RAJKOT MUNICIPAL CORPORATION

e - Tender No.RMC/ENGG/CZ/24-25/61

Bid Documents For

DEVELOPMENT OF SPORTS COMPLEX AT PARDI ROAD IN WARD NO. 17

Milestone dates for e-tendering are as under	
1. Downloading of e-documents	28-02-25 To 21-03-25 upto 17.00 Hrs.
2. Pre-bid meeting in the O/o CE	07-03-25 at 16.00 Hrs.
3. Last date for online submission of e-Tender	21-03-25 upto 18.00 Hrs.
4. Submission of EMD, Tender fee and other documents for verification by Regd.Post.A.D. / Speed Post	Before 21-03-25 and 18.00 Hours
5. Opening of Technical Bid	24-03-25 at 11.00 Hours onwards
6.Verification of submitted documents (EMD, e - Tender fee, etc.)	24-03-25 at 11.00 Hours onwards
7.Opening of Price Bid (For Technically qualified bidders only)	26-03-25 at 11.00 Hours onwards
8.Bid Validity	120 Days

2024-25

ADDL. CITY ENGINEER
RAJKOT MUNICIPAL CORPORATION
DR. AMBEDKAR BHAWAN
CENTRAL ZONE, DHEBARBHAI ROAD,
RAJKOT - 360001 (GUJARAT)

RAJKOT MUNICIPAL CORPORATION

BID DOCUMENT FOR

DEVELOPMENT OF SPORTS COMPLEX AT PARDI ROAD IN WARD NO. 17

PART-I

Section-1 Invitation to Bid, Instructions to Bidders and Formats.

Section-2 General Conditions of Contract

PART-II

Section-3 Technical Specifications

PART-III

Bill of Quantities (With Price)

ABBREVIATIONS

Statement showing the details of abbreviations

Full Form	Abbreviation
ADDL. CITY ENGINEER	ACE
Operation and Maintenance	O&M
Net Present Value	NPV
Engineering Procurement and Construction	EPC
Paschim Gujarat Vij Co. Ltd.	PGVCL
Critical Path Method	CPM
Reinforced Cement Concrete	RCC
High Ground Level Reservoir	HGLR
Kilometer	KM
Mild Steel	MS
Bureau of Indian Standard	BIS
American Water Works Association	AWWA
American Petroleum Industries	API
Million Liter per Day	MLD
High Yield Strength Deformed bar	HYSD
Corrosion Residence Steel	CRS
Ordinary Portland Cement	OPC
American Standard for Testing of Material	ASTM
Flux Compensated Magnetic Amplifier	FCMA
Cost Insurance and Freight	CIF
Free On Board	FOB
EX – Works	EXW

PART - I
SECTION - 1

INVITATION FOR BIDS

RAJKOT MUNICIPAL CORPORATION
***e*-TENDER NOTICE**

The e-Tenders are invited with two bid system by e-Tendering from the experienced contractors registered in GWSSB / State Government / Central Government / Semi Government in appropriate class for below mentioned work:

Sr No	Name of work	a) Estimated cost in Rs. b) EMD c) E-TENDER fee d) Time limit for completion of work
1	DEVELOPMENT OF SPORTS COMPLEX AT PARDI ROAD IN WARD NO. 17 **e-TENDER No.RMC/ENGG/CZ/24-25/61**	a.1) Rs.27,46,60,700/- (with GST) a.2) Rs.23,27,63,300/- (without GST) b) Rs.23,28,000/- c) Rs.23,500/- d) 18 Months

Milestone dates for e-tendering are as under	
1. Downloading of e-documents	27-02-25 To 21-03-25 upto 17.00 Hrs.
2. Pre-bid meeting in the O/o CE	07-03-25 at 16.00 Hrs.
3. Last date for online submission of e-Tender	21-03-25 upto 18.00 Hrs.
4. Submission of EMD, Tender fee and other documents for verification by Regd.Post.A.D. / Speed Post	Before 21-03-25 and 18.00 Hours
5. Opening of Technical Bid	24-03-25 at 11.00 Hours onwards
6.Verification of submitted documents (EMD, e - Tender fee, etc.)	24-03-25 at 11.00 Hours onwards
7.Opening of Price Bid (For Technically qualified bidders only)	26-03-25 at 11.00 Hours onwards
8.Bid Validity	120 Days

1. The e-tender fee will be accepted only in form of Demand Draft in favor of "Rajkot Municipal Corporation" Rajkot, payable at Rajkot from any Nationalized Bank or Scheduled Bank (except Co-operative Bank) in India and must be delivered to above address.

2. All bidders must submit Bid security (EMD) as above either directly deposited in ICICI Bank Account No.015305010638 (Rajkot Municipal Corporation) IFSC Code ICIC0000153 or submit at the below mentioned address in form of Demand Draft in favour of "Rajkot Municipal Corporation", Rajkot, from any Nationalized Bank or Scheduled Bank (except Co-operative Bank) in India. Bank Guarantee will also be accepted.

3. Submission of required documents shall have to be done at the below mentioned address:

   Office of the ADDL. CITY ENGINEER
   Rajkot Municipal Corporation
   DR. AMBEDKAR BHAWAN,
   Construction Branch, DHEBARBHAI ROAD,
   Rajkot – 360001

4. The pre-qualification requirement is as under:

   i) Financial Criteria:

   1. The Bidder must have achieved a minimum annual turnover in any one year over the last seven financial years of the annual value of contracts value.
   2. The Bidder should give undertaking that he has access to or has available, liquid assets and/or credit facility equal to 25% of the value of the contract / contracts applied.
   3. Available Bid Capacity (ABC) must be more than the estimated tender cost.
      Available bid capacity (ABC) = (A x N x 2) – B,
      where,
      A = Maximum of updated total amount of work executed in any one year of the last seven financial years taking into account the completed as well as works in progress
      B = Amount of the existing commitments and ongoing works to be completed during time interval of N years from the bid due date.
      N = Number of years prescribed for completion of the proposed works
   4. Bidder must have minimum "AA" Class registration.

   ii) Experience Criteria:

   The bidder should posses following minimum experience:

   1. Bidder should have completed OR substantially completed similar nature work; at least one work of **40%** of tender amount either in Government or Semi-Government or Government Autonomous Body as a main contractor in period of last seven years.
      Note:
      i) Substantially completed works means those works which are completed atleast 90% of original contract price on the date of submission of this tender and execution is satisfactory.
      ii) The work may have been executed by the applicant as prime contractor or as a member of a joint venture. In case a project has been executed as a joint venture, joint venture proportion will be taken into consideration.
   2. Bidder should have enough machinery and experienced personnel to supervise the work.

Note on pre-qualification requirement:

1. Enhancement factor at 10% per year for last seven years will be applicable to arrive at average annual turnover and experience to finalize the magnitude of work done in last seven years.

Sr. No.	Year	Enhance Factor
1	Current Year (2024-25)	1.00
2	Current Year – 1 (2023-24)	1.10
3	Current Year – 2 (2022-23)	1.21
4	Current Year – 3 (2021-22)	1.33
5	Current Year – 4 (2020-21)	1.46
6	Current Year – 5 (2019-20)	1.61
7	Current Year – 6 (2018-19)	1.77
8	Current Year – 7 (2017-18)	1.95

2. For Financial and Experience criteria, the estimated cost of **Rs.27,46,60,700/-** will be considered.

5. **Price Escalation**:

- Price escalation will be applicable for this work.
- Contract price shall be adjusted for increase or decrease in rates and price of Labour, Materials, Fuels & Lubricants in accordance with the following principles & 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 up to end of the initial intended completion date or extensions granted by the Competent Authority 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 dat.

C. Following expressions and meanings during to the work done during each month.

The price adjustment for Material

Vm = 0.85 * (Pm/100)*R*(Mi-Mo) / Mo

Where.

Vm = Increase or decrease in the cost of work during the month under consideration due to change in rates for local materials other than Cement, Steel, Bitumen & POL (Fuel & Lubricants)

Mo = The all-India wholesale price index (All commodities) on 28 days preceding the schedule date of opening of technical bids, as published by the office of Economic Advisor, Dept. for promotion of Industry & internal trade, Ministry of Commerce and Industry.

Mi = The all-India Whole sale price index (all commodities) for the month under consideration as published by the office of Economic Advisor, Dept. for promotion of Industry & internal trade, Ministry of Commerce and Industry.

Pm = Percentage of local Material Component (other than Cement, Steel, Bitumen & POL) of the work.

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.

The following percentage will govern the price adjustment for the entire contract.

1. Labour – Pl		34.83 %
2. Cement – Pc		10.11 %
3. Steel – Ps		9.23 %
4. Bitumen – Pb		0.00 %
5. POL – Pf		0.91 %
6. Plant & Machinery spares – Pp		4.49 %
7. Other Material – Pm		40.43 %
	Total…	100.00 %

Note: The same formula will be applicable to Steel Ps / Cement Pc / Bitumen Pb / Labor Pl / POL (Fuel & Lubricants) Pf / Plant & machinery spares Pp / Other Material Pm.

6. Bidder has to quote their rates without GST and including other taxes. The invoice should be submitted by contractor showing the breakup of GST in the bill. GST will be paid extra at the prevailing rate at the time of execution.

7. The contractor shall have to purchase the material required for this tender work, only from the supplier having registered GST Number. RMC will not be responsible to pay any amount towards GST if the material is purchased from the unregistered supplier / not having GST Number.

8. After opening of Technical Bid, the procedure for the pre-qualification shall be adopted and the Price Bid of only successful qualified bidder shall be opened for final evaluation of the contract. The decision of Municipal Commissioner regarding the pre-qualification shall be final and binding to all the bidders.

9. The Tender of those bidder(s) those who fails to produce the required documents physically within the stipulated date and time, will be treated as non responsive and their Price Bid will not be opened.

10. The bidder should not have been Black Listed, suspended, terminated, backed out, debarred & delisted by any Municipal Body / Urban Local Body / Development Authority in any State Government Body or undertaking / any department or undertaking of Government of India, since inception of the firm / Company. Such a case will be rejected out rightly. A Declaration in this regard on Rs.300/- Stamp Paper duly Notarized shall have to be submitted as per Annexure along with the tender documents. Submission of the bid document without such Notarized declaration will be rejected out rightly.

11. The bidder should provide accurate information on any litigation history or arbitration resulting from contracts completed or under execution by him over the last ten years. This should also include such cases, which are in process / progress. A consistent history of awards against the bidder may result in failure of the bid. In case the bidder has not provided such

information and has come to the notice of the authority, the tender will be rejected at what so ever stage and in such case all the losses that will arise out of this issue will be recovered from the Bidder / bidder and he will not have any defense for the same.

12. Joint Venture will be permitted for this tender.

13. Conditional Tenders will be out rightly rejected.

14. If no agency remains present and are no points for Prebid meeting, "NIL" minutes to be considered and the same will not be uploaded.

15. Rajkot Municipal Corporation, Rajkot, reserves the right to accept / reject any or all e-tender(s) without assigning any reasons thereof.

ADDL. CITY ENGINEER
Rajkot Municipal Corporation

CHECKLIST FOR SUBMISSION OF DOCUMENTS (ONLINE AND OFFLINE)

The bidder must submit the relevant documents as per below:

Sr No	Document Name	ONLINE SUBMISSION	OFFLINE SUBMISSION
1	Tender Fee and EMD	Scan Image	Original DD
2	Tender Documents with Corrigendum, if any	Scan Image	--
3	Work Experience Certificates	Scan Image	--
4	Turnover Certificate from CA	Scan Image	--
5	Working Capital from CA	Scan Image	--
6	Agency Registration Certificate	Scan Image	--
7	GST Registration	Scan Image	--
8	PAN Card	Scan Image	--
9	PF Registration	Scan Image	--
10	ESIC Registration	Scan Image	--
11	Professional Tax (PEC and PRC)	Scan Image	--
12	Non-Blacklist Declaration	Scan Image	Original
13	Litigation History	Scan Image	Original
14	Site Visit Declaration	Scan Image	Original
15	Other documents, if any	Scan Image	--

Note: The bidder must submit all relevant documents as per qualification criteria and tender conditions. No correspondence to the agency will be done for shortfall documents.

