding test etcetera complete. (excluding Cement concrete 1:3:6 base concrete)	Bd.J.2 Page Number 355	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
34.00	Providing and fixing 20 to 25 mili metre thick rough shahabad box type waterproofing treatment to vertical outside faces of Reinforced Cement concrete walls of basement or underground floor including filling the gap of 25 mili metre between rough shahabad and Reinforced Cement Concrete walls with cement grout mixed with water proofing liquid Algae proof or other alike with one tile lift method, brushing the joints horizontally with cement slurry mixed with water proofing liquid for width 30 to 35 mili metre and sloping coping over topmost tile with cement mortar 1:3, butting the bottom most with Cement concrete 1:2:4 mixed with water proofing liquid, curing, with 7 years guarantee on court fee stamp of Rs.100/- with ponding test etcetera complete. (excluding Cement concrete 1:3:6 base concrete)	Bd.J.2 Page Number 355	As directed by Engineer in charge.
35.00	Providing and applying plaster / wall punning with plaster of paris (with plaster of paris material of Ambuja / Mor Chap or equivalent make) in 10 to 13 mili metre thickness to previously plastered surface / or on newly brick surface (Excluding rough cast plaster) in all position including preparing and Finishing the surface scaffolding etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
36.00	Providing internal cement plaster 12 mili metre thick in single coat in cement mortar 1:5 without neeru finish to concrete or brick surfaces, in all positions including scaffolding and curing etcetera complete.	Bd. L.2 Page Number 368	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
37.00	Providing sand faced plaster externally in cement mortar using approved screened sand, in all positions including base coat of 15 mili metre thick in cement mortar 1:4 using waterproofing compound at 1 Kilogram per cement bag curing the same for not less than 2 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mili metre thick in cement mortar 1:4 finishing the surface by taking out grains and curing for fourteen days scaffolding etcetera complete.	Bd.L.7 Page Number 369	As directed by Engineer in charge.
38.00	Providing and applying Texture plaster with finishing with texture material of approved make in 3 to 4 mili metre thickness on previously plastered surface, including Plaster Groove 6 mili metre thickness or Tape Grooves 35 to 45 mili metre thickness or as required, in all position including preparing the surface, scaffolding etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
39.00	Providing and Fixing Processed Stone Cladding on wall surface/ plywood surface. RCC pardi/ Wall and all type of Interior, Exterior Compound wall and Gate etc. of cladding processed stone with material of Processed clay, Wooden chips, Silica sand, Cement, GFRC admixtures, Colour pigments, Fiber up to thick of 230 mm/ 25 mm including scaffolding, fixing of screw, etc. (As directed by Engineer in Charge)	As directed by Engineer-in-charge	As directed by Engineer in charge.
40.00	Providing and fixing GRC/FRP decorative emblem with details as per drawing with the state emblem and carvings as shown in 3 dimesion upto a thickness of 150 mm with scroll designs, floral designs, dentals, flutings etc., Item to include checking all surfaces for proper line and level, scaffolding etc. complete. Item includes preparing upto 5 samples for the Architects approval. Item to include making of the clay model and mould for the decorative cornice and supply of the decorative cornice as per approved sample executed in fiber glass material	As directed by Engineer-in-charge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
41.00	Providing and fixing GRC/FRP decorative cornice/architraves /mouldings and other details of various heights as mentioned below including grooves in wall, opening side vertical band, architraves, lintels etc. complete as per original detailing including scroll designs, floral designs, dentals, flutings etc., Item to include checking all surfaces for proper line and level, scaffolding etc. complete. Item includes preparing upto 5 samples for the Architects approval. Item to include making of the clay model and mould for the decorative cornice and supply of the decorative cornice as per approved sample executed in fiber glass material	As directed by Engineer-in-charge	As directed by Engineer in charge.
42.00	Providing fine cement finish 1.5 mili metre thick over green plaster surface including scaffolding curing etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
43.00	Providing patti/ band 75 mili metre wide on plastered surface 12 mili metre to 15 mili metre thick in Cement Mortor 1:3 line and level including neat finishing scaffolding curing etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
44.00	Providing patti/ band 100 mili metre wide on plastered surface 12 mili metre to 15 mili metre thick in Cement Mortor 1:3 line and level including neat finishing scaffolding curing etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
45.00	Providing patti/ band 150 mili metre wide on plastered surface 12 mili metre to 15 mili metre thick in Cement Mortor 1:3 line and level including neat finishing scaffolding curing etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
46.00	Providing and fixing chicken mesh of 22 gauge, with about 30 centi metre width at the junction of Reinforced Cement Concrete members and brick work, of approved quality including fixing mesh in position by necessary drilling in concrete /Burnt Brick Masonry and or tying by binding wire etcetera complete.	As directed by Engineer in Charge:	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
47.00	Providing and applying Two coats of wall care Putty on plastered surface and Ceiling and Walls to prepare surface even and smooth of approved make, etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
48.00	Providing and fixing false ceiling with eco-friendly light-weight calcium silicate tiles of spintone surface texture aerolite make or equivalent of size 595 mili metre x 595 mili metre having 15 mili metre thick densified micro look edge and 100% humidity resistance incombustible as per BS 46part IV and thermal conductivity 0.043 w/m 0 KC and NRC 0.50 placed in true horizontal level suspended grid of size 600x600 mili metre made from hot dipped Galvanised Iron steel sections ion silhouette profile, rotary stitched double webbed white with 6 mili metre reveal profile (white/black), wherein, main T runner of size 42 mili metrex14 mili metre between main tee 600 mili metre center-tocenter and secondary cross T of size 33x14x0.43 mili metre thick of length 600 mili metre long spaced inter-locked at middle of the first crossed T in each panel to form grid of 1200 mili metrex600 mili metre resting on periphery wall Profile wall section 19 mili metre (7+7) x 19 mili metrex0.40thicknesses and laying false ceiling for services like diffusers grills including cutting, making opening for light fittings, fixtures,, smoke detectors etcetera, wherever required. Main T runners suspended from ceiling with using Galvanised Iron soffit cleats of size 25x35x1.6 mili metre of required length fixed to the ceiling with 6 mili metre diametre and 50 mili metre long dash fastener, 4 mili metre diametre Galvanised Iron adjustable rods with powder-coated/good quality Galvanised Iron level adjustment clips of 35x35x0.8mm spaced @1200, center-to-center along main T all complete at all heights as per the specifications, drawings and as per the directions of Engineer-in-charge.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
49.00	Providing and fixing Modular false ceiling of 600 x 600 mili metre center to center and 13 mili metre thick square mineral fiber board to be fixed on frame work of alluminium sections for suspended false ceiling consisting of alluminium T 2"x1 ½" (50 mili metre x 40 mili metre) weighing 0.39 Kilogram/ metre at 60 centi metre center center and fixed with ½" x ½" (15 x 15 mili metre) flanges weighing 0.19 Kilogram/ metre suspended on 6 mili metre diametre mild steel rod weighing 0.22 Kilogram/ metre, fixed on wall and beams including rounding of the edges with alluinium T of 2" x 1 ½" (50 mili metre x 40 mili metre) weighing 0.39 Kilogram/ metre etcetera (all alluminium sections shall be anodized) including all labour, material, lifts etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
50.00	Providing & Fixing in position, Acoustical Panelling made from 12 mili metre thick Agro wood strips of 50, 75 7 100 mili metre width on 50 x 50 mili Mild Steelal-wood frame of 600 x 600 c to c having supports from wall of required length, in front of 1000 gsm synthetic wool 50 mili metre thick with approved coloured fabric on strips side & chicken mesh on wall side, including cost of required Cut-Outs, decorative mouldings / finishing-items / Melamine Polish & Scaffolding, as per Architectural & Acoustical Design & Instructions & Complete in all aspects. including all materials labour,finishing etcetera complete	As directed by Engineer-in-charge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
51.00	Providing & Fixing in position Acoustical Doors along with 150 x 150 mili metre teak wood frame, doors made from 50 mili metre Teak wood frame 600 x600 c to c filled with 1000 Gsm synthetic wool 50 mili metre thick and 3 mili metre Tecsound from both sides, 12 mili metre waterproof ply & veneer from both sides, including 150 mili metre heavy duty SS hinges (Geze / Dorma or eq.) 4 no each leaf, with Door-closer (Dorma / Geze or eq.) including cost of required Cut-Outs, decorative mouldings / finishing-items / melamine polish & Scaffolding as per Architectural & Acoustical Design & Instructions & Complete in all aspects .including all materials labour,finishing etcetera complete	As directed by Engineer-in-charge	As directed by Engineer in charge.
52.00	Providing groove to required size at specified location as directed by Engineer, at junction of brick masonry wall and Reinforced Cement Concrete beams or Column, at junction of composite masonry, including scaffolding, finishing, curing etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
53.00	Providing and laying vitrified rustic matt stone finish tiles having size 590 mili metre to 605 mili metre x 590 mili metre to 605 mili metre of 8 to 10 mili metre thickness and confirming to Indian Standard 15622-2006 (Group Bla) of approved make, shade and pattern for flooring in required position laid ?on a bed of 1:4 cement mortar including neat cement float, filling joints, curing and cleaning etcetera complete.	Bd.M.12 Page Number 385	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
54.00	Providing and laying Vitrified MATT finish having decorative type of size 1000 mili metre x 1000 mili metre of 8 to 10 mili metre thickness (on a existing flooring) with bonding chemical and Confirming to Indian Standard 15622-2006 (Group Bla) of approved make shade and pattern for flooring in required position laid on a bed of bonding chemical filling joints curing and cleaning etcetera complete.	Bd. M-12 page Number 388	As directed by Engineer in charge.
55.00	Providing and laying vitrified rustic matt stone finish tiles having size 590 mili metre to 605 mili metre x 590 mili metre to 605 mili metre to 8 to 10 mili metre thickness and confirming to Indian Standard 15622-2006 (Group Bla) of approved make, shade and pattern for dado & skirting in required position laid ?on a bed of 1:4 cement mortar including neat cement float, filling joints, curing and cleaning. etcetera complete.	Bd.M.12 Page Number 385	As directed by Engineer in charge.
56.00	Providing and fixing heavy duty inter locking concrete Coloured paving blocks of 80 mili metre thickness of having a strength of 300 Kilogram/Square Centi Metre of approved quality and shape on a bed of crushed sand of 25 to 30 mili metre thick including skirting joints and cleaning etcetera complete	As directed by Engineer in charge	As directed by Engineer in charge.
57.00	Providing and laying ceramic tiles having size 30 centi metre x 60 centi metre confirming to corresponding Indian Standard for dado and skirting in required position with readymade adhesive mortar of approved quality on plaster of 1:2 cement mortar including joint filling with white/ colour cement slurry cleaning curing etcetera complete.	Bd.M.13 Page Number 386.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
58.00	Providing and laying Antiskid Ceramic tiles of approved quality of size 30 centi metre x 30 centi metre and Confirming to Indian Standard 15622-2006 (Group-B IIA) for antiskid flooring in required position laid on a bed of 1:4 cement mortar including cement float, filling joint with cement slurry cleaning curing etcetera complete.	Bd. M-12 page Number 385	As directed by Engineer in charge.
59.00	Providing and laying machine cut machine Polished Kota stone flooring 25 mili metre to 30 mili metre thick and required width in plain/ diamond pattern on bed of 1:6 Cement Mortor including cement float, filling joints with neat cement slurry, curing, polishing and cleaning etcetera complete.	Bd.M.3 Page Number 380	As directed by Engineer in charge.
60.00	Providing Mirror polishing to Kota Stone including using all necessary stones and equipments cleaning, washing etcetera complete. For Flooring	As directed by Engineer in charge.	As directed by Engineer in charge.
61.00	Providing and laying in position flooring of telephone black / Amba White / Cat bary brown / Ruby red / Ocean Brown granite stone of approved shade and size 18 mili metre to 20 mili metre thick on bed 1:6 cement mortar including cement floats striking joints, pointing in Cement Mortor 1:3 curing and cleaning etcetera complete.	Bd.M. 3 B/Page Number 380	As directed by Engineer in charge.
62.00	Providing and fixing machine cut machine polished 18 mili metre to 20 mili metre thick telephone black / Amba White / Cat bary brown / RBI red / Ocean Brown granite stone for treads and risers of steps and staircases of approved colour and shade with full moulding and three grooved line for the treads on bed of 1:4 Cement mortar including float filling joints with neat cement slurry curing polishing and cleaning etcetera complete.	Bd. M.22 B/Page Number 390	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
63.00	Providing and laying telephone black / Amba White / Cadburybrown / Ruby red / Ocean Brown granite stone of 18 to 20 mili metre thick for door frame/ dado/ window boxing etcetera On Cement Mortor 1:6 including filling joints with polymer base filler nosing/moulding the sharp edges wherever necessary, curing, etcetera complete.	As directed by Engineer-In- Charge	As directed by Engineer in charge.
64.00	Providing and constructing granite kitchen platform with fixing of stainless steel sink 600 mili metre x 450 mili metre size as per detailed drawing including vertical both side polished kadappah stone 25 to 30 mili metre thick supports with kadappah top 35 to 40 mili metre thick and polished granite 16 to 20 mili metre top with side strips of granite at front and both sides of platform raised with two vertical granite supports 15 centi metre height and top granite of 75 x 40 centi metre including cutting, opening for sink of required size in kadappah as well as granite etcetera complete. (Platform top size 5.00 metre x 0.60 metre and height is 0.75 m)	As directed by Engineer in charge.	As directed by Engineer in charge.
65.00	Kitchen Trolley Providing and Fixing stainless steel kitchen trolley of overall 26 " height and 22" depth,supported on aluminium pipes ,trolley basket made out of 5 mili Mild Steeltainless steel rod fitted on telescopic channel of size 1.5 " x 20 " x 22 " on both sides of trolley of 12 " or above size, panel having 40 Kilogram load bearing capacity of trolley made out of 20 mili metrePUC coated plywood and colour combination as directed by E-I-C.Inner side of panel covered by white mica ,100 mili Mild Steels. decorative handle.(The width and height of individual compartments shall be kept as directed by Engineer-in-charge)	As directed by Engineer-in-charge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
66.00	Providing and applying priming coat on concrete/ masonary/ Asbestos Cement plastered surfaces including scaffolding if necessary, preparing the surface by thoroughly cleaning oil, grease, dirt and other foreign matter and sand papering as required etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
67.00	Providing and applying washable oil-bound distemper of approved colour and shade to old and new surfaces in two coats including scaffolding, preparing the surfaces. (excluding the primer coat.) etcetera complete.	Bd.P.5 Page Number 413	As directed by Engineer in charge.
68.00	Providing and applying 2 coats of 100% Pure acrylic low VOC and APEO & HCHO free water based paint of approved colour that belongs to class 1 flame spread resistance of approved make Paint should provide durable and long lasting silk finish with a high crack tolerance of upto 1 mili metre Paint should have an oustanding washability with high resistance to wide range of bacteria and fungus. Paint has to be applied on smooth and uniform surface prepared by an acrylic copolymer low VOC & Odour putty. This surface should be primed with water based low VOC Primer. The work activity should cover all aspects of applying paints from surface preparation as directed by Engineer in charge.	As directed by Engineer in charge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
69.00	Providing and applying 2 Coats of 100% Pure acrylic water based paint with special heat reflectance property to withstand the harsh climate for period of atleast 10 years of approved make. Paint system should provide durable and long lasting finish with DFT of min 90 microns and should protect against concrete carbonation with R value of minimum 600 and equivalent concrete layer thickness value of min 150 centi metre Paint should have breathability property and should be able to cover hairline cracks in the surface upto 0.5 mili metre The paint has to be applied on a coat of high quality acrylic copolymer based alkali resistant primer with excellent penetrating properties including cleaning, with all leads and lifts at all levels etcetera complete, as directed by Engineer in charge.	As directed by Engineer in charge	As directed by Engineer in charge.
70.00	Providing and applying Dezzly texture paint of Hammer / Screetech on the external plastered surface of approved quality. As directed by Engineer in charge	As Directed by Engineer In Charge	As directed by Engineer in charge.
71.00	Providing and applying two coats Apex Ultima Puranature Anti-Pollution Or equivalent approved brand, paint should decomposes organic substances and inorganic gases(NOx, VOC's, CO, SOx, formaldehydes, etcetera) in presence of natural or artificial light. It contains Graphene and nanoparticles of titanium oxide. and Absorbs CO2 (4.8 Kilogram/15 l). plaster crack should be filled by Acrylic base Crack seal/Textured Crack filler, Paint has to applied on one coat of Apex Ultima Puranature Anti-Pollution Primer or Equivalent. Warranty Should be given by the Manufaturer The work should be done by the Manufacturer Recommended applicator and he should be able to furnish stage wise onsite technical reports from the concerned company technologist.	As directed by Engineer-in-charge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
72.00	Providing and fixing frame with / without ventilator of size as specified with Country cut teak wood for doors and windows including chamfering, rounding, rebating, iron holdfast of size 300 mili metre x 40 mili metre x 5 mili metre with oil painting, etcetera complete	As directed by Engineer in charge.	As directed by Engineer in charge.
73.00	Providing and fixing Country teak wood Four leaf paneled shutters, 35 mili metre thick style and rail and 25 mili metre thick panels without ventilator as per detailed drawing excluding the door frame, stainless steel fixtures and fastening and finishing the wood work with oil painting 3 coats complete	As directed by Engineer in charge.	As directed by Engineer in charge.
74.00	Providing and fixing 34 mili metre thick moulded door shutter consisting of solid core single leaf flush door of 30 mili metre thickness lipped with 15 mili metre(5 mili metre x 3) thick x 30 mili metre width on one style and top rail and 10 mili metre(5 mili metre x 2) thick x 30 mili metre width on other style and bottom rails. The inner panels laminated with 2 mili metre thick termite proof, water proof and fire resistant moulded Polyvenyle Chloride sheet with 2,4,6 design in different plain and /or prelim colours on one side after routing the moulded design on flush doors and 2 mili metreplain and /or pre lam Polyvenyle Chloride on other side using rubber adhesive on flush door and solvent cement adhesive on the Polyvenyle Chloride lipping etcetera as per direction of Engineer in charge and manufacturers specification and drawing etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
75.00	Providing and fixing in position powder coated aluminium louvered windows / ventilator of various sizes with powder coating as per detailed drawing and specifications including aluminium frames 80 x 38 mili metre x 1.22 mili metre box type, 5 mili metre thick sheet glass louvers, of approved quality etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
76.00	Providing and Fixing 30 mili metre thick BOTH SIDE PRELAMINATED SOLID PANEL Polyvenyle Chloride DOOR SHUTTER consisting of frame made out of Mild Steel tubes of 19 guage thickness and, size 19 x 19 mili metre for styles and 15 x15 mili metre for the top and bottom rails, Mild Steel frame shall have a coat of metel primer of approved make and manufacture. Mild Steel frame shall be covered with heat mouled Polyvenyle Chloride 'C' channel made from 5 mili metre(+/0.25) thick prelaminated sheet of density 600 Kilogram/cbm ,of size 30 mili metre thickness 70 mili metre width out of which 50 mili metre shall be flat and 20 mili metre shall be tapered in 45 angle on either side forming stiles ; and 5 mili metre thick ,95 mili metre wide Polyvenyle Chloride sheet out of which 75 mili metre shall be falt and 20 mili metre shall be tapered in 45 on the inner side to form top and bottom rail and 115 mili metre wide Polyvenyle Chloride sheet out of which 75 mili metre shall be falt and 20 mili metre shall be tapered on both sides to form lock rail.Top,bottom and lock rail shall be provided either side of the panel. An additional 5 mili metre(+/0.25) thick Polyvenyle Chloride strip of 20 mili metre width is to be stuck on the bottom side of the ' c ' channel prelaminated paneling of 5 mili	As directed by Engineer in charge.	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
	metre(+/0.25) thick Polyvenyle Chloride sheet to be fitted inside the Mild Steel frame welded/ sealed to the styles and rails with 5 mili metre(+/0.25) x 30 mili metrePolyvenyle Chloride sheet beading on either side and joined together with solvent cement adhesive etcetera ,10 mili metre thickness (5 mili metre(+/0.25) x 2 nos) 20 mili metre wide cross Polyvenyle Chloride sheet as gap insert for the rail and bottom rail. Door to be fixed to frames with 3 nos Mild Steelpowder coated but hinges of size 100 mili metre x 25 mili metre x 2 mili metre using 32 mili metre long steel screws drilled suitable to pass through both the walls of the Mild Steel tube. Other hardwares should be fixed with 19 x 6 mili metre size steel screws including fixture fasting. Complete as per direction of engineer in charge.		
77.00	Providing and fixing in position. (as per Indian Standard 1868 / 1982) Aluminium sliding window of two tracks with rectangular pipe having overall dimension 63.50 x 38.10 x 1.02 mili metre at weight 0.547 Kilogram/Running Metre and window frame bottom track section 61.85 x 31.75 x 1.20 mili metre at weight 0.695 Kilogram/Running Metre Top and side track section 61.85 x 31.75 x 1.30 mili metre at weight 0.659 Kilogram/Running Metre The shutter should be of bearing bottom 40 x 18 x 1.25 mili metre at weight 0.417 Kilogram/Running Metre Inter locking section 40 x 18 x 1.10 mili metre at weight 0.469 Kilogram/Running Metre And handle section 40 x 18 x 1.25 mili metre at weight 0.417 Kilogram/Running Metre and top section 40 x 18 x 1.25 mili metre at weight 0.417 Kilogram/Running Metre As per detailed drawings and as directed by Engineer in charge with all necessary Aluminium sections fixtures and fastenings such as roller bearing in nylon casting and self locking catch fitted in vertical section of shutter including 5 mili metre thick plain glass with all required screws and nuts etcetera complete. With powder coating with box	As directed by Engineer in charge.	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
78.00	Providing and fixing in position (as per 1868 / 1982) Aluminium sliding window of three tracks with rectangular pipe 95 x 38.10 x 0.90 mili metre at weight 0.637 Kilogram/Running Metre with window frame bottom track section 92 x 31.75 x 1.30 mili metre at weight 1.070 Kilogram/Running metre Top and side track section 92 x 31.75 x 1.30 mili metre at weight 0.933 Kilogram/Running Metre The shutter should be of bearing bottom 40 x 18 x 1.25 mili metre at weight 0.417 Kilogram/Running Metre Inter locking section 40 x 18 x 1.10 mili metre at weight 0.469 Kilogram/Running Metre and handle and top section 40 x 18 x 1.25 mili metre at weight o.417 Kilogram/Running Metre As per detailed drawings and as directed by Engineer-in-charge with all necessary Aluminium sections fixtures and fastenings such as roller bearing in nylon casting and self locking catch fitted in vertical section of shutter including 5 mili metre thick plain glass and aluminium mosquito net shutter with stainless steel jail with all required screws and nuts etcetera complete. With powder coating with box	As directed by Engineer in charge.	As directed by Engineer in charge.