Original documents to be brought by bidder/authorized person for verification on the date and time as communicated by engineer-in-charge. Successful bidder to submit hard copy of tender documents including addenda/Corrigendum, if any and other supportive documents as required in this tender, duly stamped & signed on all pages.

ADDL. CITY ENGINEER
Rajkot Municipal Corporation

Name and signature of Bidder

Check List for submission of Documents Tab	
Tender Fee submitted as per Tender	Yes / No
Tender Earnest Money Deposit submitted as per Tender	Yes / No
Registration documents submitted as per tender requirement	Yes / No
Financial Details:	
Turnover details submitted as per requirement	Yes / No
Working Capital as per requirement of tender is submitted	Yes / No
Experience Details:	
Details of Technical Staff and details of machineries submitted	Yes / No
Address proof submitted	Yes / No
Identity proof submitted	Yes / No
Fresh Declaration on Non-Judicial Stamp Paper regarding not black listed or Terminated or Debarred, is submitted	Yes / No
Professional Tax Receipt of current year	Yes / No

Note:
Over and above, the agency shall also have to submit all other necessary documents as may be required for pre-qualification, failing which, the agency will be treated as Non-responsive and will be DISQUALIFIED and also the online price bid of such agency will not be opened.

Signature of contractor with seal

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDER

IT 1. GENERAL

The contract documents may be secured in accordance with the Notice Inviting E-TENDER for the work called. The work shall include supply of materials necessary for construction of the work.

IT 2. INVITATION TO E-TENDER

The Rajkot Municipal Corporation hereinafter referred as the Corporation will receive e-Tenders for the work of as per the specifications and schedule of prices in the e-Tender document. The e-Tenders shall be opened online as specified in the e-Tender notice in the presence of interested Bidders or their representatives. The Corporation reserves the right to reject the lowest or any other or all e-Tenders or part of it which in the opinion of the Corporation does not appear to be in its best interest, and the Bidder shall have no cause of action or claim against the Corporation or its officers, employees, successors or assignees for rejection of his e-Tender.

IT 3. LANGUAGE OF e-TENDER

E-TENDERs shall be submitted in English, and all information in the e-Tender shall also be in English, Information in any other language shall be accompanied by its translation in English. Failure to comply with this may make the e-Tender liable to rejection.

IT 4. QUALIFICATIONS OF BIDDERS

A. The Bidders shall abide by the laws of the Union of India and of Gujarat State and legal jurisdiction of the place where the works are located.

B. The Bidder shall furnish a written statement of financial and technical parameters with details and documents along with his e-Tender which contains namely as below:
   i. The Bidder's experience in the fields relevant to this contract
   ii. The Bidder's financial capacity/resources and standing over at least 7 (Seven) years
   iii. The Bidder's present commitments (Jobs on hand
   iv. The Bidder's capability and qualifications of himself and his regular staff etc
   v. Plants and Machinery available with the Bidder for the work e-Tendered

C. Joint venture:
   i. For the work mentioned above Joint Venture shall be allowed with maximum number of partner two, however all the fees, guarantee amount etc will be in the name of lead partner.
   ii. In Joint Venture, the lead partner as well as any other partner should have experience of similar nature of work, minimum 15 % of the estimated cost.

In case of Joint venture the tender evaluation will be as under:

Financial :-

The finance of each partner will be considered proportionate to their share in the Joint venture agreement.

Technical :-

The experienced of each partner will be added in the tender evaluation.

Bids submitted by a joint venture of two firms as partners shall comply with the following requirements.

i. Tender fee, Earnest Money Deposit, Security Deposit and other financial details will be in the name of the lead partner.
ii. All the partners shall have to enter into the Joint venture agreement and original agreement duly notarized shall have to be submitted along with tender documents.
iii. The bid, and in case of a successful bid, the Form of Contract Agreement, shall be signed so as to be legally binding on all partners.
iv. One of the partners shall be authorized to be in charge, and his authorization shall be evidenced by submitting a power of attorney by legally authorized signatories of all the partners.
v. The partner in charge shall be authorizes to incur liabilities, receive payments and receive instructions for and on behalf of any or all partners of the joint venture and the entire execution of the Contract.
vi. All partners of the joint venture shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms and relevant statement to this effect shall be included in the authorization mentioned under (iv) above as well as in the Bid Form and the Form of Contract Agreement (in case of successful bid); and
vii. Permissible Joint venture partners shall be restricted to two numbers.

The owner or the Engineer-in-charge is not obliged to disclose his findings or his Assessment.

The Bidder shall furnish original documents on the date mentioned in tender notice. The bid for those bidder will be treated as non-responsive who failing to produce original documents on specified date.

IT 5. e-TENDER DOCUMENTS

The e-Tender documents and drawings shall comprehensively be referred to as e-TENDER document. The several sections form in the document are the essential parts of the contract and a requirement occurring in one shall be as binding as though occurring in all, they are to be taken as mutually, explanatory and describe and provide for complete works.

IT 6. EXAMINATION BY BIDDERS

A. At this own expense and prior to submitting his e-Tender, each Bidder shall (a) examine the Contract Documents, (b) visit the site and determine local conditions which may affect the work including the prevailing wages and other pertinent cost factors, (c) familiarize, himself with all central, state and local laws, ordinance, rules regulations and codes affecting the material supply including the cost of permits and licenses required for the work and

(d) correlate his observations, investigations, and determinations with the requirements of the e-TENDER Documents, site & subsoil investigation.

B. The e-Tender is invited on **..%. rate** and contractor shall have to quote his price on % bases **above or below in the schedule -B./ Price Schedule**. The works shall have to be completed in all respect as stated in the e-Tender document to the satisfaction of the Corporation.

C. The following comprises in Contract Documents at a price of **Rs.23,500-00**.

e-TENDER Document:

Part-I

1. Notice inviting Bidders.
2. Instructions to the Bidder.
3. Check List
4. Formats
5. General conditions of contract

Part-II

Technical specifications

Part-III

a. Bid Form (With Price)
b. Preamble to Price schedule
c. Price Schedule (Schedule-B)

General Specifications

1. General note & site description.
2. Definition.
3. Scope of Contract.
4. e-Tender price.
5. Completion Schedule.
6. Site investigation.
7. Contractor's responsibility.
8. Safety.
9. Quality Assurance.
10. Classification of Strata.

D. Copy of the E-TENDER Document should be completed, checked in a responsible manner, digitally signed, and submitted. Security Bond shall be submitted in person by the stipulate date, which shall form the e-Tender.

The e-Tender is required to complete with all the pages in which entries are required to be made by the Bidder are contained in the e-Tender documents and the Bidder shall not take out or add to or amend the text of any of the documents except in so far as may be necessary to comply with any addenda issued pursuant to Clause IT.17 hereof.

IT 7. EARNEST MONEY DEPOSIT:

A. Each Bidder must submit a receipt of deposit as Tender guarantee towards **Earnest money** amounting to **Rs.23,28,000/-** in any form mentioned below:

a) By a Demand Draft on the Rajkot Branch of any Nationalized Bank or Scheduled Bank except co-operative bank.

b) It can be directly deposited in the account of Rajkot Municipal Corporation.

~~c) A Bank Guarantee from Rajkot Branch of any Nationalized Bank or Scheduled Bank except co-operative bank. It shall be valid for a period of not less than Three hundred and Sixty (360) days from the date of submission.~~

EMD shall comply with the requirements for Bond as stipulated in the General conditions of contract. The Tender guarantee bond will be held by the owner as a guarantee that the Bidder, if awarded the contract, will enter into the contract agreement in good faith and furnish the required bonds. Any e-Tender not accompanied by a Tender guarantee in the form of earnest money deposited for the sum stipulated in the e-Tender Document will be summarily rejected.

B. The Earnest Money Deposit will be refunded to the unsuccessful Bidders after an award has been finalized.

C. The Earnest Money Deposit (Tender Guarantee) will be forfeited in event the successful Bidder fails to accept the contract and fails to submit the "Performance Guarantee Bonds to the Owner as stipulated in this e-Tender document within ten (10) days after receipt of notice of award of contract.

The successful Bidder shall furnish the required Security Deposit for performance and plus additional security if any for unbalanced bids in accordance with the condition of the contract and attend the office of the Engineer In-charge for execution of the contract documents. If he fails to furnish the Security Deposit for performance or enter into an agreement to execute the contract for the work offered to him, his Earnest Money Deposit will be forfeited and the Bidder will be Black Listed / Debarred from tendering for further works of Rajkot Municipal Corporation for the period of three years.

D. The Earnest Money Deposit of the successful Bidder shall be returned after the performance guarantee bond, as required, is furnished by the contractor.

E. No interest shall be paid by the owner on any e-Tender guarantee.

IT 8. INCOME TAX CLEARANCE CERTIFICATE: (DELETED)

Latest Income Tax clearance Certificates must accompany with the e-Tender without which the e-Tender is liable to be summarily rejected. The Income Tax Clearance Certificate obtained from the Income Tax Officer shall clearly indicate the Income Tax Pan No/Circle/Ward, District and the reference number of the assessment along with the assessment year.

IT 9. PREPARATION OF e-TENDER DOCUMENTS

Bidders are required to note the following while preparing the e-TENDER Documents:

A. e-TENDER shall be submitted on the e-TENDER form bound here in English. All statements shall be properly filled in. Numbers shall be stated both in words and in figures were so indicated.

B. All entries or prices and arithmetic shall be checked before submission of the e-TENDER. If there is discrepancy between the rates quoted in figures and in words, the rates expressed in words shall be considered as binding.

C. Each e-Tender shall be accompanied by the prescribed e-Tender security bond and other required documents and drawings. All witnesses and sureties shall be persons of status and probity and their full names, occupations and addresses shall be stated below their signature.

D. Variation to the contract Documents requested by the Bidder may be affixed and duly signed and stamped. Such variations may be approved or refused by the Corporation is not obliged to give reason for his decisions.

IT 10. SUBMISSION OF e-TENDER DOCUMENTS

Bidders are requested to submit the e-TENDER Documents on following lines.

A. Volume containing following documents:
   I. Earnest Money Deposit
   II. Certificates as registered contractor in appropriate class with Government of Gujarat or appropriate authority
   III. Bidder's financial capability statement including last three years Income tax returns, balance sheet, duly signed by registered chartered account.
   IV. Bidder's experience in the field relevant to this contract.
   V. A list of the equipment the Bidder possesses and that which he proposed to acquire and use for the purpose related to the work.

The time limit for receipt of e-Tender shall strictly apply in all cases. The Bidders should therefore ensure that their e-Tender is received by the competent authority **The Rajkot Municipal Corporation** at before expiry of the time limit. No delay on account of any cause for receipt of e-Tender shall be entertained.

The e-Tender must contain the name address of residence and place of business of the person or persons submitting the e-Tender and must be digitally signed.

e-TENDER by partnership firm must be furnished with the full names and addresses of all partners and be signed by one of the members of the partnership or by a legally authorized representative holding power of attorney followed by signature and designation of the person of person signing.

e-TENDER by Corporations/Companies must be signed with the legal name of the Corporation/Companies by the president/or by the secretary or other person or persons legally authorized to bind the Corporation/Company in the matter.

IT 11 TENDER VALIDITY PERIOD

The validity period of the e-Tender submitted for this work shall be of One Hundred and Twenty (120) calendar days from the date opening of Technical bid of eTender and that the Bidder shall not be allowed to withdraw or modify the e-Tender offer on his own during the validity period. The Bidder will not be allowed to withdrawn the e-Tender or make any modifications or additions in the terms and conditions on his own e-Tender. If this is done then the owner shall, without prejudice to any other right or remedy, be at liberty to reject the e-Tender and forfeit the earnest money deposit in full.

IT 12 GENERAL PERFORMANCE DATA

Bidder shall present all the information which sought for in the e-Tender document in form of various schedules if given. e-TENDERs may not be considered if left blank or the schedules are not properly filled in.

IT 13 SIGNING OF e-TENDER DOCUMENTS

If the Tender is made by an individual it shall be signed with his full name above his current address. If the Tender is made by a proprietary firm, it shall be signed by the proprietor above his name and the name of his firm with his current address.

If the e-Tender is made by a firm in partnership, it shall be signed by all the partners of the firm above their full names and current address, or by a partner holding the power of attorney for the firm, in which case a certified copy of the power of attorney shall accompany the e-TENDER. A certified copy of the partnership deed, current addresses of all the partners of the firm shall also accompany the e-Tender.

If the e-Tender is made by a limited company or a limited corporation, it shall be signed by a duly authorized person holding the power of attorney, shall accompany the e-Tender. Such limited company or corporation may be required to furnish satisfactory evidence of its existence before the contract is awarded.

If the e-TENDER is made by a group of firms, the sponsoring firm shall submit complete information pertaining to each firms in the group and state along with the bid as to which of the firms shall have the responsibility for e-Tendering and for completion of the contract documents and furnish evidence admissible in law in respect of the authority to such firms on behalf of the group of firms for e- Tendering and for completion of contract documents. The full information and satisfactory evidence pertaining to the participation of each member of the group of firms in the e-Tender shall be furnished along with the e-Tender.

All witnesses and sureties shall be persons of status and probity and their full names, occupations and addresses shall be stared below their signatures. All the signatures in the e-Tender document shall be dated.

IT 14 WITHDRAWAL OF TENDERS

If, during the tender validity period, the Bidder withdraws his Tender, Tender security (Earnest Money) shall be forfeited and Bidder will be debarred for next three years to quote in R.M.C.

IT 15 INTERPRETATIONS OF e-TENDER DOCUMENTS

Bidders shall carefully examine the e-TENDER Document and fully inform themselves as to all the conditions and matters which may in any way affect the work or the cost thereof. If a Bidder finds discrepancies or omission from the specifications or other documents or should be in doubt as to their meaning, he should at once address query to the ADDL. CITY ENGINEER, R.M.C. The result of interpretation of the e-TENDER will be issued as addendum.

IT 16 ERRORS AND DISCREPANCIES IN e-TENDERS

In case of conflict between the figures and words in the rates the rate expressed in words shall prevail and apply in such cases.

IT 17 MODIFICATION OF DOCUMENTS

Modification of specifications and extension of the closing date of the e-Tender, if required will be made by an addendum. Each addendum will be made available online to all Bidders. These shall form a part of e-Tender. The Bidder shall not add to or amend the text of any of the documents except in so far as may be necessary to comply with any addendum.

ADDENDA

Addenda form part of the Contract Documents, and full consideration shall be given to all Addenda in the preparation of e-Tender. Bidders shall verify the number of Addenda issued, if any and acknowledge the receipt of all Addenda in the e-TENDER Failure to so acknowledge may cause the e-Tender to be rejected.

A. RMC may issue Addenda to advise Bidders of changed requirements. Such addenda may modify previously issued Addenda.

B. No addendum may be issued after the time stated in the notice inviting e-Tenders.

IT 18 TAX AND DUTIES ON MATERIALS

All charge on account of excise duties, Central / State, sales tax, work contract tax and other duties etc. on materials obtained for the works from any source shall be borne by the contractors. No (P) or 'C' or 'D' form shall be supplied.

IT 19 EVALUATION OF e-TENDERS

While comparing e-Tenders, the Rajkot Municipal Corporation shall consider factors like price offer is workable with the market price, efficiency and reliability of construction method proposed, compliance with the specifications, relative quality, work done in past with Rajkot Municipal Corporation or other Government Organizations, litigation issues etc. Evaluation criteria specifically mentioned in the specification will also be taken into consideration in the evaluation of e- Tenders.

IT 20 TIME REQUIRED FOR COMPLETION

The completion period mentioned in this schedule is to be reckoned from the date of notice to proceed. Total completion period is **18 Months** from the date of issue of notice to proceed and contractor should adhere to this completion time. Monsoon period from 1st July to 30th September will be considered as non-working period and hence excluded in time limit.

IT 21 POLICY FOR TENDER UNDER CONSIDERATION

TENDER shall be termed to be under consideration from the opening of the e-Tender until such time any official announcement or award is made.

While e-Tenders are under consideration, Bidders and their representative or other interested parties are advised to refrain from contacting by any means any Corporation personnel or representatives on matters related to the e-Tenders under study. The Corporation's representatives if necessary will obtain clarification on e-Tenders by requesting such information from any or all the Bidders, either in writing or through personal contact, as may be necessary. The Bidder will not be permitted to change the substance of his e-Tender after e-Tenders have been opened. This includes any post Tender price revision. Non-compliance with his provision shall make the Tender liable for rejection.

IT 22 PRICES AND PAYMENTS

The Bidder must understand clearly that the prices quoted are for the total works or the part of the total works quoted for and include all costs due to materials, labour, equipment, supervision, other services, royalties, taxes etc. and to include all extra to cover the cost. No claim for additional payment beyond the prices quoted will be entertained and the Bidder will not be entitled subsequently to make any claim on any ground.

IT 23 PAYMENT TERMS

The terms of payment are defined in the General Conditions of Contract and Technical specifications. The Corporation shall not under any circumstances relax these terms of payment and will not consider any alternative payment terms. Bidders should therefore in their own interest note this provision to avoid rejection of their e-Tenders.

IT 24 AWARD

Award of the contract or the rejection or e-TENDERs will be made during the Tender validity period. A separate Schedule-B (Price Schedule) is given. The

contractors are requested to quote their price offer **in % below or above on the given price in the schedule-B of Price Schedule only.**

A. After all contract contingencies are satisfied and the Notice of Award is issued, the successful Bidder shall execute the Contract Agreement within the time stated and shall furnish the Bond as required herein. The contract Agreement shall be executed, in form stipulated by the Owner.

B. If the Bidder receiving the Notice of Award fails or refuses to execute the Contract Agreement within the stated time limit or fails or refuses to furnish the Bond as required herein. The Owner may annul his award and declare the e-Tender security forfeited and will take action as deemed fit.

C. A Corporation, partnership firm or other consortium acting as the Bidder and receiving the award shall furnish evidence of its existence and evidence that the officer signing the contract agreement and Bonds for the corporation, partnership firm or other consortium acting as the Bidder is duly authorized to do so.

IT 25 SIGNING OF CONTRACT

The successful Bidder shall be required to execute the contract agreement within 10 days of receipt of intimation to execute the contract, failing which the Corporation will be entitled annul to the award and forfeit the Earnest Money Deposit. The person to sign the contract document shall be person as detailed in Article IT.13 (signing of e-Tender documents).

IT 26 DISQUALIFICATION

A e-Tender shall be disqualified and will not be taken for consideration if,

(a) The envelope does not show on the outside the reference of bid and thus gets opened before the due date of opening (as per Article IT 10 i.e. submission of tender document)
(b) The Tender fee and Tender Earnest Money Deposit is not deposited in full and in the manner as specified as per Article IT.7 i.e. Earnest Money Deposit.
(c) The e-Tender is in a language other than English or does not contain its English Translation in case of other language adopted for e-Tender preparation.
(d) The e-Tender documents are not signed by an authorized person (as per Article IT. 13 i.e. signing of e-Tender documents).
(e) The general performance data for qualification is not submitted fully (as per Article IT 12 i.e. General performance Data).
(f) Bidder does not agree to payment terms defined as per Article IT. 23 i.e. payment terms.

A. A e-Tender may further be disqualified if,

(a) Price variation is proposed by the Bidder on any principle other than those provided in the e-TENDER Documents
(b) Completion schedule offered is not consistent with the completion schedule defined and specified in e-Tender document
(c) The validity of e-Tender bond is less than that mentioned in Article IT. 11 i.e. e - Tender validity period
(d) Any of the page or pages of e-Tender is/are removed or replaced

(e) Any conditional tender.
(f) All corrections or posted slips are not initiated by Bidder.
(g) Any erasure is made in the e-tender.

IT 27 PERFORMANCE GUARANTEE (SECURITY DEPOSIT)

As a contract security the Bidder to whom the award is made shall furnish a performance guarantee (Security deposit) for the amount of **5%** of the contract price to guarantee the faithful performance, completion and maintenance of the works of the contract in accordance with all conditions and terms specified herein and to the satisfaction of the Engineer-in-charge and ensuring the discharge of all obligations arising from the execution of contract.

Additional performance guarantee is payable if,

1. the contract price offered by the selected bidder is lower than 10% but upto 20% of the estimated project cost than the additional performance security shall be calculated @ 20% of the difference in the estimated project cost minus 10%of the estimated project cost and Contract price offered by the selected bidder.
2. the contract price offered by the selected bidder is lower than 20% of the Estimated project cost than the additional performance security shall be calculated @ 30% of the difference in the Estimated project cost minus 10%of the Estimated project cost and Contract price offered by the selected bidder.

This additional performance security shall be treated as part of the performance security.

Performance security shall be valid beyond 60 days of the defect liability period and the additional performance security shall be valid beyond 28 days of project completion date.

Final SD will be calculated at the time of final bill i.e. actual completion amount.

Performance as mentioned above may be in the forms mentioned below:

a) By a Demand Draft on the Rajkot Branch of any Nationalized Bank or Scheduled Bank except co-operative bank.

b) A fixed deposit receipt of any Schedule Bank or Nationalized Bank (except Co-operative Bank) duly endorsed in favour of the **Rajkot Municipal Corporation, Rajkot.**

c) A Bank Guarantee from Rajkot Branch of any Nationalized Bank or Scheduled Bank except co-operative bank.

The performance guarantee shall be delivered to the Corporation within ten (10) days of the notice of award and at least three (3) days before the contract agreement is signed unless otherwise specified by the Engineer-in-charge. Alternatively, the contractor may at his option deposit an amount of **2.5%** of the value of the contract price within ten days and the balance

2.5% to be recovered in installments through deduction @ the rate of 10% from the running account bills. It is further clarified that Performance Guarantee (SD) for extra work will also be recovered @ 10% from the bill of extra work i.e. works beyond tender amount.

On due performance and completion of the contract in all respects, **THE PERFORMANCE GUARANTEE (SECURITY DEPOSIT) WILL BE RELEASED TO THE CONTRACTOR WITHOUT ANY INTEREST AFTER DEFECT LIABILITY PERIOD IS OVER.**

IT 28 STAMP DUTY

The successful Bidder shall have to enter into an agreement on a non-judicial stamp paper of amount as per Stamp Duty Act in the form of the agreement approved by the Corporation. The cost of stamp paper and adhesive stamp shall be borne by the contractor.

IT 29 BRAND NAMES

Specific reference in the specifications to any material by manufacturer's name, or catalogue shall be constructed as establishing a standard or quality and performance and not as limiting competition and the Bidder in such cases, may at his option freely use only other product, provided that it ensures an equal of higher quality than the standard mentioned and meets Corporation approval.

IT 30 NON TRANSFERABLE

e-TENDER documents are not transferable.

IT 31 COST OF e-Tendering

The owner will not defray expense incurred by Bidders in e-Tendering.

IT 32 EFFECT OF e-Tender

The e-Tender for the work shall remain for a period of One hundred and Twenty (120) calendar days from the date of opening of Technical Bid for this work and that the Bidder shall not be allowed to withdraw or modify the offer in his own during the period. If any Bidder withdraws or makes any modification or additions in the terms and conditions of his own e-Tender, then the Corporation shall, without prejudice to any other right or remedy, be at liberty to reject the e-Tender and forfeit the earnest money in full.

IT 33 CHANGE IN QUANTITY

The Corporation reserves the right to waive any information in any e-Tender and to reject one or all e-Tenders without assigning any reasons for such rejection and also to vary the quantities of items or group as specified in the scheduled of prices as may be necessary.

IT 34 NEW EQUIPMENT AND MATERIAL

All materials, equipment and spare parts thereof shall be new, unused and originally coming from manufacturer's plant to the Corporation. The rebuilt or overhauled equipment/materials will not be allowed to be used on works.

IT 35 RIGHTS RESERVED

The owner reserves the right to reject any or all e-Tenders, to waive any informality or irregularity in any e-Tender without assigning any reason. The owner further reserves the right to withhold issuance of the notice to proceed, even after execution of the contract agreement. No payment will be made to the successful Bidder on account of such withholding. The owner is not obliged to give reasons for any such action.