79.00	Sliding Window- 3 Track (2 Glass shutter + 1 flymesh) of approved make with DGU, providing and fixing of Sliding Window- 3 Track (2 Glass shutter + 1 flymesh). For details refer to Specifications. As directed by Engineer in charge.	As directed by Engineer in charge	As directed by Engineer in charge.
80.00	Providing and fixing M-40 grade thick vibrated pull cast or similar type concrete frame with chamfer conforming to Indian Standard 6524-1983 having 6 mili metre diametre bars 3 Numbers And stirrups @250 mili metre centre to centre and fixing in wall with 6 Nos of hold fast of 12 mili metre diametre bars 500 mili metre long including primer and oil painting etcetera complete) frame size 60 mili metre x 100 mili metre	As directed by Engineer in charge.	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
81.00	Providing and fixing collapsible steel gate in one / two leaves with hot rolled vertical channels of 18 x 9 x 3 mili metre minimum size, crossings of Mild Steel flats of size 18 x 5 mili Metre or E section for runner of minimum 40 x 6 mili metre size for flange, Mild Steel flat for top runner of minimum size 40 x 12 mili metre with roller wheels confirming to grade F.G. 150 fitted with snap headed rivets of minimum size 6 mili metre maximum spacing of vertical channels be 100 mili metre enclosed gate position and clear space of 150 mili metre between two sets of crossings with hold fasts, stoppers, spaces, handles, locking arrangement and one coat of red lead primer and oil painting etcetera complete. (Indian Standard 105211983).	BD-T-57 Page Number 511	As directed by Engineer in charge.
82.00	Providing and fixing aluminium grill diamond mesh type DG202 of 7.5 mili metre thick including fixing in position anodised aluminium frame section of 80 x 38 mili metre x 1.22 mili metre size box, cutting to the required size with all wastage, labour, lead lift etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
83.00	Providing and Fixing mat finish stainless steel (of 302 grade) railing with top pipe of 50 mili metre diametre and vertical pipe of 38 mili metre diametre at 0.60 metre centre to centre or as required and horizontal pipes of 25 mili metre diametre in three rows, all pipes of 2 mili metre thick including buffing,fabricating fixtures and fastening including pipe base of appropriate diameter and ball base of 75 mili metre diametre above newel post of 75 mili metre diametre etcetera complete (Prior approval of sample and brand by Executive Engineer is necessary before use)	As directed by Engineer Incharge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
84.00	Providing and fixing C.P. 2 Way BIB cock with wall flange of approved make including necessary sockets/ union nut etcetera complete as directed by Engineer in charge.	As directed by Engineer in charge	As directed by Engineer in charge.
85.00	Providing and fixing 25 mili metre diameter water meter with non-return valve including strainer, sockets/ union nut and including water meter box making locking arrangement and lock. [Without chamber].	Bd.V.7 Page Number 554	As directed by Engineer in charge.
86.00	Providing and fixing 15 mili metre diametre screw down bib/ stop tap of brass including necessary socket union nut complete.	Bd.V.8 Page Number 554	As directed by Engineer in charge.
87.00	Providing and fixing 20 mili metre diametre screw down bib/ stop tap of brass including necessary socket union nut complete.	Bd.V.8 Page Number 554	As directed by Engineer in charge.
88.00	Providing and fixing screw down 15 mili metre diametre wheeled stop tap of brass including necessary sockets/union nut complete	Bd.V.9 Page Number 555	As directed by Engineer in charge.
89.00	Providing and fixing push cock (Self closing tap) symet type of 15 mili metre diametre including necessary socket, testing etcetera complete.	As directed by Engineer-in- charge.	As directed by Engineer in charge.
90.00	Providing and fixing White glazed with bottle trap earthenware Wash Hand Basin of 63x45 centi metre size including cold water piller taps, brackets, rubber plugs and brass chain, stop tap, chromium plate bottle trap and necessary pipe connections including UPAC waste pipe and trap upto the outside face of the wall, making good the damaged surface, testing etcetera complete.	BDV.-30 Page Number616	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
91.00	Providing and fixing Oval Type Under Counter Wash Hand Basin of 420 x 590 x 195 mili metre size with pillar cock, C.P.Angular stop cock, long thread of approved make continental including SS bottle trap of necessary pipe connection up to the outside face of the wall, having Telephonic Black / Colour Granite of 180 mili metre thick fixed on Black Kadappa Framework, etcetera Complete as directed by Engineer in charge.	As directed by Engineer in charge	As directed by Engineer in charge.
92.00	Providing and fixing 15 centi metre x 10 centi metre salt glazed stoneware gully trap in cement concrete 1:4:8 outside the building including cast iron grating in the sink, connecting glazed stoneware pipe, brick masonry chamber with cast iron lid and cast iron grating for the gully trap.	Bd.V.38, Page Number 572	As directed by Engineer in charge.
93.00	Providing and laying concrete pipes of Indian Standard NP. class of 150 mili metre diameter in proper line, level and slope including necessary collars, excavation, laying, fixing with collars in cement mortar 1:1 and refilling the trench complete.	Bd.V.41, Page Number 573	As directed by Engineer in charge.
94.00	Providing and laying concrete pipes of Indian Standard NP. class of 300 mili metre diameter in proper line, level and slope including necessary collars, excavation, laying, fixing with collars in cement mortar 1:1 and refilling the trench complete.	Bd.V.41, Page Number 573	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
95.00	Providing, constructing and fixing 250 mili metre diametre Inspection chamber made up of Unplastisized Polyvenyle Chloride material of thickness 3.5 mili metre and height of 259 mili metre with inlet and outlet of 110 mili metre diametre with 75 mili metre diametre U Trap, Ultra shaft pipe of Unplastisized Polyvenyle Chloride material having height of 470 mili metre and fixing Ultra 250 mili metre diametre Unplastisized Polyvenyle Chloride cover and frame in 150 mili metre thick in Cement Concrete1:2:4, having crushed sand bed of 100 mili metre thick of size 550 mili metre diametre Including excavation and refilling the sides of chamber by crushed sand cushioning 150 mili metre thickness, connecting all required Unplastisized Polyvenyle Chloride fittings with rubber lubricant etcetera complete.	Specfications	As directed by Engineer in charge.
96.00	Providing, constructing and fixing 450 mili metre diametre Inspection chamber made up of Polypropylene / polyethylene material of thickness 3.5 mili metre and height of 388 mili metre with 160 or 200 mili metreain inlet (s) outlet and 110 and / or 160 mili metrebranch inlets, with 450 mili metre diametre Ultra shaft pipe of HDPE material having height of 460 mm, having Reinforced Cement Concrete cover and frame fixing in 150 mili metre thick in Cement Concrete1:2:4, having crushed sand bed of 150 mili metre thick of size 750 mili metre diametre Including excavation and refilling the sides of chamber by sand crushed cushioning 150 mili metre thickness, connecting all required Unplastisized Polyvenyle Chloride fittings with rubber lubricant etcetera complete.	As Directected By Engineer Incharge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
97.00	Providing and fixing 450 mili metre x 550 mili metre size superior type Belgium mirror with 16 mili metre diametre nickel plated towel rod etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
98.00	Providing and fixing chromium plated towel rod 16 mili metre diametre and 75 centi metre in length including all accessories complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
99.00	Providing and fixing stainless steel sink of size 600 x 510 x 200 mili metre incluidng coupling, outlet pipe, elbow and other necessary fitting, finishing etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
100.00	Providing and fixing C.P. Angular stop clock with wall flange of approved make continental including necessary sockets/union nut etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
101.00	Providing and fixing C.P. BIB cock with wall flange of approved make including necessary sockets/ union nut etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
102.00	Providing and fixing C.P. sink cock with raised J" shaped swinging casted spout ofapproved make including necessary sockets/ union nut etcetera complete."	As directed by Engineer in charge	As directed by Engineer in charge.
103.00	Providing and fixing 40 mili metre diametre Ball cock medium type with Polyvenyle Chloride float including sockets and necessary fittings and tested as per municipal requirements etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
104.00	Providing and fixing 15 mili metre diametre Ball cock medium type with Polyvenyle Chloride float including sockets and necessary fittings and tested as per municipal requirement etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
105.00	Providing and fixing wall mixer with over head shower, shower arm, hand shower with wall bracket having flow rate upto 12 liters/minutes of Jaquar/Cera/Hindware/Perryware or equivalent make including all necessary pipes, fittings etc. complete as directed by Engineer In Charge. (Make shall conform to manufacturer's Green product and shall got approved from the Engineer In Charge.)	As directed by Engineer in charge	As directed by Engineer in charge.
106.00	Providing and fixing C.P. wall mixer with provision for overhead shower with 115 mili metre long bend pipe and wall flange of approved make including necessary sockets/union nut etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
107.00	Providing and fixing Orissa Pan of size 580x445x260 mili metre with approved make flush valve including trap, Cast Iron soil and vent pipe upto outside face of wall including 100 mili metre diametre Cast Iron plug, bend and necessary pipe connection, etcetera complete. As directed by Engineer in charge.	As directed by Engineer in charge	As directed by Engineer in charge.
108.00	Providing and fixing white Opal series European type wall-hung, of size 400 mili metrex370mmx575 mili metre with approved make flush valve including soil pipe, vent pipe upto outside face of wall, 100 mili metre diametre Cast Iron plug bend inlet pipe all fittings, cutting & making good walls, floors etcetera as directed by Engineer in charge.	As directed by Engineer in charge	As directed by Engineer in charge.
109.00	Providing and fixing white glazed earthenware lipped flat back/corner type Urinal with Polyvenyle Chloride 5 liters flushing cistern with fittings, inlet pipe with stop tap, brackets for fixing the cistern, 32 mili metre diametre Polyvenyle Chloride flush pipe with fitting including lead soil pipe, lead trap and soil pipe connection up to the outside face of wall.	Bd.V.26 Page Number 564	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
110.00	Providing and fixing 75 mili metre diametre stabiliser pipe/ Poly Venyle Chloride soil vent/waste pipe and with necessary fixtures and fitting such as bends, tees, single junctions, slotted vent, clamps etcetera complete	As directed by Engineer in charge.	As directed by Engineer in charge.
111.00	Providing and fixing 100 mili metre diametre stabiliser pipe/ Poly Venyle Chloride soil vent/waste pipe and with necessary fixtures and fitting such as bends, tees, single junctions, slotted vent, clamps etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
112.00	Providing, laying and fixing ,jointing Eco- drain 110 mili metre SN 8 Nu- Drain Unplastisized Polyvenyle Chloride pipes or of equivalent make, manufacture as per EN 13476 or equivalent as per Indian Standard15328 with fittings such a bends, tees, coupler, etcetera jointing with rubber lubricant including necessary excavation, trench refilling with selective excavated material etcetera complete.	As Directected By Engineer Incharge	As directed by Engineer in charge.