IT 36 ADDITIONAL RIGHTS RESERVED

The Commissioner, Rajkot Municipal Corporation, reserves the right to reduce the scope of work & split the e-Tender in two or more parts without assigning any reason even after the awards of contract.

IT 37 MOBILIZATION ADVANCE

No mobilization advance or advance on machinery will be given.

IT 38 CONDITIONAL e-Tenders

The scope of work is clearly mentioned in the e-Tender documents. The contractor shall have to carry out the work in accordance with the details specifications. No condition will be accepted. The conditional e-Tender will liable to be rejected.

IT 39 CESS & REGISTRATION:

For the welfare of labour working under construction Industry, the agency shall have to take the registration with competent authority as per Circular No.CWA/2004/841/M-3 dated 30-01-2006 of Government of Gujarat. Rajkot Municipal Corporation will deduct prevailing CESS of the value of work and will deposit the same in Government.

IT 40 ESI REGISTRATION:

The contractors who are liable to be registered under ESI Act must possess ESI registration number at the time of filling of tender. The agency should follow all the rules and regulations of ESI Act as per prevailing norms.

IT 41 PROFESSIONAL TAX

The bidder shall have to pay the Professional Tax for current financial year imposed by Government of Gujarat, and also the bidder shall have to produce Enrollment Certificate for the same.

IT 42 PF CODE:

The contractors who are liable to be registered under EPF Act, 1950 must possess EFP code at the time of filling of tender. The agency should follow all the rules and regulations of the Act as prevailing currently.

IT 43 LABOUR LICENSE:

The contractors who are liable to be registered under Contract Labour Act, 1970 must possess online Labour License at the time of filling of tender. The agency should follow all the rules and regulations of the Act as prevailing currently.

IT 44 FILLING OF e-TENDER

The bidder shall have to fill all the details required in on-line bidding form of e-Tender. Incomplete OR inappropriate OR wrong information filled may cause the e-Tender to be rejected.

Add. Asst. Engineer	**Dy. Executive Engineer**	**ADDL. CITY ENGINEER**
R. M. C.	**R. M. C.**	**Rajkot Muni. Corporation**

Signature of Bidder:

F O R M A T S

Financial & Other Statements

Information / Details to be submitted by the Bidders in the Performa mentioned under Statement no 1 to 9. All the documents submitted herewith as supporting documents shall be duly attested and certified true copy.

STATEMENT NO-1

DECLARATION

I / We _____hereby declared that I am / We partner(s) are not black listed or Terminated or Debarred or suspended, backed out, delisted or connected with firm black listed or terminated or debarred or suspended or backed out or delisted in any States, CPWD/ MES/ Railways or any Government, Semi- Government or Private body since the inception of the firm / company. Also, no Police complaint is lodged against the firm / company or Staff deployed by me / us.

At present I am / we are registered as approved contractor(s), firms in ___ _____State, CPWD / MES / Railways.

I, owner / We, the partners of this firm, hereby give an undertaking that we are jointly and severally responsible to meet all the liabilities ever and above the business of this firm and make good the above financial loss sustained by the Rajkot Municipal Corporation as a result of our abandoning the works entrusted to us.

I further undertake that if above declaration proves to be wrong/ incorrect or misleading, our tender/ contract stands to be cancelled/ terminated.

Date:
Place:

_____
Signature of Authorized Person

With
Notarised

STATEMENT NO-2

APPLICABILITY OF PROVIDENT FUND AND MISCELLANEOUS PROVISIONS ACT 1952

Successful bidder i.e. the agency whose tender is accepted by the RMC shall have to comply the necessary formalities under the employees provident fund and Miscellaneous Provisions Act, 1952 as Contributory Provident Fund Scheme is applicable to labourers engaged in construction activity and shall have to submit proofs regarding deduction of provident fund and other dues and depositing the same with government department under the act and the scheme regularly on monthly basis failing which no running / final bill payment will be made by the RMC to the contractor in any circumstances.

A certificate to the above effect has to be given by the contractor as under.

Declaration
Of
Depositing Provident Fund contribution

This to certify that we have deducted the employees' P.F. and deposited the same along with employer's contribution towards provident fund on labour charges / wages paid by us to the labourers engaged for the work of ____ _____with Provident Fund Authority under our Provident Fund Code No._____

We produce herewith the copies of the challans for the provident fund deduction and contribution deposited as mentioned above.

Date: **Seal and Signature of the Bidder**

STATEMENT NO. –3

CURRICULAM VITAE

Sr.No.	Details of person	
1.	Name	
2.	Age	
3.	Qualifications	
4.	Experience in Project Related field	
5.	Other experiences	
6.	Employment Record.	

Sr.No.	Period From - To	Organization under which work	Status / position in the organization

Note:

(1) Separate sheet for each person to be furnished as above.

(2) The contractor's Project Team should consist of persons in the following disciplines.

a) Senior Engineer with experience of Building work
b) Senior material Engineer.
c) Senior Quantity Surveyor.
d) Project management expert.
e) Site in charge

STATEMENT – 4

INFORMATION REGARDING FINANCIAL CAPACITY OF THE CONTRACTORS

Sr.	Details	Amount (Rs. in lakhs)	Remarks
1.	~~Solvency~~		~~A Banker's Certificate of current financial year may please be attached.~~
2.	Annual Turnover for the last seven years.		Certified true copy to be attached
3.	Price of biggest similar nature job carried out		Certified true copy to be attached

STATEMENT NO. – 4/A

BIDDER'S FINANCIAL CAPACITY

Sr. No.	Financial Year	Annual Turnover in Engineering Project Rs.	Net worth Rs.	Net Cash Rs.	Working Capital Rs.
1	2023-2024				
2	2022-2023				
3	2021-2022				
4	2020-2021				
5	2019-2020				
6	2018-2019				
7	2016-2017				

Note:-

1) Figures to be taken from audited balance sheets. Duly certified attested true copy
2) Copies of the balance sheet to be attached..
3) The bidder shall have to provide that for a period of at least 18 Months the bidder has ability to sustain negative cash balance and how he proposes to meet with the same.
4) Cash Plan / Cash flow Statement.

STATEMENT NO. – 4 / B

AVAILABLE BID CAPACITY

	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Value of works executed in Rs. Crores.							

The available bid capacity will be worked out as follows.

Available bid capacity = (A x N x 2) – B,

where

A = Maximum of updated total amount of work executed in any one year of the last five financial years.

B = The amount of the existing commitments and ongoing works to be discharge during time interval of N years from the bid due date.

N = Number of years prescribed for completion of the proposed works

STATEMENT NO. – 5

LIST OF SINGLE PROJECT WORK OF NOT LESS THAN 40% OF THE ESTIMATED COST COMPLETED DURING THE LAST SEVEN YEARS.

Sr. No.	*Year of Construct ion work*	*Name of Project*	Name of owner & contact person of the project, address, phone	Total cost of the work	Total value of work done	Date of starting work	Date of Actual completion of work
1	*2*	3	4	5	6	7	8
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

***Note**: Certificate from the owners in support of above works may be enclosed with this statement.*

STATEMENT NO. 5 / A

Detailed information of similar type of work costing not less than 40% of tender amount completed with good quality and workmanship in the past seven years.

Name of Contractor: _____

Sr. No.	Name of work	Name of client	Estimated cost of work (Rs. Lakhs)	Tendered amount Rs. (Lakhs)	Date of award of contract	Target date of completion	Actual date of completion	Reason for delay	Amount of work done during last seven years preceding this tender (Rs. Lakhs).							Amount of work done after March 2021 (Rs. Lakhs	Remarks
									2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24		

***Note**: Certificate from the owners in support of above works may be enclosed with this statement.*

STATEMENT NO – 5/B

DETAILS OF IMPORTANT CONSTRUCTION PROJECTS

Sr. No.	Name of Project	Estimated cost	Prescribed time of performance		Actual Completion		Actual Completion Cost Rs.	Name, address and
			Start Date	Completion Date	Start Date	Completion Date		
1	2	3	4	5	6	7	8	9

***Note**: Certificate from the owners in support of above works may be enclosed with this statement.*

STATEMENT NO. – 5/C

DETAILS OF ONGOING PROJECT

Sr. No	Name of project	Value of remaining work Rs. in lakhs.	Start date	Likely date of completion	Name, address, telephone, fax no. of project authority and contact person.

STATEMENT NO.-6

DETAILS OF PLANT & MACHINERY TO BE DEPLOYED ON THIS WORK

Name of the contractor/company_____

Sr. No	Name of plants/ machinery	Nos. available (with make & year)	Nos. proposed to be deployed for this project	Present location	Present value of plant/ machineries
1	2	3	4	5	6

Note:

Plant / machineries which are proposed to be procured shall have to be procured at the earliest after award of the work and before the start of the work.

STATEMENT NO. 7

METHOD STATEMENT AND WORK PLAN

The Bidder shall have to provide a brief write up to be enclosed with the "Technical Bids" covering his approach and methodology to handle the project construction activities including his details work plan. The brief shall include the following aspects.

Sr. No.	Components	
1.	Methodology	
2.	Construction equipment availability and plan of deployment.	
3.	PERT / Construction chart / Bar chart.	

Application Form(1)

General Information

All individual firms and each partner of a consortium applying for qualification are requested to complete the information in this form. Nationality information to be provided for all owners or applicants who are partnerships or individually-owned firms.

Where the Applicant proposes to use named subcontractors for critical components of the works, or for work contents in excess of 10 percent of the value of the whole works the following information should also be supplied for the specialist subcontractor(s).

1.	Name of Firm	
2.	Head office address	
3.	Telephone	Contact
4.	Fax	Telex
5.	Place of incorporation/registration	Year of incorporation/ registration

	Nationality of owners	
	Name	**Nationality**
1.		
2.		
3.		
4.		
5.		

Name of Bidders officers / Persons to be contacted			
Name.	**Address**	**Phone Nos.**	**Fax.**

Application Form (1A)

Structure and Organization

1. The applicant is - an individual - a proprietary firm - a firm in partnership - a Limited Company or Corporation - a group of firms/consortium (if Yes, give completion information in respect of each partner)	
2. Attach the Organization Chart showing the structure of the organization including the names of the Directors and position of officers	
3. Experience (in Number of years):	
As a Prime Contractor (contractor shouldering major responsibility - in own country - other countries (specify country)	
In a consortium in own country other countries (Specify country)	
As a sub-contractor (specify main contractor) - in own country - other countries (Specify country)	
4. Name and address of any associates the applicant has in India (in case the applicant happens to be from foreign country) who are knowledgeable in the procedures of customs, immigration, taxes and other information necessary to do the work.	
5. For how many years has your organization been in business of similar work under its present name? What were your fields when your organization was established? Whether any new fields were added in your organization? And if so, when?	

6. Were you ever required to suspend construction for a period of more than six months continuously after you started? If so, give the name of project and give reasons thereof.	
7. Have you ever left the work awarded to you incomplete? If so, give name of project and reasons for not completing work.	
8. In which fields of civil engineering construction do you claim specialization and interest?	
9. Give details of your experience in mechanized cement concrete lining and in modern concrete technology for manufacture and quality control.	
10. Give details of your experience in using heavy earth moving equipment and quality control in compaction of soils.	
11. Give details of your experience in Underground Drainage work in rocky area.	
12. Give details of civil work for drainage pumping station	
13. Give details for construction of sewerage treatment plant	
14. Give details for pumping machinery in drainage pumping station	

GENERAL CONDITIONS OF CONTRACT

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GC-01 **DEFINITIONS AND INTERPRETATIONS :**

1.0 In the contract (as hereinafter defined) the following words and expressions shall, unless repugnant to the subject or context thereof, have the following means as signed to them.

1.1 The "Owner / Corporation" shall mean Rajkot Municipal Corporation and shall include its Municipal Commissioner or other Officers authorized by the Corporation and also include owner's successors and assignees.

1.2 The "Contractor" shall mean the person or the persons, firm or Company whose e-Tender has been accepted by the Owner and includes the Contractors legal representative, his successors and permitted assigned.

1.3 DELETED

1.4 The "Engineer-In-Charge" shall mean the person designated as such by the owner from time to time and shall include those who are expressly authorized by the Corporation to act for and on its behalf for all functions pertaining to the operation of this contract.

1.5 Engineer-In-Charge's Representative shall mean any resident Engineer or Assistant to the Engineer-In-Charge appointed from time to time by the owner to perform duties set forth in the E-TENDER Document whose authority shall be notified in writing to the Contractor by the Engineer-In-Charge.

1.6 "E-TENDER" – the offer or proposal of the Bidder submitted in the prescribed form setting for the prices for the work to be performed, and the details thereof.

1.7 "Contract Price" shall mean total money payable to the Contractor under the contract. (This includes estimated amount as well as GST and Contractors' premium)

1.8 "Addenda" shall mean the written or graphic notices issued prior to submission of e-Tender which modify or interpret the contract documents.

1.9 "Contract Time" – the time specified for the completion of work.

1.10 "Contract" shall mean agreement between the parties for the execution of works including therein all contract documents.

1.11 "Contract Document" shall mean collectively the e-Tender documents, designs, drawings, specifications, agreed variations, if any and such other documents constituting the e-Tender and acceptance thereof.

1.12 "The Sub-Contractor" shall mean any person, firm or company (other than the Contractor) to whom any part of the work has been entrusted by the Contractor with the written consent of the Engineer-In-Charge and the legal representative successors and permitted assignee of such person, firm or company.

1.13 The "Specifications" shall mean all directions, the various Technical Specifications, provisions and requirements attached to the contract which pertains to the method and manner of performing the work, to the quantities and qualities of the work and the materials to be furnished under the contract for the work and any order(s) or instruction(s) there under. It shall also mean the latest Indian Standard Institute Specification

relative to the particular work or part thereof, so far as they are not contrary to the E-TENDER specifications and in absence of any other Country applied in Indian as a matter of standard engineering practice and approved in writing by the Engineer-In-Charge with or without modification.

1.14 The "Drawings" shall include maps, plans, tracings, or prints thereof with any modification approved in writing by the Engineer-In-Charge and as such other drawings as may, from time to time, be furnished or approved in writing by the Engineer-In-Charge in connection with the work.

1.15 The "Work" shall mean the works to be executed in accordance with the contract or the part thereof as the case may be and shall include extra, additional, altered or substituted works as required for the purpose of the contract. It shall mean the totality of the work by expression or implication envisaged in the contract and shall include all materials, equipment and labour required for or relative or incidental to or in connection with the commencement, performance and completion of any work and / or incorporation in the work.

1.16 The "Permanent Work" shall mean works which will be incorporated in and form part of the work to be handed over to the owner by the Contractor on completion of the contract.

1.17 The "Temporary Work" shall mean all temporary works of every kind required in or about the execution, completion and maintenance of the work.

1.18 "Site" shall mean the land and other places, on, under, in or through which the permanent works are to be carried out and any other lands or places provided by the Corporation for the purpose of the contract together with any other places designated in the contract as forming part of the site.

1.19 The "Construction Equipment" shall mean all appliances / equipment of whatever nature required in or for execution, completion or maintenance of works or temporary works (as herein before defined) but does not include materials or other things intended to form or forming part of the permanent work.

1.20 **"Notice in writing or written Notice"** shall mean a notice written, typed or in printed form delivered personally **OR** sent by Registered Post to the last known private or business address or Registered Office of the Contractor **OR** through e-mail **OR** mobile message shall be deemed to have been received in the ordinary course of post it would have been delivered.

1.21 The "Alteration / variation order" shall mean an order given in writing by the Engineer-In-Charge to effect additions or deletions from or alterations in the work.

1.22 "Final Test Certificate" shall mean the final test certificate issued by the owner within the provisions of the contract.

1.23 The "Completion Certificate" shall mean the certificate to be issued by the Engineer-In-Charge when the work has been completed and tested to his satisfaction.

1.24 The "Final Certificate" shall mean the final certificate issued by the Engineer-In-Charge after the period of defects liability is over and the work is finally accepted by the owner.

1.25 "Defects Liability Period" shall mean the specified period between the issue of Completion Certificate and the issue of final certificate during which the Contractor is responsible for rectifying all defects that may appear in the works.

1.26 "Approved" shall mean approved in writing including subsequent confirmation in writing of previous verbal approval and "Approval" means approved in writing including as aforesaid.

1.27 "Letter of Acceptance" shall mean an intimation by a letter to Bidder that his e-Tender has been accepted in accordance with the provisions contained therein.

1.28 "Order" and "Instructions" shall respectively mean any written order or instruction given by the Engineer-In-Charge within the scope of his powers in terms of the contract.

1.29 "Running Account Bill" shall mean a bill for the payment of "On Account" money to the Contractor during the progress of work on the basis of work done and the supply of non-perishable materials to be incorporated in the work.

1.30 "Security Deposit" shall mean the deposit to be held by the owner as security for the due performance of the contractual obligations.

1.31 The "Appointing Authority" for the purpose of Arbitration shall be the Municipal Commissioner, Rajkot Municipal Corporation.

1.32. "Retention Money" shall mean the money retained from R.A.Bills for the due completion of the "LET WORS".

1.33 Unless otherwise specifically stated, the masculine gender shall include the feminine and neuter genders and vice-versa and the singular shall include the plural and vice-versa.

GC-02 **LOCATION OF SITE AND ACCESSIBILITY :**

The intending bidders should inspect the site & make thyself familiar with site conditions and available communication facilities.

Non-availability of access roads shall in no case be the cause to condone delay in the execution of the work and no claim or extra compensation will be paid.

GC-03 **SCOPE OF WORK :**

The scope of work is defined broadly in the special conditions of contract and specifications. The Contractor shall provide all necessary materials, equipment and labour etc. for the execution and maintenance of the work. All material that go with the work shall be approved by the Engineer-In-Charge prior to procurement and use.

Power Supply :

The Contractor shall make his own arrangement for power supply during installation.

Land for Contractor's Field Office, Godown Etc.:
Owner will not be in a position to provide land required for Contractor's field office, godown, etc. The Contractor shall have to make his own arrangement for the same.

GC-04 **RULING LANGUAGE :**
The language according to which the contract shall be construed and interpreted shall be English. All entries in the contract document and all correspondence between the contractor and the Corporation or the Engineer-In-Charge shall be in English/Gujarati. All dimensions for the materials shall be given in metric units only.

GC-05 **INTERPRETATION OF CONTRACT DOCUMENT :**

1. The provision of the General Conditions of Contract and Special Conditions of Contract shall prevail over those of any other documents of the contract unless specifically provided otherwise, should have there be any discrepancy, inconsistency, error or omission in the several documents forming the contract, the matter may be referred to the Engineer-In-Charge for his instructions and decision. The Engineer-In-Charge's decision in such case shall be final and binding to the Contractor.

2. Works shown upon the drawings but not described in the specifications or described in the specifications without showing on the drawings shall be taken as described in the specifications and shown on the drawings.

3. The headings and the marginal notes to the clause of these General Conditions of Contract or to the specifications or to any other part of e-Tender documents are solely for the purpose of giving a concise indication and not a summary of contents thereof. They shall never be deemed to be part thereof or be used in the interpretation or construction of the contract.

4. Unless otherwise states specifically, in this contract documents the singular shall include the plural and vice-versa wherever the context so requires. Works imparting persons shall include relevant Corporations / Body of individual / firm of partnership.

5. Notwithstanding the sub-division of the documents into separate section and volumes every part of each shall be supplementary to and complementary of every other part and shall be read with and into the context so far as it may be practicable to do so.

6. Where any portion of the General Conditions of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract, then, unless a different intention appears, the provisions of the special conditions of contract shall be deemed to over ride the provisions of General Conditions of Contract to the extent of each repugnancy of variance.

7. The materials, design, and workmanship shall satisfy the relevant IS, and codes referred to. If additional requirements are shown in the specifications, the same shall be satisfied over and above IS and other codes.

8. If the specifications mention that the Contractor shall perform certain work or provide certain facilities, it shall mean that the Contractor shall do so at his own cost.

9. **Contractor to Collect His Own Information -**
The details given in the e-Tender are arranged making necessary investigations for framing an estimate. However, when the work is being executed, changes in soil conditions are likely to be met with in view of the formation of soil, strata in Rajkot District. It is, therefore, desirable that the Contractor makes his own investigations or additional investigations as may be required for correctly assessing the cost of different items of work and submit his e-Tender accordingly. Any change in description or quantity of an item shall not vitiate the contract or release the Contractor from executing the work comprised in the contract according to the drawings and specifications at the e-Tendered rates.

He is deemed to have know the scope, nature and magnitude of the work and the requirements of materials and labour involved and as to whatever work he has to complete in accordance with the contract. The Contractor is expected to visit the site and surroundings to satisfy himself as to the nature of all existing structures, if any, and also as to the nature and the conditions of railways, roads, bridges and culverts, means of transport and communications whether by land, air or water and as to possible interruptions thereto and the access and gross from the site, to have examined and satisfied himself as to the sites for obtaining sand, stones, bricks and other materials, the site for disposal of surplus materials, the available accommodation and make such enquiries as may be necessary for executing and completing the work, to have local enquiries as to the sub-soil, subsoil water and variation thereof, storms, prevailing winds, climatic conditions and all other similar matters, effecting work. He is expected to be familiar with his liability for payment of Government taxes, customs and excise duty and other charges etc. in contract with the execution of this contract.

GC-06 **CONTRACTOR TO UNDERSTAND HIMSELF FULLY :**
The Contractor by e-Tendering shall be deemed to have satisfied himself, as to all considerations and circumstances affecting the e-Tender price, as to the possibility of executing the works as shown and described in the contract and to have fixed his prices according to his own view on these matters and to have understood that no additional allowances except as otherwise expressly provided, will afterwards be made beyond the contract price. The Contractor shall be responsible for any misunderstanding or incorrect information, however, obtained.

GC-07 **ERRORS IN SUBMISSIONS :**
The Contractor shall be responsible for any errors or omissions in the particulars supplied by him, whether such particulars have been approved by the Engineer-In-Charge or not.

GC-08 **SUFFICIENCY OF e-TENDER :**
The Contractor shall be deemed to have satisfied himself before e-Tendering as to the correctness of the e-Tender rates which rates shall, except as otherwise provides for, cover all the Contractor's liabilities and obligations set forth or implied in the contract for the proper execution of the work for compliance with requirements of Article GC-19 thereof.

GC-09 **DISCREPANCIES :**

The drawings and specifications are to be considered as mutually explanatory of each other, detailed drawings being followed in preference to small-scale drawings and figured dimensions in preference to scale and special conditions in preference to General Conditions. The special directions or dimensions given in the specifications shall supercede all else. Should any discrepancies however, appear or should any misunderstanding arise as to the meaning and intent of the said specifications or drawings, or as to the dimensions or the quality of the materials or the due and proper execution of the works, or as to the measurement or quality and valuation of the work executed under this contract or as extra there upon, the same shall be explained by the Engineer-In-Charge and his explanation shall be subject to the final decision of the Municipal Corporation in case reference be made to it, be binding upon the Contractor and the Contractor shall execute the work according to such explanation and without addition or to deduction from the contract price and shall also do all such works and things necessary for the proper completion of the works as implied by the drawings and specifications, even though such works and things are not specially shown and described in the said specifications. In cases where no particular specifications are given for any article to be used under the contract, the relevant specifications of the Indian Standard Institution shall apply.

GC-10 **PERFORMANCE GUARANTEE (SECURITY DEPOSIT) :**

As a contract security the Bidder to whom the award is made shall furnish a performance guarantee (Security deposit) for the amount of **5%** of the contract price to guarantee the faithful performance, completion and maintenance of the works of the contract in accordance with all conditions and terms specified herein and to the satisfaction of the Engineer-in-charge and ensuring the discharge of all obligations arising from the execution of contract.

Additional performance guarantee is payable if,

1. the contract price offered by the selected bidder is lower than 10% but upto 20% of the estimated project cost than the additional performance security shall be calculated @ 20% of the difference in the estimated project cost minus 10%of the estimated project cost and Contract price offered by the selected bidder.
2. the contract price offered by the selected bidder is lower than 20% of the Estimated project cost than the additional performance security shall be calculated @ 30% of the difference in the Estimated project cost minus 10%of the Estimated project cost and Contract price offered by the selected bidder.