113.00	Providing, laying and fixing ,jointing Eco- drain 160 mili metre SN 4 Nu- Drain Unplastisized Polyvenyle Chloride pipes or of equivalent make, manufacture as per EN 13476 or equivalent as per Indian Standard15328 with fittings such a bends, tees, coupler, etcetera jointing with rubber lubricant including necessary excavation, trench refilling with selective excavated materialetcetera complete.	As Directected By Engineer Incharge	As directed by Engineer in charge.
114.00	Providing and fixing H.D.P container Syntex or alike one piece moulded water tank made out of low density polythyler and built corrugation including of delivery up to destination hoisting and fixing of accessories such as inlet, outlet overflow of all tanks capacity above 1000 to 20,000 litres	As directed by Engineer in charge	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
115.00	Providing and fixing on walls/ ceiling/ floor 15 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
116.00	Providing and fixing on walls/ceiling/floor 20 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
117.00	Providing and fixing on walls/ ceiling/ floor 25 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
118.00	Providing and fixing on walls/ ceiling/ floor 32 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
119.00	Providing and fixing on walls /ceiling/ floor 40 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
120.00	Providing and fixing on walls/ ceiling/ floor 50 mili metre diametre CPolyvenyle Chloride pipe with necessary fittings, remaking good the demolished portion etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
121.00	Providing and fixing 15 centi metre rigid Polyvenyle Chloride Nahani trap including Polyvenyle Chloride grating ,bend,connectingpiece of Unplastisized Polyvenyle Chloride pipe up to the outside face of wall ,making the good damaged surface and testing etcetera complete (Prior approval of sample and brand by Ex. Engr. is necessary before use)	Specfications	As directed by Engineer in charge.
122.00	Providing and fixing Poly Venyle Chloride Rain water pipes of 160 mili metre outer diameter and having wall thickness of 2.2 to 2.7 mili metreconfirming to Indian Standard 13592-1992 including proper rainwater receiving recess with Poly Venyle Chloride plug, bend, necessary fittings, such as, offsets, shoes, inluding fixing the pipe on wall using approved wooden cleats projecting 25 mili metre to 40 mili metre from face of wall a fixing with clips of approved quality and number ,filing the joint using rubber gasket with solvent cement and properly resting the shoe of pipes on Cement Concrete or masonry blocks, including necessary scaffolding and maintenance for 3 yrs for any leakages or dislocations of pipes. All the Poly Venyle Chloride fittings and additional 2 piece socket clips shall be got approved from engineer in charge etcetera complete.	As directed by Engineer Incharge	As directed by Engineer in charge.
123.00	Providing and laying in trenches 15 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
124.00	Providing and laying in trenches 20 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
125.00	Providing and laying in trenches 25 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
126.00	Providing and laying in trenches 32 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
127.00	Providing and laying in trenches 40 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.
128.00	Providing and laying in trenches 50 mili metre diameter CPolyvenyle Chloride pipe including necessary excavation, fittings. Refilling trenches etcetera complete. Including removing existing pipe line if necessary and conveying and stacking the same in PWD chowky or as directed etcetera complete.	As directed by Engineer in charge	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
129.00	Providing and fixing in position Unplastisized Polyvenyle Chloride ultra violet stabilized 110 mili metre outer diameter cowl dome confirming to Indian Standard-4985 including making joints with solvent cement etcetera complete	Specfications	As directed by Engineer in charge.
130.00	Providing and fixing Glass self 125 mili metre wide and 600 mili metre long with necessary chromium plated brackets providing Teak Wood gutties etcetera complete	Specfications	As directed by Engineer in charge.
131.00	Providing and fixing 90 centi metre x 60 centi metre Granite plate engraving 10 centi metre height letter, figures including painting the lefters/figures with approved colour and shade complete	Bd.W.7 Page Number586	As directed by Engineer in charge.
132.00	Providing & Supplying corrosion inhibiting admixture in concrete to protect steel bars for all concrete in every part Polyalk CP 293 of approved make & approved by Engineer in charge migrating, non-nitrite based corrosion inhibiting admixture shall be added at a dose of 3 Kilograms per Cubic Metre of concrete. The admixture should protect both cathodic and anodic sites and have been accredited by Indian Roads Congress, recommended for use by Ministry of Road Transport & Highways and should have a 4 year track record of use in both the Gulf Region and Indiametre Admixture should have evaluated test reports demonstrating a corrosion rate of zero coulombs after 9 test cycles as per ASTM G 109 when tested from a research institution NBA accredited Grade A and internationally ranked among top 5 research institutions in the world in Annual Survey conducted by Georgia Institute of Technology ranking of research institutions. PH of admixture should be alkaline in nature, specific gravity of 0.99 – 1.1, colour : brownish. The contractor must intimate the engineer in charge prior to addition in concrete for recording. If the admixture is put in the concrete mix at the batching plant, a written record of the amount of admixture used shall be supplied to the engineer. The engineer must ensure that the specified dosage of admixture is added in the concrete mix. (Material Cost Analysis only)	As directed by Engineer in charge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
133.00	Providing and fixing in position alluminium strips of size 50 mili metre x 3 mili metre for nosing the steps including fixing with screws and raval plugs, bending and cutting to the required shape and size, finishing with paint, necessary mortar bedding of 1:3 cement mortar to get exact line and level including watering and curing etcetera complete	As direected by Engineer in charge.	As directed by Engineer in charge.
134.00	Providing and fixing lioghtening conductor system comprising of erecting Air-Termination consisting of tubular copper rod of 25 mili metre diametre 1.2 mili metre thick with multiple points head 1.2 Metric Tonne. long (Heavy Duty) welded or clamped to Galvanised Iron pipe pole B grade 50 mili metre diametre of requiired length with Mild Steel round bnase plate 25 centi metre diam and 10 mili metre thick at bottom embeded in cement concrete 1:3:6 dfoundation of size 45 centi metre diam x 45 centi metre Height and providing earthing with copper earth plate of size 60 x 60 x 0.3 centi metre with cadmium plated nut bolts to fix earthing strip burried in specially prepared earth pits 1.5 metre below ground level with 40 Kilogram charcoal and salt with altemate layers of charcoal and salt and Galvanised Iron pipe 40 mili metre diametre 2 meter length burried in earthe upto earthling plate remining portion above ground level for watering and refilling comcpete Note- Copper strip fropm lightening conductor is not considered in this item.	BDW 1 Page 581	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
135.00	Supply, fixing and installation of 4mm thick Aluminium Composite Panel (ACP) of approved colour for external cladding in combination of solid and metallic colours, including all necessary Framework, support and complete weather sealing as per architectural drawing. The Aluminium Composite Panel (ACP) should be made out of thermoplastic core of low-density polyethylene LDPE (100% virgin mix), sandwiched between two aluminium sheets of ALLOY GRADE-5000 series, each not less than 0.50 mm thick, total thickness of aluminium composite panels not to be less than 4 mm, the exposed surface thereof shall have Stove lacquered finishing coat not less than (26 + - 2) micron (containing minimum 70% kynar 500 based PVDF) of colour and shade as per architectural design. The inside surface (facing the building exterior surface)shall have polyster based powder coating not less than 25 Micron with protective peel-off foil on the exterior face (peel off film will in no case leave any adhesive mark over the composite panel surface after it is peeled off). The supporting framework shall be made out of 50 mm X25mm X 3mm thick Aluminium section to be spaced horizontally and vertically for fixing of panel of size 900 mm X 1200 mm and fixed to the building structure as per design through 50mm X50mm X5 mm MS angle clamps prefixed to masonry or slab, columns with Hilti make anchor fastener screws. The fixing of panel to be done with the help of VHB tapes and screws and all the sealing of joints to be done with weather sealent Silicon as directed by Engineer-in-charge. (Prior permission of S.E. is necessary before inclusion of this item in estimate)	As directed by Engineer in charge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
136.00	Providing soak pit of size 120 centi metre x 120 centi metre x 120 centi metre including excavating and filling with brick-bats.	Bd.V.46, Page Number 576	As directed by Engineer in charge.
137.00	RWH - Shallow Percolation Pit providing, constructing 2.0m deep shallow depth percolation pit comprising of 1.0m dia pre-cast Reinforced Cement Concrete rings, 300 mili metre thick side filling around outside of Reinforced Cement Concrete rings (annular space) with 40 mili metre size boulders including filling of percolation pit up to 0.5m depth (from bottom up) with 25-75 mili metre clean washed gravels followed by 0.5m depth of 10-25 mili metre of clean washed stones followed by 0.5m of washed river fine aggregate (natural sand/crushed sand VSI grade finely washed etcetera) including netlon mesh between each gravel/fine aggregate (natural sand/crushed sand VSI grade finely washed etcetera) media layer including covering with Reinforced Cement Concrete slab, manhole frame & cover, Polyvenyle Chloride rungs etcetera including arrangement for inlet & outlet pipe, excavation & backfilling as shown in the drawing. The rate shall be inclusive of all labour, material, wastage, scaffolding, transportation, taxes, including all leads, lifts at all levels. All material should be of approved make. All works complete as per the drawing, technical specification and direction of the Engineer in charge	As directed by Engineer in charge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
138.00	Providing and installing bio digester unit based on DRDO technology made of fibre reinforced plastic (FRP) having composition and following technical specifications and including necessary pipe and accessories up to 3 meter length, excluding the necessary excavation for installing the bio digester. Percentage of fibre glass (glass content in fibre glass should be minimum 30%): -33.33% Percentage of polyester resin: - 66.67% Water absorption (as per ASTM):-0.30% Flammability as per ASTM Tensile strength:-115 MPA Specific Gravity at 25 degree centigrade 1.45 Izod impact strength:-65KJ/M2 Heat defection/distort temperature:-65deg C Corrosion resistance (Non Corrosive) fitted with Inlet pipe size rigid Polyvenyle Chloride: -100 mili metre Outlet pipe size rigid Polyvenyle Chloride:-80 mili metre Gas outlet rigid Polyvenyle Chloride with Valve: 20 mili metre Bacteria immobilization Polyvenyle Chloride mattes (on all partition) With DRDO TOT licensee and latest batch certificate(month & year of supply) and capacity as below c) Up to 25 user size (1.50 metrex1.0mx1.0m), Capacity of biodgester:- 1500 liters, Area of top, bottom and side walls:- 8 Square Metre, Area of partition walls: 2 Square Metre, Total weight of frp: - 82.80 Kilogram, Bacteria inoculums quantity: - 600 liters, Minimum thickness of side walls / top and bottom: 5 mili metre, Number of inside partitions: - 3, Minimum thickness of partition wall: 3 mili metre	As directed by Engineer Incharge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
139.00	Providing and installing bio digester unit based on DRDO technology made of fibre reinforced plastic (FRP) having composition and following technical specifications and including necessary pipe and accessories up to 3 meter length, excluding the necessary excavation for installing the bio digester. Percentage of fibre glass (glass content in fibre glass should be minimum 30%): -33.33% Percentage of polyester resin: - 66.67% Water absorption (as per ASTM):-0.30% Flammability as per ASTM Tensile strength:-115 MPA Specific Gravity at 25 degree centigrade 1.45 Izod impact strength:-65KJ/M2 Heat defection/distort temperature:-65deg C Corrosion resistance (Non Corrosive) fitted with Inlet pipe size rigid Polyvenyle Chloride: -100 mili metre Outlet pipe size rigid Polyvenyle Chloride:-80 mili metre Gas outlet rigid Polyvenyle Chloride with Valve: 20 mili metre Bacteria immobilization Polyvenyle Chloride mattes (on all partition) With DRDO TOT licensee and latest batch certificate(month & year of supply) and capacity as below d) Up to 40 user size (2.0mx1.0mx1.0m), Capacity of biodgester:-2000 liters, Area of top, bottom and side walls: - 10 Square Metre, Area of partition walls: 3 Square Metre, Total weight of frp: - 106.20 Kilogram, Bacteria inoculums quantity: - 600 liters, Minimum thickness of side walls / top and bottom: 5 mili metre, Number of inside partitions: - 3, Minimum thickness of partition wall: 3 mili metre	As directed by Engineer Incharge	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
140.00	Providing and fixing board displaying information, such as 'Name of work, Tender cost, Name of Contractor, Work completion and liability period etcetera', having rectangular shape of 1.20 metre x 0.90 metre size made out 18 gauge (1.25 mili metre) thick mild steel sheet painted with one coat of Zinc chromate stoving primer and two coats of enamel paint on front side and grey stove enamel on back side and border / messages / symbols etcetera with approved colour shade paint complete, on Mild Steelangle of size 35 x 35 x 3 mili metre frame with properly cross braced Mild Steel angles of size 35 mili metrex35 mili metrex3 mili metre duly painted including Two Mild Steel angle iron posts of size 65 mili metre x 65 mili metre x 6 mili metre, 3.65 meter long painted with alternate black and white bands of 25 Centi Metre width including all fixtures etceteraand fixing the boards in 1:4:8 concrete block of size 60 Centi Metre x 60 Centi Metre x 75 Centi Metre including, excavation, refilling, transportation, and labour etcetera complete.	MORTH 801	As directed by Engineer in charge.
141.00	Providing and laying in situ /Ready Mix cement concrete M-20 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete work in foundations like raft, strip foundations, grillage and footings of Reinforced Cement Concrete columns and steel stanchions etcetera including bailing out water, Steel centering formwork, laying/ pumping cover blocks, compaction and curing roughening the surface if special finish is to be provided (Excluding reinforcement and structural steel) etcetera complete, with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.3 Page Number 298 and B.7, Page Number38	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
142.00	Providing and laying Cast in situ/Ready Mix cement concrete M-20 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete columns as per detailed designs and drawing or as directed including steel centering, formwork, cover blocks, laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete,(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.5 Page Number 300 and B.7, Page.Number 38	As directed by Engineer in charge.
143.00	Providing and laying Cast in situ/Ready Mix cement concrete M-20 of trap / granite /quartzite/ gneiss metal for Reinforced Cement Concrete beams and lintels as per detailed designs and drawings or as directed including steel centering, formwork, cover blocks, laying/ pumping, compactionand roughening the surface if special finish is to be provided and curing etcetera complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.6 Page Number 300 and B.7, Page Number38	As directed by Engineer in charge.
144.00	Providing fly ash brick masonry with conventional/ Indian Standard type bricks in cement mortar 1:6 in superstructure including striking joints, raking out joints, watering and scaffolding etcetera Complete	As director by engineer incharge and BDG- 2 and 5	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
145.00	Providing and fixing 50 mili metre diametre medium class Galvanised Ironpipe gate with wicket gate of approved drawing with all fixtures and fittings in two leaves with strong hold fast embedded in Cement Concrete block at top and bottom with locking arrangement including cutting, bending, making holes and with one coat of primer etcetera complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
146.00	Providing and erecting 1.5 metre high wire fencing with seven rows of barbed wire supported on Mild SteelAngles (50 mili metre x 50 mili metre x 6 mili metre) at 2.5 Mild Steel, Center to center including excavating pits for foundqtion, fixing post in cement cocnrete 1:4:8 of size 45 x 45 x 45 centi metre fastening the wire and painting the Mild SteelAngles with one coat of red lead primer and two coats of painting etcetera complete.	Bd.W.3 Page Number583	As directed by Engineer in charge.
147.00	Excavation for roadway in earth, soil of all sorts, sand, gravel or soft murum including dressing section to the required grade, camber and side slopes and conveying the excavated materials with all lifts upto a lead of 50 metre and spreading for embankment or stacking as directed.	MORTH 301	As directed by Engineer in charge.
148.00	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at Optimum Moisture Content, carriage of mixed Material to work site, spreading in uniform layers with motor grader/ Paver on prepared surface and compacting with vibratory roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - I Material	MORTH 401	As directed by Engineer in charge.
149.00	Supplying hard murum/ kankar at the road site, including conveying and stacking complete.	MORTH 408	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
150.00	Spreading hard murum/ soft murum/ gravel or kankar for side width complete	MORTH 408	As directed by Engineer in charge.
151.00	Compacting the hard murum side widths including laying in layers on each side with vibratory roller including artificial watering etcetera complete.	MORTH 408	As directed by Engineer in charge.
152.00	Construction of dry lean cement concrete Sub- base over a prepared sub-grade with coarse and fine aggregate (Natural Sand/ VSI grade finely washed crushed sand) conforming to IS: 383, the size of coarse aggregate not exceeding 25 mili metre,, cement content not to be less than 150 Kilogram/ Cubic Metre, Optimum Moisture Content (OMC)to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer-in-charge, compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etcetera complete.	MORTH 601	As directed by Engineer in charge.
153.00	Providing and laying in-situ M-30 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement, coarse and fine aggregate(VSI grade finely washed crushed sand) conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver, compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-in-charge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6 metre X 0.6 metre centre to centre, admeasuring 80 mili metre at bottom and 40 mili metre at top with depth of 75 mili metre and maintaining the same throughout curing period by any other method approved by Engineer-in-charge.	MORTH 602	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
154.00	Providing and laying in situ cement concrete M -30 with tremix treatment for 200 mili metre thickness for Concrete Road is including laying plastic sheet for 125 micron thickness with groove cutting of 4 mili metre wide and 20 mili metre deep with necessary refilling with polysuphide sealant (Pouring grade) confirming to BS : 5212 - 1989 into sawed groove widened at top for sealant reservoir of specified size and shape as per detailed drawing including fixing Polyethylene foam backer rod of required diameter (excluding reinforcement) with coarsen and fine aggregate Using V.S.I. Quality Artificial Sand etcetera complete	MORTH 602	As directed by Engineer in charge.
155.00	Providing and fixing in position Thermo Mechanical Treated (TMT) FE 500, tie bars precoated with anticorrosive epoxy paint of 12 mili metre diametre 70 centi metre long and at 30.00 centi metre centre to centre and wherever directed including handling, straightening wrapping with paper of approved quality for half length, necessary cutting, handling, straightening, supported by assembly of Thermo Mechanical Treated (TMT) FE 500, chairs with proper alignment etcetera complete.	MORTH 602.6.4.2	As directed by Engineer in charge.
156.00	Conveying materials obtained from road cutting including all lifts, laying in layers of 20 centi metre to 30 centi metre breaking clods, dressing to the required lines, curves, grades and section, watering and compacting to not less than 97% of standard Proctor density for a lead of over 50 metre to 300 metre inclusive from the site of excavation to the site of deposition as directed.	MORTH 305	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
157.00	Providing and laying Cast in situ/Ready Mix cement concrete M-20 of trap/ granite / quartzite/ gneiss metal for Reinforced Cement Concrete slabs and landings as per detailed designs and drawings including steel centering, formwork, cover blocks, laying/ pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etcetera complete,(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.8 Page Number 302 and B.7, Page Number38	As directed by Engineer in charge.
158.00	Providing and laying Cast in situ/Ready Mix cement concrete M-20 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete chajja as per detailed design and drawings including steel centering, formwork, cover blocks, laying/ pumping, compacting and roughening the surface if special finish is to be provided and curing complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.9 Page Number 303 and B.7, Page Number38	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
159.00	Providing and laying Cast in situ/Ready Mix cement concrete in M-20 of trap/ granite/ quartzite/ gneiss metal for Reinforced Cement Concrete pardi of required thickness including steel centering, formwork, cover blocks, laying/ pumping, compacting, curing, finishing and rougheningthem if special finish is to be provided and curing complete.(Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etcetera complete. With fine aggregate (Crushed sand VSI Grade)	Bd.F.11 Page Number 304 and B.7, Page Number 38	As directed by Engineer in charge.
160.00	Providing internal cement plaster 20 mili metre thick in single coats in cement mortar 1:5 without neeru finish, to concrete, brick surface, in all positions including scaffolding and curing etcetera complete	Bd.L.4 Page Number 368	As directed by Engineer in charge.
161.00	Providing neeru finish to plastered surfaces in all positions including scaffolding and curing etcetera complete.	Bd. L.10, Page Number370	As directed by Engineer in charge.
162.00	Providing and laying vitrified mirror / glossy finish tiles decorative type having size 590 mili metre to 605 mili metre x 590 mili metre to 605 mili metre of 8 to 10 mili metre thickness and confirming to Indian Standard 15622-2006 (group Bla) of approved make, shade and pattern for flooring in required position laid on a bed of 1:4 cement mortar including neat cement float, filling joints, curing and clearing etcetera complete.	Bd.M. 12 Page Number385	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
163.00	Providing and laying vitrified stone effect finish tiles having size 590 to 605 mili metre x 590 to 605 mili metre of 8 to 10 mili metre thickness and confirming to Indian Standard 15622-2006 (Group Bla) of approved make, shade and pattern for dado & skirting in required position laid on a bed of 1:4 cement mortar including required position laid on a bed of 1:4 cement mortarincluding neat cement float, filling joints, curign and cleaning etcetera complete.	Bd.M. 12 Page Number 385	As directed by Engineer in charge.
164.00	Providing and applying three coats of water proof cement paint of approved manufacture and of approved colour to old plastered surfaces including scaffolding if necessary, cleaning and preparing the surface, watering for two days etcetera complete.	Spec.Number: Bd.O.8/Page Number406	As directed by Engineer in charge.
165.00	Providing and fixing rolling shutter fabricated from steel laths of minimum thickness 0.9 mili metre with lock plate of 3.15 mili metre thickness reinforced with 35 x 35 x 5 mili metre angle section fitted with sliding bolts and handles for both sides, deep Mild Steel channel section of depth and thickness not less than 65 mili metre and 3.15 mili metre respectively with hold fast arrangements, Mild Steel Bracket plate 300 x 300 x 3.15 mili metre minimum size and shape with square bar, suspension shaft of minimum 32 mili metre diametre, hood cover of Mild Steel sheet not less than 0.9 mili metre thickness and of any size at top and safety devices including mechanical gear operation arrangement consisting of worm gear wheels and worms of high grade cast iron or mild steel and one coat of red lead primer etcetera complete. (Indian Standard 62481979) (With mechanical gear)	BD-T-55 Page Number 510	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
166.00	Providing and fixing mild steel grill work for windows, ventilators etcetera 20 Kilogram/Square Metre as per drawing including fixtures, necessary welding and painting with one coats of anticorrosive paint and two coats of oil painting complete.	Bd.U.1 Page Number 537	As directed by Engineer in charge.