This additional performance security shall be treated as part of the performance security.

Performance security shall be valid beyond 60 days of the defect liability period and the additional performance security shall be valid beyond 28 days of project completion date.

Final SD will be calculated at the time of final bill i.e. actual completion amount.

Performance as mentioned above may be in the forms mentioned below:

a) By a Demand Draft on the Rajkot Branch of any Nationalized Bank or Scheduled Bank except co-operative bank.

b) A fixed deposit receipt of any Schedule Bank or Nationalized Bank (except Co-operative Bank) duly endorsed in favour of the **Rajkot Municipal Corporation, Rajkot.**

c) A Bank Guarantee from Rajkot Branch of any Nationalized Bank or Scheduled Bank except co-operative bank.

The performance guarantee shall be delivered to the Corporation within ten (10) days of the notice of award and at least three (3) days before the contract agreement is signed unless otherwise specified by the Engineer-in-charge. Alternatively, the contractor may at his option deposit an amount of **2.5%** of the value of the contract price within ten days and the balance **2.5%** to be recovered in installments through deduction @ the rate of 10% from the running account bills. It is further clarified that Performance Guarantee (SD) for extra work will also be recovered @ 10% from the bill of extra work i.e. works beyond tender amount.

On due performance and completion of the contract in all respects, **THE PERFORMANCE GUARANTEE (SECURITY DEPOSIT) WILL BE RELEASED TO THE CONTRACTOR WITHOUT ANY INTEREST AFTER DEFECT LIABILITY PERIOD IS OVER.**

GC-11 **INSPECTION OF WORK :**

1. The Engineer-In-Charge shall have full power and authority to inspect the work at any time wherever in progress either on the site or at the Contractor's or any other manufacturer's workshop or factories wherever situated and the Contractor shall afford to Engineer-In-Charge every facility and assistance to carry out such inspection, Contractor or his authorized representative shall, at all time during the usual working hours and all times when so notified, remain present to receive orders and instructions.

   Orders given to Contractor's representative shall be considered to have the same force as if they had been given to the Contractor himself. Contractor shall give not less than ten (10) days notice in writing to the Engineer-In-Charge before covering up or otherwise placing beyond reach of inspection and measurement any work in order that the same may be inspected and measured. In the event of breach of the above, the same shall be uncovered at Contractor's expenses for carrying out such inspection or measurement.

2. The material shall be dispatched from Contractor's store on site of work before obtaining approval in writing of the Engineer-In-Charge. Contractor shall provide at all times during the progress of work and maintenance period of proper means of access with ladders, gangways, etc. and make necessary arrangement as directed for inspection or measurement of work by Engineer-In-Charge.

GC-12 **DEFECT LIABILITY :**

1. Contractor shall guarantee the work for a period of 48 months. Any damage or defect that may arise or that may remain undiscovered at the time of issue of Completion Certificate connected in any way with the equipment or materials supplied by him or in the workmanship shall be rectified or replaced by Contractor at his own expense as desired by Engineer-In-Charge or in default Engineer-In-Charge may cause the same to be made good by other agency and deduct expenses of which the

certificate of Engineer-In-Charge shall be final from any sums that may then or any time thereafter become due to Contractor or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof.

2. From the commencement to completion of work Contractor shall take full responsibility for the care of the work including all temporary works and in case any damages, occur from any cause whatsoever he shall at his own cost, repair and make good the same so that on completion, work shall be in good order and in conformity, in every respect, with the requirements of contract and as per the instructions of the Engineer-In-Charge.

3. If at any time before the work is taken over, the Engineer-In-Charge -
   a) Decide that any work done or materials used by the Contractor are defective or not in accordance with the contract or that work or any portion thereof is defective or do not fulfill the requirements of contract (all such materials being herein after called defects in this clause) he shall, as soon as reasonably practicably, give notice to Contractor in writing of the said defect specifying particulars of the same then Contractor shall at his own expense and with all speed make good the defects so specified.

   b) In case Contractor fails to do so, owner may take, at the cost of the Contractor, such stops as may in all circumstances be responsible to make good such defects. The expenditure so incurred by owner will be recovered from the amount due to Contractor. The decision of Engineer-In-Charge with regard to the amount to be recovered from Contractor will be final and binding on the Contractor.

GC-13 **POWER OF ENGINEER-IN-CHARGE TO GIVE FURTHER INSTRUCTIONS:**

The Engineer-In-Charge shall have the power and authority from time to time and at all times to give further instructions and directions as may appear to him necessary or proper for the guidance of the Contractor and the works and efficient execution of the works according to the terms of the specifications, and the Contractor shall receive, execute, obey and be bound by the same, according to the true intent and meaning thereof, as fully and effectively as though the same had accompanied or had been mentioned or referred to in the specifications. No work which radically changes the original nature of the contract shall be ordered by the Engineer-In-Charge and in the event of any deviation being ordered, which in the opinion of the Contractor changes the original nature of the contract, he shall nevertheless carry it out and any disagreement as to the nature of the work and the rate to be paid to thereof shall be resolved.

The time of completion of works shall, in the event of any deviations being ordered resulting in additional cost or reduction in cost over the contract sum, be extended or reduced reasonably by the Engineer-In-Charge. The Engineer-In-Charge's decision in the case shall be final and binding.

GC-14 **PROGRAMME:**

The time allowed for execution of works shall be the essence of the contract. The contract period shall commence from the date of notice of intimation to proceed. The Bidder at the time of submitting his e-Tender shall indicate in the construction schedule his programme of execution of work commencement with the total time specified. The Contractor shall provide the Engineer-In-Charge a detailed programme of time schedule for execution of the works in accordance with the specifications and the

completion date. The entire programme to be finalized by the Contractor, has to conform to the execution period mentioned along with the Bill of Quantities in the e-Tender documents. The Engineer-In-Charge upon scrutiny of such submitted programme by Contractor, shall examine suitability of it to the requirement of contract and suggest modifications, if found necessary.

GC-15 **SUB-LETTING OF WORK :**

No part of the contract nor any share of interest thereon shall in any manner or degree be transferred, assigned or sublet by the Contractor directly or indirectly to any person, firm or Corporation whosoever except as provided for in the succeeding sub-clause, without the consent in writing of the owner.

GC-16 **SUB-CONTRACTS FOR TEMPORARY WORKS ETC. :**

The owner may give written consent to sub-contractors for execution of any part of the works at the site, being entered upon the contractor provided each individual contract is submitted to the Engineer-In-Charge before being entered into and is approved by him. List of sub-contractors to be supplied.

Not-withstanding any subletting with such approval as aforesaid and notwithstanding the Engineer-In-Charge shall have received of any sub-contractors, the Contractor shall be and shall remain solely responsible for the quality and proper and expeditious execution of the works and the performance of all the conditions of contract in all respects as if such subletting or subcontracting had not taken place and as if such works had been done directly by the Contractor.

GC-17 **TIME FOR COMPLETION :**

1. The work covered under this contract shall be commenced from the date the Contractor is served with a notice to proceed with the work and shall be completed before the date as mentioned in the time schedule of work. The time is the essence of the contract and unless the same is extended as mentioned in Clause GC-18 "Extension of Time", the Contractor shall pay liquidated damages for the delay.
2. The general time schedule for construction is given in the e-Tender document. Contractor shall prepare a detailed weekly or monthly construction programme in consultation with the Engineer-In-Charge soon after the agreement and the work shall be strictly executed accordingly.
   The time for construction includes, the time required for testing, rectifications, if any, retesting and completion of the work in all respects to the entire satisfaction of the Engineer-In-Charge except the items which are not coming in the way to commission the project.
3. Monsoon period from 1st July to 30th September shall be considered as non-working period hence excluded in time limit.

GC-18 **EXTENSION OF TIME :**

Time shall be considered as the essence of the contract. If, however, the failure of the Contractor to complete the work as per the stipulated dates referred to above arises from delays on the part of Corporation in supplying the materials or equipment, it has undertaken to supply under the contract or from delays on the quantity of work to be done under the contract, or force majeure an appropriate extension of time will be given by the Corporation. The Contractor shall request for such extension within one month of the cause of such delay and in any case before expiry of the contract period.

GC-19 **CONTRACT AGREEMENT :**

The successful Bidder shall enter into and execute the contract agreement within 10 (ten) days of the notice of award, in the form shown in e-Tender documents with such modifications as may be necessary in the opinion of the Corporation. It shall be incumbent on the Contractor to pay the stamp duty and the legal charges for the preparation of the contract agreement.

GC-20 **LIQUIDATED DAMAGES :**

If the Contractor fails to complete the work or designated part thereof within the stipulated completion date for the work or for the part, he shall pay liquidated damages at 0.1 (zero point one) percent of contract value for per day of delay subject to maximum of 10% of the contract value or as decided by Municipal Commissioner.

The Contractor shall complete one-sixth quantum of work within one fourth period, four-tenth quantum of work within one-half period and eight-tenth quantum of work within three-fourth period, failing which, the Contractor shall be liable to pay liquidated damages an amount as specified above, or as decided by Municipal Commissioner.

The amount of liquidated damages shall, however, be subjected to a maximum of 10 percent of the contract value.

GC-21 **FORFEITURE OF SECUEITY DEPOSIT :**

Whenever any claim against the Contractor for the payment of a sum of money out of or under the contract arises, the Corporation shall be entitled to recover such sum by appropriating in part or whole, the security deposit of the Contractor. In case the security deposit is insufficient, the balance recoverable shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor. The Contractor shall pay to the owner on demand any balance remaining due.

GC-22 **ACTION OF FORFEITURE OF SECURITY DEPOSIT :**

In any case in which under any Clause or Clauses of the contract, the Contractor shall committed a breach of any of the terms contained in this contract, the owner shall have power to adopt any of the following courses as he may deem best suited to his interest.

a) To rescind the contract (of which recession notice in writing to the contractor under the hand of the owner shall be conclusive evidence) in which case the security deposit of the Contractor shall stand forfeited and be absolutely at the disposal of the owner.

b) To employ labour and to supply materials to carry out the balance work debiting Contractor with the cost of labour employed and the cost of materials supplied for which a certificate of the Engineer-In-Charge shall be final and conclusive against the Contractor and 10% of costs on above to cover all departmental charges and crediting him with the value of work done at the same rates as if it has been carried out by the Contractor under the terms of his contract. The certificate of Engineer-In-Charge as to the value of the work done shall be final and conclusive against the Contractor.

c) To measure up the work of the contractor and to take such part thereof as shall be unexecuted out of his hand and give it to another Contractor to complete, the same. in this case the excess expenditure incurred than what would have been paid to the original Contractor, if the whole work had been executed by him, shall be borne and paid by the original Contractor and shall be deducted from any money due to him by the owner under the contract or otherwise and for the excess expenditure, the certificate of the Engineer-In-Charge shall be final and conclusive.

In the event any of the above courses being adopted by the owner, the Contractor shall have no claims for compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any agreements or made any advance on account of or with a view to the execution of the work or the performance of the contract.

In purchase the Contractor shall not be entitled to recover or be paid any sum for any work actually performed under this contract unless the Engineer-In-Charge will certify in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

In the event of the owner putting in force the powers as stated in a, b, c, above vested in him under the proceeding clause, he may, if he so desires, take possession of all or any tools and plant, materials and stores in or upon the works or the site thereof belonging to the Contractor, or procured by him and intended to be used for the execution of the work or any part thereof paying or allowing for the same in account at the contract rates to be certified by the Engineer-In-Charge. The Engineer-In-Charge may give notice in writing to the Contractor or his representative requiring him to remove such tools, plant, materials or stores from the premises within the time specified in the notice and in the event of the Contractor failing to comply with any such notice, the Engineer-In-Charge may remove them at the Contractor's expenses or sell them by auction or private sale on account of the Contractor and his risks in all respects without any further notice as to the date, time or place of the sale and the certificate of Engineer-In-Charge as to the expense of any such removal and the amount of the proceeds and the expenses of any such sale shall be final and conclusive against the Contractor.