167.00	Boring work (including transport.) 200/215 mm diameter in the soil / gravel surface Bore diameter of 150 mm in solid rock. This includes diameter drilling work. (Wet drilling) MJP Bore Well SSR Shedule 'B' A	As directed by Engineer in charge	As directed by Engineer in charge.
168.00	After completion of drilling bore well, capacity test by flushing (air lift method) is measured with 90 degree "V" notch. MJP Bore Well SSR Shedule 'B' A	As directed by Engineer in charge	As directed by Engineer in charge.
169.00	180 mm diameter PVC Casing pipe (8 kg / cm2) (IS 4985-1988) In exceptional circumstances / Casing pipes with a rock surface and if more than 40 feet of casing pipe is required, the casing should be used with the technical approval of the Deputy Engineer and Geologist.	As directed by Engineer in charge	As directed by Engineer in charge.
170.00	180 mm diameter PVC Casing pipe (8 kg / cm2) (IS 4985-1988) Casing lowering, grounding	As directed by Engineer in charge	As directed by Engineer in charge.
171.00	180 mm diameter cap for PVC pipe.	As directed by Engineer in charge	As directed by Engineer in charge.
	TOTAL : (i) Civil Work		

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
	(ii) Electrical Work		
172.00	Supplying and erecting HMS PVC conduit FRLS grade 25 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	WG-MA/CC.	As directed by Engineer in charge.
173.00	Supplying and laying HMS PVC conduit FRLS grade 25 mm dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC.	WG-MA/CC.	As directed by Engineer in charge.
174.00	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 32 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.	WG-MA/CON.	As directed by Engineer in charge.
175.00	Supplying and erecting mains with 2x1.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	WG-MA/BW	As directed by Engineer in charge.
176.00	Supplying and erecting mains with 1x1.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	WG-MA/BW	As directed by Engineer in charge.
177.00	Supplying and erecting mains with 2x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	WG-MA/BW	As directed by Engineer in charge.
178.00	Supplying and erecting mains with 1x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	WG-MA/BW	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
179.00	Supplying and erecting mains with 2x4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	WG-MA/BW	As directed by Engineer in charge.
180.00	Supplying and erecting mains with 1x4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	WG-MA/BW	As directed by Engineer in charge.
181.00	Supplying and erecting modular type switch 6A / 10A duly erected on provided plate and box with wiring connections complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
182.00	Supplying and erecting modular type switch 16A duly erected on provided plate and box with wiring connections complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
183.00	Supplying and erecting modular type 3 pin 6A multi socket with safety shutter, duly erected on provided plate and box with wiring connections complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
184.00	Supplying and erecting modular type 3 pin 6 / 16A multi socket with safety shutter, duly erected on provided plate and box with wiring connections complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
185.00	Supplying and erecting modular type blanking plate one module, duly erected on provided plate & box.	As directed by Engineer in charge.	As directed by Engineer in charge.
186.00	Supplying and erecting modular type (two module) electronic step regulator for fan, duly erected on provided plate and box with wiring connections complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
187.00	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 2 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
188.00	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 6 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	As directed by Engineer in charge.	As directed by Engineer in charge.
189.00	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 12 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	As directed by Engineer in charge.	As directed by Engineer in charge.
190.00	Supplying and erecting PVC Surface modular switch box with double mounting plate for 2 module duly erected.	As directed by Engineer in charge.	As directed by Engineer in charge.
191.00	Supplying and erecting PVC Surface modular switch box with double mounting plate for 12 module duly erected.	As directed by Engineer in charge.	As directed by Engineer in charge.
192.00	Supplying and erecting 16 / 20 / 25 A starter (modular range) 2 module for AC unit on provided box complete & duly concealed with necessary material and connected.	As directed by Engineer in charge.	As directed by Engineer in charge.
193.00	Point wiring for light/bell hybrid type (Surface type under false ceiling and concealed type for drops & switch boards on walls) in min 20 mm PVC conduit / casing n capping with 1.5 sq.mm. (2+1E) FRLSH grade copper wires, modular type switch, earthing and required accessories as per specification No: WG-PW/HW	WG-PW/HW	As directed by Engineer in charge.
194.00	Point wiring for ceiling fan (Surface type under false ceiling and concealed type for drops & switch boards on walls) in min 20 mm PVC conduit / casing n capping with 1.5 sq.mm. (2+1E) FRLSH grade copper wires, modular type switch, earthing and required accessories as per specification No: WG-PW/HW	WG-PW/HW	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
195.00	Point wiring for light/bell/exhaust fan in PVC trunking (casing-capping) with 1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW	WG-PW/SW	As directed by Engineer in charge.
196.00	Wiring for plug on board with Switch socket surface/concealed type, copper wiring and earthing and with modular accessories as per specification No: WG-PW/CW	WG-PW/CW	As directed by Engineer in charge.
197.00	Supplying and erecting LED square / circular Max. 18 W down lighter/ Panel Light having pressure die-cast aluminium housing, polystyrene diffuser having system lumens output of Min. 2000 Lumens, min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	As directed by Engineer in charge.	As directed by Engineer in charge.
198.00	Supplying and erecting LED Panel Light(600mm X 600mm) Max. 35 W having CRCA powder coated housing, polystyrene diffuser having system lumens output of Min 4200 Lumens, min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50 including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	As directed by Engineer in charge.	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
199.00	Supplying and erecting bulk head LED fitting max. 10W with high transitivity diffuser with system lumens output of min. 1100 lumens, min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., THD<10%, p.f. >0.95, operating range of 140-260V, in built surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, IP66, IK09 rated on provided PVC Block / wooden board with 3 years warranty.	As directed by Engineer in charge.	As directed by Engineer in charge.
200.00	Supplying and erecting anodized aluminium corridor / passage light LED fitting (4 feet) Max. 22W with high transitivity diffuser with system lumens output of Min.2200 lumens , min. efficacy of 100 lumen/W, CRI>80, CCT upto 6000K, Beam Angle of 110 deg., Ripple<5%, THD<10%, p.f. >0.95, operating range of 200-270V, surge protection of 2 kV, Life class of 50,000 Hrs. at L70B50, including driver, with end caps on provided PVC Block / wooden board with 3 years warranty.	As directed by Engineer in charge.	As directed by Engineer in charge.
201.00	Supplying and erecting ding dong / electronic musical type call bell with heavy duty coil suitable to operate on 230V A.C. supply erected on polished double wooden block/sunmica block of suitable size.	As directed by Engineer in charge.	As directed by Engineer in charge.
202.00	Supplying and erecting exhaust fan medium duty 230 V A.C. 50 cycles 225 mm. 1400 RPM with condenser complete erected in position with necessary materials. Fan motor with moisture proof treatment and 'E' class insulation.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
203.00	Supplying and erecting Energy Saving BLDC Ceiling fan 230 V A.C. 50 cycles 1200 mm, max. energy consumption of 28W having service ratio (CMM/W) of Min. 8 , PF>0.9, THD<10% with compatible speed regulator, Temperature Rise of Max. 40 deg. C, having external mounted control PCB completely erected in position as per specification no. FG-FN/CF	FG-FN/CF	As directed by Engineer in charge.
204.00	Supplying & fixing anchor type fastener fan hook, with 2 nos. of 10 mm dia x 75 mm long with necessary materials for ceiling fan.	As directed by Engineer in charge.	As directed by Engineer in charge.
205.00	Supplying and erecting 'B' class G.I .pipe / M.S. pipe down rod duly painted for fan complete erected with PVC three core flexible cable 1 sq. mm copper PVC wire.	As directed by Engineer in charge.	As directed by Engineer in charge.
206.00	Supplying, erecting, testing and commissioning self contained water cooler 230/250V 50Hz nominal cooling capacity of 150 litres per hour and storage capacity 150 litres with partially stainless steel body as per specification no. AP-WCR/WC	AP-WCR/WC	As directed by Engineer in charge.
207.00	Supplying and erecting ultra violet storage type water purifier (RO+UV+UF) with softener for safe drinking water consisting of UV germicidal tube of 8W capacity choke made of copper wire and two indicator lamps with output of purified water minimum 0.33 litre/min with activated carbon filter and softener operating on 230V, single phase A.C. supply with UV fail & filter change indication system .(for TDS more than 200)	As directed by Engineer in charge.	As directed by Engineer in charge.
208.00	Supplying, erecting & marking SPMCB 6A to 32A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	SW-SWR/MCB	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
209.00	Supplying, erecting & marking SPMCB 6A to 32A, B-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	SW-SWR/MCB	As directed by Engineer in charge.
210.00	Supplying, erecting & marking DPMCB 40A to 63A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	SW-SWR/MCB	As directed by Engineer in charge.
211.00	Supplying, erecting & marking TPMCB 40A to 63A, with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	SW-SWR/MCB	As directed by Engineer in charge.
212.00	Supplying, erecting & marking FPMCB 40A to 63A, with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	SW-SWR/MCB	As directed by Engineer in charge.
213.00	Supplying & erecting triple pole and neutral distribution board (TPNDB), SPMCB of 4 ways/phase (12 poles), with door, 1.2mm thickness, surface/flush mounted, IP 43 protection on iron/GI frame (horizontal busbar type) as per specification no. SW-SWR/MCBDB	SW-SWR/MCBDB	As directed by Engineer in charge.
214.00	Supplying and erecting single pole and neutral distribution board (SPNDB), with 2 ways for incoming and 10 ways (10 poles) for outgoing SP MCBs, with door, 1.2mm thickness surface / flush mounted, IP 43 Protection on iron / GI frame as per specification no. SW-SWR/MCBDB	SW-SWR/MCBDB	As directed by Engineer in charge.
215.00	Supplying & erecting triple pole and neutral distribution board (TPNDB), 3 pole/4 pole MCCB as incomer & outgoing SP MCB (24 poles) or TP MCB of 8 ways (24 poles), with door, 1.2mm thickness, surface/flush mounted, on iron/GI frame (vertical busbar type) as per specification no. SW-SWR/MCBDB1	SWR/MCBDB1	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
216.00	Providing & erecting 4 Pole MCCB, 415 V, 100A, rated short-circuit breaking capacity 25 kA (Ics=100% of Icu), adjustable thermal (overload) setting and fixed magnetic setting with provided leads, provision for installation of shunt/UV/trip alarm contact. MCCB with phase barriers on both sides, insulation withstand capacity 800V, no line-load bias in provided enclosure/panel as per specification no. SW-SWR/MCCB	SW-SWR/MCCB	As directed by Engineer in charge.
217.00	Providing & erecting 4 Pole MCCB 415V, 250A, rated short-circuit breaking capacity 36 kA (Ics=100% of Icu) adjustable thermal (overload) setting and adjustable magnetic setting with provided leads, provision for installation of shunt/UV/trip alarm contact and MCCB should have phase barriers both sides, with insulation withstand capacity 800V, no line-load bias in provided enclosure/panel as per specification no. SW-SWR/MCCB	SW-SWR/MCCB	As directed by Engineer in charge.
218.00	Providing & erecting floor/wall mounting, MCCB panel board, with door, suitable for four pole incoming 250A, 8 ways Four pole outgoing, up to 100 A MCCBs on iron frame, as per specification no SW-SWR/MCCBPB. (Excluding MCCBs)	SW-SWR/MCCBPB.	As directed by Engineer in charge.