GC-23 **COMPENSATION FOR ALTERATION IN OR RESTRICTION IN WORK :**
If at any time from the commencement of the work, the owner shall for any reasons whatsoever not require the whole work or part thereof as specified in the e-Tender to be carried out, the Engineer-In-Charge shall give notice in writing of the fact to the Contractor, who shall have no claim to any payment or compensation whatsoever on account of any profit or advantage which he might have derived from the execution of the work in full but which he did not derive in consequence of full amount of the work not having been carried out. He also shall not have any claim for compensation by reasons of any alterations having been made in original specifications, drawings, designs and instructions which shall involve any curtailment of the work as originally contemplated.

When the Contractor is a partnership firm, the prior approval in writing of the owner shall be obtained before any change is made in the Constitution of the firm. Where the Contractor is an individual or a Hindu Undivided Family or business concern, such approval as aforesaid shall, likewise be obtained before Contractor enters into an agreement with other parties

where under, the reconstituted firm would have the right to carry out the work hereby undertaken by the Contractor. In either case, if prior approval as aforesaid is not obtained, the contract shall be deemed to have been allotted contravention of subletting clause hereof and the same action may be taken and the same consequence shall ensure as provided in the subletting clause.

GC-24 **IN THE EVENT OF DEATH OF THE CONTRACTOR :**
Without prejudice to any of the rights or remedies under the contract, if the Contractor dies, the owner shall have the option of terminating the contract without compensation to the Contractor.

GC-25 **MEMBERS OF THE OWNER NOT INDIVIDUALLY LIABLE :**
No official or employee of the owner shall in any way be personally bound or liable for the acts or obligation of the owner under the contract, or answerable for any default or omission in the observance or performance of any acts, matters or things, which are herein, contained.

GC-26 **OWNER NOT BOUND BY PERSONAL REPRESENTATIONS :**
The Contractor shall not be entitled to any increase on the schedule of rates or any other rights or claims whatsoever by reason of representation, promise or guarantees given or alleged to have been given to him by any person.

GC-27 **CONTRACTOR'S OFFICE AT SITE :**
The Contractor shall provide and maintain an office at the site for the accommodation of his agent and staff and such office shall remain open at all reasonable hours to receive information, notices or other communications.

GC-28 **CONTRACTOR'S SUBORDINATE STAFF AND THEIR CONDUCT :**

1. The Contractor on award of the work shall name and depute a qualified Engineer having experience of carrying out work of similar nature, whom equipments, materials, if any, shall be issued and instructions for work given. the Contractor shall also provide to the satisfaction of Engineer-In-Charge sufficient and qualified staff, competent sub-agents, foreman and loading hands including those specially qualified by previous experience to supervise the type of works comprised in the contract in such manner as will ensure work of the best quality and expeditious working. If, in the opinion of the Engineer-In-Charge additional properly qualified supervision staff is considered necessary, it shall be employed by the Contractor, without additional charge on account thereof. The Contractor shall ensure to the satisfaction of the Engineer-In-Charge that sub-contractors, if any, shall provide competent and efficient supervision over the work entrusted to them.

2. If and whenever any of the Contractor's or sub-contractor's agents, sub-agents, assistants, foreman or other employees shall, in the opinion of the Engineer-In-Charge, be guilty of any misconduct or be incompetent or insufficiently qualified or negligent in the performance of their duties or that in the opinion of the owner or Engineer-In-Charge, it is undesirable for administrative or any other reason for person or persons to be employed in the works, the Contractor if so directed by the Engineer-In-Charge, shall at once remove such person or persons from employment thereon. Any person or persons so removed shall not again be re-employed in connection with the works without the written permission of the Engineer-In-Charge. Any person, so removed from the works shall be

immediately replaced at the expense of the Contractor by a qualified and competent substitute. Should the Contractor be required to repatriate any person removed from the works he shall do so after approval of Engineer-In-Charge and shall bear all costs in connection therewith.

3. The Contractor shall be responsible for the proper behavior of all the staff, foreman, workmen and others and shall exercise proper control over them and in particular and without prejudice to the said generality, the Contractor shall be bound to prohibit and prevent any employee from trespassing or acting in any way detrimental or prejudicial to the interest of the community or of the properties or occupiers of land and properties in the neighborhood and in the event of such employees so trespassing, the Contractor shall be responsible therefore and relieve the owner of all consequent claims, actions for damages or injury or any other ground whatsoever. The decision of the Engineer-In-Charge upon any matter arising under this claim shall be final.

4. If and when required by the owner, the Contractor's personnel entering upon the owner's premises shall be properly identified by badges of a type acceptable to the owner which must be worn at all times on owner's premises.

GC-29 **TERMINATION OF SUB-CONTRACT BY OWNER :**

If any sub-contractor engaged upon the works at the site execute any work which in the opinion of Engineer-In-Charge is not accordance with the contract documents, the owner may by written notice to the Contractor request him to terminate such sub-contract and the Contractor upon the receipt of such notice shall terminate such sub-contracts and the latter shall forthwith leave the works, failing which, the owner shall have the right to remove such sub-contractors from the site.

No action taken by the owner under the above clause shall relieve the Contractor of his liabilities under the contract or give rise to any right to compensation, extension of time or otherwise.

GC-30 **POWER OF ENTRY :**

If the Contractor shall not commence the work in the manner previously described in the contract documents or if he shall at any time, in the opinion of Engineer-In-Charge –

i) Fail to carry out works in conformity with the contract documents, or
ii) Fail to carry out the works in accordance with the time schedule, or
iii) Substantially suspend work or the works for a period of seven days without authority from Engineer-In-Charge, or
iv) Fail to carry out and execute the work to the satisfaction of the Engineer-In-Charge, or
v) Fail to supply sufficient or suitable construction plant, temporary works, labour, materials or things, or
vi) Commit breach of any other provisions of the contract on his part to be performed or observed or persists in any of the above mentioned breaches of the contract for seven days after notice in writing shall have been given to the Contractor by the Engineer-In-Charge requiring such breach to be remedied, or
vii) Abandon the work, or
viii) During the continuance of the contract becomes bankrupt, make any arrangement or compromise with his creditors, or permit any execution to be levied or go into liquidation whether compulsory or

voluntary not being merely a voluntary liquidation for the purpose of amalgamation or reconstruction then in any such case.

The owner shall have the power to enter upon the works and take possession thereof and of the materials, temporary works, constructional plant and stores therein and to revoke the Contractor's license to use the same and to complete the works by his agents, other Contractor or workmen, to relate the same upon any terms to such other person firm or Corporation as the owner in his absolute discretion may think proper to employ, and for the purpose aforesaid to use or authorize the use of any materials, temporary works, constructional plant, and stores as aforesaid with making payments or allowance to the Contractor for the said materials other than such as may be certified in writing by the Engineer-In-Charge to be reasonable and without making any payment or allowance to the Contractor for the use of said temporary works, constructional plant and stock or being liable for loss or damage thereto. If the owner shall be reason of his taking possession of the works or of the work being got completed by other Contractor incurred excess expenditure be deducted from any money which may be due for the work done by the Contractor under the contract and not paid for. Any deficiency shall forthwith be made good and paid to the owner by the Contractor and the owner shall have power to sell in such manner and for such price as he may think fit all or any of the constructional plant, materials etc., consist constructed by or belonging to and to recoup and retain the said deficiency or any part thereof out of the proceeds of the sale.

GC-31 **CONTRACTOR'S RESPONSIBILITY WITH THE OTHER CONTRACTOR AND AGENCIES :**

Without repugnance to any other conditions, it shall be the responsibility of the Contractor executing the work, to work in close co-operation and co-ordination with other Contractors or their authorized representatives and the Contractor will put a joint scheme with the concurrence of other contractors or their authorized representatives showing the arrangements for carrying his portion of the work to the Engineer-In-Charge and get the approval. The Engineer-In-Charge before approving the joint scheme will call the parties concerned and modify the scheme if required. No claim will be entertained on account of the above. The Contractor shall conform in all respects with the provisions of any statutory regulations, ordinances or bylaws of any local or duly constituted authorities or public bodies which may be applicable from time to time to works or any temporary works. The Contractor s shall keep the owner indemnified against all penalties and liabilities of every kind arising out of non-adherence to such statutes, ordinance, laws, rules, regulations etc.

GC-32 **OTHER AGENCIES AT SITE :**

The Contractor shall have to execute the work in such place and condition where other agencies will also be engaged for other works, such as site grading, filling and leveling, electrical and mechanical engineering works etc. No claim shall be entertained for works being executed in the above circumstances.

GC-33 **NOTICES :**

Any notice under this contract may be served on the Contractor or his duly authorized representative at the job site or may be served by Registered Post direct to the official address of the Contractor. Proof of issue of any such notice could be conclusive of the Contractor having been duly informed of all contents therein.

GC-34 **RIGHTS OF VARIOUS INTERESTS :**

The owner reserves the right to distribute the work between more than one Contractor. Contractor shall co-operate and afford reasonable opportunity to other Contractor s for access to the works, for the carriage and storage of materials and execution of their works. Whenever the work being done by department of the owner or by other Contractor employed by the owner is contingent upon work covered by this contract, the respective rights of the various interests shall be determined by the Engineer-In-Charge to secure the completion of various portions of the work in general harmony.

GC-35 **PRICE ADJUSTMENTS :**

No adjustment in price shall be allowed and no price escalation will be allowed.

GC-36 **TERMS OF PAYMENT :**

The payment of bills shall be made progressively according to the rules and practices followed by the Corporation. The progressive payment unless otherwise provided in the contract agreement or subsequently agreed to by the parties shall be made generally monthly on submission of a bill by the Contractor in prescribed form of an amount according to the value of the work performed less the price of materials supplied by owner aggregate of previous progressive payments and as required by Clause GC-37 (Retention of Money) herein. All such progressive payments shall be regarded as payments by way of advance against final payment. Payment for the work done by the Contractor will be based on the measurement at various stages of the work, in accordance with the condition at clause GC-81 (measurement of work in progress).

GC-37 **RETENTION MONEY :**

Pursuance to clause GC-36 (Terms of Payment) any on at money due to the Contractor for work done, Corporation will hold as Retention money five (5) percent of the value of work. The retention money will not normally be due for payment until the completion of the entire work and till such period the work has been finally accepted by the Corporation and a completion certificate issued by the Corporation in pursuant to Clause-GC 79 (Completion Certificate).

GC-38 **PAYMENTS DUE FROM THE CONTRACTOR :**

All costs, damages or expenses, for which under the contract, Contractor is liable to the Corporation, may be deducted by the Corporation from any money due or becoming due to the Contractor under the contract or from any other contract with the Corporation or may be recovered by action at law or otherwise from the Contractor.

GC-39 **CONTINGENT FEE :**

i) The Contractor warrants that he has not employed a person to solicit or secure the contract upon any agreement for a commission, percentage, and brokerage contingent fee. Breach of this warranty shall give the Corporation the right to cancel the contract or to take any drastic measure as the Corporation may deem fit. The warranty does not apply to commissions payable by the Contractor to establish commercial or selling agent for the purpose of securing business.

ii) No officer, employer or agent of the Corporation shall be admitted to any share or part of this contract or to any benefit that may rise there from.

GC-40 **BREACH OF CONTRACT BY CONTRACTOR :**

If the Contractor fails to perform the work under the contract with due diligence or shall refuse or neglect to comply with instructions given to him in writing by the Engineer-In-Charge in accordance with the contract, or shall contravene the provisions of the contract, the Corporation may give notice in writing to the Contractor to make good such failure, neglect, or contravention. Should the Contractor fail to comply with such written notice within 10 (Ten) days of receipt, it shall be lawful for the Corporation, without prejudice to any other rights the Corporation may have under the contract, to terminate the contract for all or part of the works, and make any other arrangements it shall deem necessary to complete the work outstanding under the contract at the time of termination. In this event, the performance Bond shall immediately become due and payable to the Corporation. The value of the work done on the date of termination and not paid for shall be kept as deposit for adjustment of excess expenditure incurred in getting the remaining work completed and the Corporation shall have free use of any works which the Contractor may have at the site at the time of termination of the contract.