219.00	Providing & erecting incoming and outgoing cable alleys suitable for MCCB panel board with door, 250A incoming and 8 way outgoing or 400A incoming and 6 way outgoing made from CRCA sheet 1.6 mm thick duly powder coated and having vertical insulated partition for shielding between the shared face of cableway and DB.	As directed by Engineer in charge.	As directed by Engineer in charge.
220.00	Providing & erecting prewired meter module suitable for MCCB panel board with CTs and emfs VIF meter.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
221.00	Supplying and erecting metal work in CRCA sheet including Iron work for supports with fabrication of boxes, panel boards, etc. including cutting, bending, drilling, welding, riveting, treated with anti-rust treatment and duly powder coated or painted with one coat of red lead paint and 2 coats of enamel paint complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
222.00	Supplying and erecting plywood 12 mm thick fixed to wall or on provided panel board with necessary materials such as screws, wall fasteners supports, nuts bolts etc. complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
223.00	Supplying and erecting iron work, sheet metal work consisting of CRCA sheets, various sections of iron, plates, chequered plates, rods, bars, MS pipes, etc. for panel board or any other purpose with bending, cutting, drilling and welding complete erected at the position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match the switchgears or as per directions by the authority.	As directed by Engineer in charge.	As directed by Engineer in charge.
224.00	Supplying and erecting of any size electrolyte aluminium patti or bar in bus bar chamber / in panel or any other purpose, 500 V with require capacity 99.9% aluminium purity with E91E Grade as per IS 5082 & Current Density 0.8 A per sq. mm. with fixing arrangement (like lug or bottle type lug) to both the end with high grade polyolefin insulation sleeve complete as per specification no. BCP-BB	BCP-BB	As directed by Engineer in charge.
225.00	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 150 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	CB-LT/AL	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
226.00	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 16 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	CB-LT/CU	As directed by Engineer in charge.
227.00	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 50 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	CB-LT/CU	As directed by Engineer in charge.
228.00	Supplying & erecting G.I. pipe 'A' class 50 mm dia. erected for enclosing XLPE armoured cable on wall/pole as per specification no. CB-CE	CB-CE	As directed by Engineer in charge.
229.00	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 90 mm outside dia. double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
230.00	Providng earthing with galvanized iron earth plate size 60 x 60 x 0.6 cm complete with all materials, testing & recording the results as per specification no. EA-EP	EA-EP	As directed by Engineer in charge.
231.00	Supplying and erecting GI strip of high purity required size used for earthing on wall and/or any other purpose with necessary GI clamps fixed on wall painted with bituminous paint with joints required. As per specification no EA-EP.	EA-EP.	As directed by Engineer in charge.
232.00	Supplying and erecting street light Wall bracket made from 40 mm. dia ' G.I. pipe 1.2 m. in total length complete as per specification no. FG-BKT/WB	FG-BKT/WB	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
233.00	Supplying and erecting integrated LED street light fitting 60W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 6600 Lumens, min. efficacy of 110 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2.	FG-ODF/FLS2.	As directed by Engineer in charge.
234.00	Supplying and erecting HMS PVC conduit FRLS grade 25 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	WG-MA/CC.	As directed by Engineer in charge.
235.00	Supplying and laying HMS PVC conduit FRLS grade 25 mm dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC.	WG-MA/CC.	As directed by Engineer in charge.
236.00	Supplying, fixing, and configuring 8-ports managed gigabit, Layer-2 switch, 10/100/1000 base-T, POE smart switch plus 2 SFP erected in provided rack complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
237.00	Supplying, fixing, and configuring 24 ports, POE switch in provided rack as per specification No. WG-NWC/ENS	WG-NWC/ENS	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
238.00	Supplying & erecting of High definition 4/5 Megapixel IP IR Dome Camera with following featuresImage Sensor : minimum 1/2.8" Progressive Scan CMOS, Video Resolution : minimum 2592 x 1520Video Compression : H.264, H.265 or higher, at least Three individually configurable stream, Frame rate : minimum 25 fps at all resolutions, WDR : minimum 120 dB Wide Dynamic Range, ONVIF profile conformant, minimum IR distance : 50m, Lens Type : 2.8/4/6 mm Lens, fixed focal, Field of View :2.8 mm, horizontal FOV 107°, vertical FOV 57°, diagonal FOV 129°4 mm, horizontal FOV 86°, vertical FOV 47°, diagonal FOV 102°6 mm, horizontal FOV 55°, vertical FOV 29°, diagonal FOV 65°Lux sensitivity - minimum 0.2 Lux at color, minimum 0.05 Lux at Black & White, 0.0 Lux (IR) Night Vision Distance minimum IR - 50m. Camera minimum Adjustment Angles - Pan : 350°, Tilt : 72°, Rotate : 350°. Power Supply : Support 12VDC & PoE, IP67, IK10 - Vandal Resistant. Built in micro SD/SDHC/SDXC card slot of minimum 128 GB, Built in microphone. minimum Input/Output - Audio in × 1, Audio Out × 1, Alarm in × 1, Alarm Out × 1. Image Settings : Rotate mode, saturation, brightness, contrast, sharpness, gain, white balance. Image Enhancements : Day/Night-Auto (ICR)/Color/Black & White, 3D Digital Noise Reduction, Automatic White Balance, Automatic Gain Control, Backlight Compensation, Highlight Compensation.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
239.00	Supplying & erecting of High definition 4/5 Megapixel IP IR Bullet Camera with following featuresImage Sensor : minimum 1/2.8" Progressive Scan CMOS, Video Resolution : minimum 2592 x 1520Video Compression : H.264, H.265 or higher, at least Three individually configurable stream, Frame rate : minimum 25 fps at all resolutions, WDR : minimum 120 dB Wide Dynamic Range, ONVIF profile conformant, minimum IR distance : 50m, Lens Type : 2.8/4/6 mm Lens, fixed focal, Field of View :2.8 mm, horizontal FOV 107°, vertical FOV 57°, diagonal FOV 129°4 mm, horizontal FOV 86°, vertical FOV 47°, diagonal FOV 102°6 mm, horizontal FOV 55°, vertical FOV 29°, diagonal FOV 65°Lux sensitivity - minimum 0.2 Lux at color, minimum 0.05 Lux at Black & White, 0.0 Lux (IR) Night Vision Distance minimum IR - 50m. Camera minimum Adjustment Angles - Pan : 350°, Tilt : 72°, Rotate : 350°. Power Supply : Support 12VDC & PoE, IP67, IK10 - Vandal Resistant. Built in micro SD/SDHC/SDXC card slot of minimum 128 GB, Built in microphone. minimum Input/Output - Audio in × 1, Audio Out × 1, Alarm in × 1, Alarm Out × 1. Image Settings : Rotate mode, saturation, brightness, contrast, sharpness, gain, white balance. Image Enhancements : Day/Night-Auto (ICR)/Color/Black & White, 3D Digital Noise Reduction, Automatic White Balance, Automatic Gain Control, Backlight Compensation, Highlight Compensation.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
240.00	Supplying, installing, testing & commissioning of 64/80 Ch Network Video Recorder (NVR), suitable connect Min. 64 IP Cameras, up to 5 Megapixel Resolution, with HDMI 1/VGA 1 and HDMI 2/VGA 2 outputs provided, Atleast one HDMI output of 4K resolution, atleast one VGA output with output up to 1920 × 1080, Support H.265 or higher, H.264, MJPEG, Supports Redundant Dual Power, Incoming Bandwidth 320 Mbps with minimum 8 SATA Hard Disks, ANR Technology, 8 SATA interfaces for 8 HDDs and capacity of each HDD up to 8TB, minimum 02 USB port, Alarm I/O 16/4, RJ-45 10/100/ 1000 Mbps self-adaptive Ethernet interface, support multi brand network Cameras, ONVIF conformance, Multiple network monitoring: Web viewer . support protocol TCP/IP, DHCP, DNS, DDNS, NTP, SADP, SMTP, NFS, iSCSI, UPnP™, HTTPS. RoHS, UL, CE, FCC certified.duly erected in provided U Rack with wiring connections, tagging and programming etc. complete as per specificationss no. CCTV-NVR	CCTV-NVR	As directed by Engineer in charge.
241.00	Supplying & erecting 8 TB internal Surveillance HDD suitable for SATA Port of NVR, interface transfer rate 6 GB/S, maximum sustained transfer rate 210 MB/Sec to 213 MB/S. Drive bay supported 08+, Cameras supported up to 64, Cache (MB) 256, Load/Unload Cycle -3000000, Work Load Rating per Year 180TB, MTBF 1000000 Hrs. HTTPS. RoHS, UL, CE certified, duly erected in position in provided NVR as per specification no. CCTV-HDD	CCTV-HDD	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
242.00	Supplying & erecting 43" professional LED display with 1920*1080 (Full HD) Display, suitable for 16/32 channel NVR and following featuresBrightness: minimum 500 Cd/m2Contrast Ratio: minimum 1000:1Viewing angle: 178/178 deg.Response time: maximum 8 msInputs: HDMI, VGA, BNC,USB, Audio In, Built-in speakers maximum 10 W, Suitable to operate on 100-240 V 50 Hz AC supply and 24/7 Duty Cycle duly erected on wall or table top with standard accessories like wall mount stand and wiring connections etc. complete as per specifications no. CCTV-MON	CCTV-MON	As directed by Engineer in charge.
243.00	Supplying and erecting modular type telephone socket one gang with safety shutter, duly erected on provided plate and box with wiring connections complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
244.00	Supplying & erecting 2 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	WG-TW	As directed by Engineer in charge.
245.00	Supplying & erecting 10 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	WG-TW	As directed by Engineer in charge.
246.00	Supplying & erecting 20 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	WG-TW	As directed by Engineer in charge.

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
247.00	Supplying & erecting 50 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	WG-TW	As directed by Engineer in charge.
248.00	Supplying and erecting 10m HDMI cord low voltage grade minimum 4k compliant to be laid in provided conduits with male/female 19 pin HDMI connectors complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
249.00	Supplying, erecting & commissioning MDF Box 100x100 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	WG-TW	As directed by Engineer in charge.
250.00	Supplying, erecting & commissioning 10 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	WG-TW	As directed by Engineer in charge.
251.00	Supplying, erecting & commissioning 20 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	WG-TW	As directed by Engineer in charge.
252.00	Supplying, erecting & commissioning 30 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	WG-TW	As directed by Engineer in charge.
253.00	Supplying, erecting & commissioning 10 pair module for connection & disconnection of telephone cable as per specification no. WG-TW	WG-TW	As directed by Engineer in charge.
254.00	Supplying and installing, testing & commissioning of digital (hybrid) type EPABX of 6 x 32 extensions suitable upto 96 extensions complete. (63712.95+ (40066.95*3) =183913.80)	As directed by Engineer in charge.	As directed by Engineer in charge.
255.00	Supplying, installing, testing & commissioning push button telephone instrument desk top unit as per specification complete	As directed by Engineer in charge.	As directed by Engineer in charge.
256.00	Supplying, installing, testing & commissioning IP telephone instrument as per specification complete.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
257.00	Supplying and installing cat-6 cable suitable for networking as per specification no. WG-COC/NC	WG-COC/NC	As directed by Engineer in charge.
258.00	Supplying and fixing 1 m UTP patch cord of Cat 6 type in position as per specification No. WG-COC/PC	WG-COC/PC	As directed by Engineer in charge.
259.00	Supplying, fixing, and configuring 24 ports with 4 (SFP+) port, ethernet managed switch with web view/CLI, 6KV surge protection on ethernet port and console port for management in provided rack as per specification no. WG-NWC/GBS	WG-NWC/GBS	As directed by Engineer in charge.
260.00	Supplying and fixing tool-less IO (Ethernet) flush/surface type in provided modular box as per specification no. WG-NAS/IO	WG-NAS/IO	As directed by Engineer in charge.
261.00	Supplying and fixing 24 port patch panel with tool-less keystone jacks in provided U Rack complete as per specification no. WG-NAS/PP	WG-NAS/PP	As directed by Engineer in charge.
262.00	Supplying and fixing 9U wall mount rack (Dimension-DxWxH – 500x600x500 mm) as per specification No. WG-NAS/RAK	WG-NAS/RAK	As directed by Engineer in charge.
263.00	Supplying and erecting minimum Three & above star rated submersible pump set of 5.625 KW/7.5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 100 to 400 LPM discharge at 132 to 27 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	WP-SMP	As directed by Engineer in charge.
264.00	Supplying & erecting automatic control panel for 3 Phase , 415 volt, A.C, Submersible/centrifugal pump set up to 7.5 HP consisting of DOL starter having relay range 9-14 AMP,S.P.P., Combined ammeter/ voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc .	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
265.00	Supplying and erecting ISI mark GI pipe 50 mm dia.'B' class at position with accessories complete as per specification no. CW-PLB/GP.	CW-PLB/GP.	As directed by Engineer in charge.
266.00	Supplying and erecting non return valve 50 mm dia in position made of gun metal complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
267.00	Supplying & erecting flat flexible 3 core 4 sq.mm PVC sheathed submersible type copper cable suitably clamped at fixed intervals with column pipe assembly complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
268.00	Supplying, erecting & marking TPMCB 40A to 63A, with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	SW-SWR/MCB	As directed by Engineer in charge.
269.00	Supplying & erecting four pole ON LOAD change over switch, 415V, 63A, open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, rotary handle, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3.	As directed by Engineer in charge.	As directed by Engineer in charge.
270.00	Supplying & erecting CRCA sheet metal one way enclosures of 1.2mm thickness suitable for DP MCB /TP MCB/FP MCB/RCCB/RCBO complete erected on angle iron/GI frame.	As directed by Engineer in charge.	As directed by Engineer in charge.
271.00	Providng earthing with galvanized iron earth plate size 60 x 60 x 0.6 cm complete with all materials, testing & recording the results as per specification no. EA-EP	EA-EP	As directed by Engineer in charge.
272.00	Supplying & erecting Carbon Dioxide (CO2) fire extinguisher of 4.5 kg. capacity cartridge type conform to IS 2878 /15683 complete erected with necessary clamp made from 50 x 6 mm. M. S. flat with nut & bolts routed in wall complete.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
273.00	Supplying, installation, testing and commissioning of booster fire pump [BP] suitable for water discharge of 900 LPM at 35 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 7.5 kW or of suitable kW capacity for manual/automatic operation and consisting of following :(a) Horizontal/vertical type, single/multi stage, centrifugal casing pump of cast iron body & bronze/CI impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation on 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)Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/BP	FF-MFP/BP	As directed by Engineer in charge.
274.00	Supplying & erecting automatic control panel for 3 Ph, 415 volt, A.C. Submersible/centrifugal type booster pump 1no up to 7.5 HP - 10 H.P. consisting of DOL starter having relay range 13-22 AMP,S.P.P., Combined ammeter/voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
275.00	Supplying and erecting metal work in CRCA sheet including Iron work for supports with fabrication of boxes, panel boards, etc. including cutting, bending, drilling, welding, riveting, treated with anti-rust treatment and duly powder coated or painted with one coat of red lead paint and 2 coats of enamel paint complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
276.00	Supplying and erecting iron work, sheet metal work consisting of CRCA sheets, various sections of iron, plates, chequered plates, rods, bars, MS pipes, etc. for panel board or any other purpose with bending, cutting, drilling and welding complete erected at the position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match the switchgears or as per directions by the authority.	As directed by Engineer in charge.	As directed by Engineer in charge.
277.00	Supplying and erecting 100 mm dia. pressure gauge , 0-300 PSI or 0-14 kg per cm square fitted with 12/15 mm dia. pad cock valve, erected with provided G.I. pipe, elbow etc. complete as per specification no. FF-FFA/PG	FF-FFA/PG	As directed by Engineer in charge.
278.00	Supplying and erecting 12/15 mm dia pressure switch with provided isolation valve, G.I. nipple, elbow, etc complete as per specification no. FF-FFA/PS	FF-FFA/PS	As directed by Engineer in charge.
279.00	Providing and fixing high-density polyethylene (HDPE) container one piece moulded triple layer water tank made out of high density polyethylene and built corrugated inclusive of delivery up to destination hoisting and fixing of accessories such as inlet, outlet overflow pipe inclusive of all tanks capacity up to 20000 litres.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
280.00	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 10 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	CB-LT/AL	As directed by Engineer in charge.
281.00	Supplying and erecting 100 mm dia cast iron double flange NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	FF-VL/NRV	As directed by Engineer in charge.
282.00	Supplying and erecting 100 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	FF-VL/BFV	As directed by Engineer in charge.
283.00	Supplying and erecting G.I. pipe 'C' class ERW 25 mm dia with necessary fittings complete as per specification no. FF-PP	FF-PP	As directed by Engineer in charge.
284.00	Supplying and erecting G.I. pipe 'C' class ERW 75/80 mm dia with necessary fittings complete as per specification no. FF-PP	FF-PP	As directed by Engineer in charge.
285.00	Supplying and erecting G.I. pipe 'C' class ERW 100 mm dia with necessary fittings complete as per specification no. FF-PP	FF-PP	As directed by Engineer in charge.
286.00	Supplying and erecting 100 mm dia cast iron foot valve ball type/flap type with strainer for negative suction complete as per specification no. FF-VL/FV	FF-VL/FV	As directed by Engineer in charge.
287.00	Supplying and erecting 25 mm dia gun metal gate valve complete with PN16 pressure rating, as per specification no. FF-VL/GV	FF-VL/GV	As directed by Engineer in charge.
288.00	Supplying and installing wall mounting swinging hose reel drum fitted with 19 mm dia. 30m long high pressure polypropylene (Polyhose) along with necessary accessories complete as per specification no. FF-FFA/HV	FF-FFA/HV	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
289.00	Supplying and erecting M.S./CRCA cabinet for housing single hydrant valve of size (400 x 400 x 400)mm or hose pipe box of size (600 x 600 x 200)mm made from min. 1.5 mm thick CRCA sheet with angle iron work of min. of size (25 x 25 x 4) mm having front doors with viewing glass of size (200x150) mm and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour(Code 538 of IS 5)	As directed by Engineer in charge.	As directed by Engineer in charge.
290.00	Supplying and erecting stainless steel branch pipe 63 mm dia fitted with 20 mm dia detachable hexagonal nozzle complete as per specifications no. FF-FFA/NZ	FF-FFA/NZ	As directed by Engineer in charge.
291.00	Supplying and erecting 63mm dia, reinforced rubber lined (R.R.L.) hose pipe, 15m in length, fitted with necessary accessories complete as per specification no. FF-FFA/RRL	FF-FFA/RRL	As directed by Engineer in charge.
292.00	Supplying and erecting gun metal single outlet hydrant valve fitted with necessary accessories complete as per specification no. FF-VL/HV	FF-VL/HV	As directed by Engineer in charge.
293.00	Supplying and erecting fire brigade header (Siamese connection)of 150 mm dia, for supplying water in fire tank complete as per specification no. FF-FA/FMC	FF-FA/FMC	As directed by Engineer in charge.
294.00	Supplying and erecting 150 mm dia fire brigade header suitable for supplying water in fire tank complete as per specification no. FF-FA/FBC	FF-FA/FBC	As directed by Engineer in charge.
295.00	Supplying, erecting testing and commissioning manual call point (Pill box) with break glass, push button (resettable type) in metal enclosure complete as per specification no. FF-FAAS/MCP	FF-FAAS/MCP	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification Specification Number& Page Number	Additional specifications if any
1	2	3	4
296.00	Supplying, erecting, testing and commissioning hooters having high (100dB @ 1m) and low (94dB @ 1m) volume setting, group addressing facility allowing multiple sounders to be activated with CRCA enclosure complete as per specification no. FF-FAAS/HTR	FF-FAAS/HTR	As directed by Engineer in charge.
297.00	Supplying, erecting testing and commissioning optical type smoke detector on suitable back box with necessary connections complete as per specification no. FF-FAS/SD	FF-FAS/SD	As directed by Engineer in charge.
298.00	Supplying, installing, testing and commissioning FR, XLPE armoured cable 2 core 1.5 sq.mm. copper conductor complete erected on wall/ ceiling complete as per specification no. CB-LT/CU	CB-LT/CU	As directed by Engineer in charge.
299.00	Supplying, installing, testing and commissioning of 2 Zones Microprocessor based conventional fire alarm control panel (FACP) with standard accessories , 16x2 Character LCD Display, provision for zone wise contact and beep sound alarm, suitable to operate on 120-220 V AC, 0 - 49 Deg C, 93 ± 2 Percentage RH (non- condensing) at 32 ± 2 Deg C complete as per specification no. FF-FAAS/FACP	FF-FAAS/FACP	As directed by Engineer in charge.
300.00	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.3TR to 1.6TR capacity having ISEER minimum 5.00 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	APAC/ WAC	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
301.00	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor. room air conditioning unit 1.7TR to 2.0TR capacity having ISEER minimum 5.0 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position in provided recess with wooden frame complete specification no. AP-AC/WAC	AP-AC/WAC	As directed by Engineer in charge.
302.00	Supplying and erecting metal work in CRCA sheet including Iron work for supports with fabrication of boxes, panel boards, etc. including cutting, bending, drilling, welding, riveting, treated with anti-rust treatment and duly powder coated or painted with one coat of red lead paint and 2 coats of enamel paint complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
303.00	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 12mm complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
304.00	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 22mm complete.	As directed by Engineer in charge.	As directed by Engineer in charge.
305.00	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 12 mm for solar water heater/AC system.	As directed by Engineer in charge.	As directed by Engineer in charge.

Signature of Contractor **No. of Corrections** **Executive Engineer**

Sr. No.	Item of Work	Reference to Standard Specification	Additional specifications if any
		Specification Number& Page Number	
1	2	3	4
306.00	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 22 mm for solar water heater/AC system.	As directed by Engineer in charge.	As directed by Engineer in charge.
	PART - B (Royalty & Testing Charges)		
307.00	Royalty Charges for Sand	As directed by Engineer in charge.	As Directed by Engineer in Charge
308.00	Royalty Charges for All Other Material	As directed by Engineer in charge.	As Directed by Engineer in Charge
309.00	VQCC Testing Charges	As directed by Engineer in charge.	As Directed by Engineer in Charge

Signature of Contractor **No. of Corrections** **Executive Engineer**