If Contractor fails to carry out the work in timely manner as mentioned in clause 20 (Liquidated damages), Rajkot Municipal Corporation may give notice in writing to the Contractor to expedite the work, so that the work can be completed as per time schedule. If Contractor fails to expedite the work within 10 days of receipt of notice, Rajkot Municipal Corporation may terminate the contract and debar the Contractor for three years and the remaining work will be executed through other agency at the risk and cost of the Contractor.

GC-41 **DEFAULT OF CONTRACTOR :**

i) The Corporation may upon written notice of default to the Contractor terminate the contract circumstances detailed as under:

   a) If in the opinion of the Corporation, the Contractor fails to make completion of works within the time specified in the completion schedule or within the period for which extension has been granted by the Corporation to the Contractor.

   b) If in the opinion of the Corporation, the Contractor fails to comply with any of the other provisions of this contract.

ii) In the event, the Corporation terminates the contract in whole or in part as provided in Article GC-50 (Termination of the Contract) the Corporation reserves the right to purchase upon such terms and in such manner as it may be deem appropriate, plant similar to one which is not supplied by the Contractor and the Contractor will be liable to the Corporation for any additional costs for such similar plant and / or for liquidated damages for delay until such time as may be required for the final completion of works.

iii) If this contract is terminated as provided in this paragraph GC-40 AND/OR GC-30 (Power of Entry) (1) the Corporation in addition to any other rights provided in this clause, may require the Contractor to transfer title and deliver to the Corporation.

   a) Any completed works

b) Such partially completed information and contract rights as the Contractor has specifically produced or acquired for the performance of the contract so terminated.

iv) In the event, the Corporation does not terminate the contract as provided in the paragraph GC-50 (Termination of Contract) the Contractor shall continue performance of the contract, in which case, he shall be liable to the Corporation for liquidated damages for delay until the works are completed and accepted.

GC-42 **BANKRUPTCY :**

If the Contractor shall become bankrupt or insolvent or has a receiving order made against him, or compound with his creditors, or being the Corporation commence to be wound up not being a member voluntary winding up for the purpose of amalgamation or reconstruction, or carry on its business under a receiver for the benefit of his creditors or any of them, the Corporation shall be at liberty to either (a) terminate the contract forthwith by giving notice in writing to the Contractor or to the receiver or liquidator or to any person or Organization in whom the contract may become vested and to act in the manner provided in Article GC-41 (Default of Contractor) as thought the last mentioned notice had been the notice referred to in such article or (b) to give such receiver, liquidator or other persons in whom the contract may become vested the option of carrying out the contract subject to his providing a satisfactory guarantee for the due and faithful, performance of the contract up to an amount to be agreed. In the event that the Corporation terminates the contract in accordance with this article, the performance bond shall immediately become due and payable on demand to Corporation.

GC-43 **OWNERSHIP :**

Works hand over pursuant to the contract shall become the property of the Corporation from whichever is the earlier of the following times, namely;

a) When the works are completed pursuant to the contract.
b) When the contractor has been paid any sum to which he may become entitled in respect thereof pursuant to Clause GC-36 (Terms of Payment).

GC-44 **DECLARATION AGAINST WAIVER :**

The condemnation by the Corporation of any breach or breaches by the Contractor or an authorized sub-contractor of any of the stipulations and conditions contained in the contract, shall in no way prejudice or affect or be construed as a waiver of the Corporation's rights, powers and remedies under the contract in respect of any breach or breaches.

GC-45 **LAWS GOVERNING THE CONTRACT :**

This contract shall be construed according to and subject to the laws of India and the State of Gujarat and under the jurisdiction of the Courts of Gujarat at Rajkot.

GC-46 **OVER PAYMENT AND UNDER PAYMENT :**

Whenever any claim for the payment of a sum to the Corporation arises out of or under this contract against the Contractor, the same may be deducted by the Corporation from any sum then due or which at any time thereafter may become due to the Contractor under this contract and failing that under any other contract with the Corporation (which may be available with the Corporation), or from his retention money or he shall

pay the claim on demand. The Corporation reserves the right to carry out post payment audit and technical examinations of the final bill including all supporting vouchers, abstracts etc. The Corporation further reserves the right to enforce recovery of any payment when detected, not withstanding the fact that the amount of the final bill may be included by one of the parties as an item of dispute before an Arbitrator, appointed under Article GC-49 (Arbitration) of this contract and notwithstanding the fact that the amount of the final bill figures in the arbitration award. If as a result of such audit and technical examinations any over payment is discovered in respect of any work done by the Contractor or alleged to have been done by him under the contract, it shall be recovered by the Corporation from the Contractor as prescribed above. If any under payment is discovered by the Corporation, the amount due to the Contractor under this contract, may be adjusted against any amount then due or which may at any time thereafter become due before payment is made to the Contractor.

GC-47 **SETTLEMENT OF DISPUTES :**

Except as otherwise specifically provided in the contract, all disputes concerning questions of fact arising under the contract shall be decided by the Engineer-In-Charge subject to a written appeal by the Contractor to the Engineer-In-Charge and those decisions shall be final and binding on the parties hereto. Any disputes or differences including those considered as such by only one of the parties arising out of or in connection with this contract shall be to the extent possible settled amicably between the parties. If amicable settlement cannot be reached then all disputed issues shall be settled as provided in Article GC-48 (Disputes or differences to be referred to) and Article No.GC-49 (Arbitration).

GC-48 **DISPUTES OF DIFFERENCES TO BE REFERRED TO :**

If at any time, any question, disputes or differences of any kind whatsoever shall arise between the Engineer-In-Charge and the contractor upon or in relation to or in connection with this contract either party may forthwith give to the other, notice in writing of the existence of such question, dispute or difference as to any decision, opinion, instruction, direction, certificate or evaluation of the Engineer-In-Charge. The question, dispute or differences shall be settled by the Municipal Commissioner, Rajkot Municipal Corporation, who shall state his decision in writing and give notice of same to the Engineer-In-Charge and to the Contractor. Such decision shall be final and binding upon both parties. The contract and work on contract if not already breached or abandoned shall proceed normally unless and until the same shall be revised (or uphold) by any arbitration proceedings as hereinafter provided. Such decisions shall be final and binding on the Engineer-In-Charge and the Contractor unless the Contractor shall require the matter to be referred to an Arbitration panel as hereinafter provided.

GC-49 **ARBITRATION :**

In case of any dispute arising during the course of execution, the matter should be referred to Municipal Commissioner who will be sole Arbitrator whose decisions will be final and binding to the Contractor.

The word "Arbitration" or "Arbitration Clause" wherever mentioned in this tender document, is to be treated to be referred to GC-49. In this context, an Order bearing No.RMC/Legal/1858 dated 18-02-2017 of Legal Department of Rajkot Municipal Corporation is uploaded separately along with this tender, which Order, will hereafter referred and taken into consideration for Arbitration related purpose.

GC-50 **TERMINATION OF THE CONTRACT :**

i) If the Contractor finds it impracticable to continue operation owing to force majeure reasons or for any reasons beyond his control and/or the Corporation find it impossible to continue operation, then prompt notification in writing shall be given by the party affected to the other.

ii) If the delay or difficulties so caused cannot be expected to cease or become unavoidable or if operations cannot be resumed within two (2) months then either party shall have the right to terminate the contract upon ten (10) days written notice to the other. In the event of such termination of the contract, payment to the Contractor will be made as follows:

a) The Contractor shall be paid for all works approved by the Engineer-In-Charge and for any other legitimate expenses due to him.

b) If the Corporation terminates the contract owing to Force Majeure or due to any cause beyond its control, the Contractor shall additionally be paid for any work done during the said two (2) months period including any financial commitment made for the proper performance of the contract and which are not reasonably defrayed by payments under (a) above.

c) The Corporation shall also release all bonds and guarantees at its disposal except in cases where the total amount of payment made to the Contractor exceeds the final amount due to him in which case the Contractor shall refund the excess amount within thirty (30) days after the termination and the Corporation thereafter shall release all bonds and guarantees. Should the Contractor fail to refund the amounts received in excess within the said period such amounts shall be deducted from the bonds or guarantees provided.

iii) On termination of the contract for any cause the Contractor shall see the orderly suspension and termination of operations, with due consideration to the interests of the Corporation with respect to completion safeguarding of storing materials procured for the performance of the contract and the salvage and resale thereof.

GC-51 **SPECIAL RISKS :**

If during the contract, there shall be an outbreak of war (whether war is declared or not), major epidemic, earthquake or similar occurrence in any part of the world beyond the control of either party to the contract which financially or otherwise materially affects the execution of the contract, the Contractor shall unless and until, the contract is terminated under the provisions of this article use his best endeavors to complete the execution of the contract, provided always that the Corporation shall be entitled at any item after the onset of such special risks, to terminate the contract by giving written notice to the contractor and upon such notice being given this contract shall terminate but without prejudice to the rights of either party in respect of any antecedent breach thereof.

The Contractor shall not be liable for payment of compensation for delay or for failure to perform the contract for reasons of Force Majeure such as acts of public enemy, acts of Government, fires, floods, cyclones, epidemics, quarantine restrictions, lockouts, strikes, freight embargoes and provided that the Contractor shall within 10 (ten) days from the

beginning of such delay notify the Engineer-In-Charge in writing, of the cause of delay, the Corporation shall verify the facts and grant such extension as the facts justify.

GC-52 **CHANGE IN CONSTITUTION :**

Where the Contractor is a partnership firm, the prior approval in writing of the owner shall be obtained before any change is made in the constitution of the firm. Where the Contractor is an individual or undivided family business concern such approval as aforesaid shall likewise be obtained before the Contractor enters into any partnership agreement where under the partnership firm would have the right to carry out the works hereby undertaken by the Contractor. If prior approval as aforesaid is not obtained, the contract shall be deemed to have been assigned in contravention of contract.

GC-53 **SUB-CONTRACTUAL RELATIONS :**

All works performed for the contract by a sub-contractor shall be pursuant to an appropriate agreement between the Contractor and the sub-contractor, which shall contain provision to –

a) Protect and preserve the rights of the Corporation and the Engineer-In-Charge with respect to the works to be performed under the sub-contracting party will not prejudice such rights.
b) Require that such work be performed in accordance with the requirements of contract documents.
c) Require under such contract to which the contractor is a party, the submission to the Contractor of application for payment and claims for additional costs, extension of time, damages for delay or otherwise with respect to the sub-contracted portions of the work in sufficient time, that the Contractor may apply for payment comply in accordance with the contract documents for like claims by the Contractor upon the Corporation.
d) Waive all rights the contracting parties may have against one another for damages caused by fire or other perils covered by the property insurance except such rights as they may have to the proceeds of such insurance held by the Corporation as trustee and,
e) Obligate each sub-contractor specifically to consent to the provisions of this Article.

GC-54 **PATENTS AND ROYALTIES :**

1. Contractor, if licensed under any patent covering equipment, machinery, materials or composition of matter to be used or supplied or methods and process to be practiced or employed in the performance of this contract agrees to pay all royalties and license fees, which may be due with respect thereto. If any equipment, machinery, materials, composition matters, to be used or supplied or methods practiced or employed in the performance of this contract, is covered by a patent under which Contractor is not licensed, then the Contractor before supplying / using the equipment, machinery, materials, compositions, methods of process shall obtain such license and pay such royalties and license fees as may be necessary for performance of this contract. In the event Contractor fails to pay such royalty or to obtain any such license, any suit for infringement of such patents which is brought against the Contractor or the owner as a result of such failure will be defended by the Contractor at his own expenses and the Contractor will pay any damages and costs awarded in such suit. The Contractor shall promptly notify the owner if the Contractor has acquired knowledge of any plant under which a suit for infringement could be reasonably brought because of the use by the owner of any equipment

machinery, materials, process methods to be supplied in hereunder. Contractor agrees to and does hereby grant to owner together with the right to extend the same to any of the subsidiaries of the owner an irrevocable royalty fee license to use in any Country, any invention made by the Contractor or his employees in or as a result of the performance of work under contract.

2. With respect to any sub-contract entered into by Contractor pursuant to the provisions of the relevant clause hereof, the Contractor shall obtain from the sub-contractor an understanding to provide the owner with the same patent protection that contracts is required to provide under the provisions of the clause.

3. The Contractor shall indemnify and save harmless the owner from any loss on account of claims against owner for the contributory infringement of patent rights arising out of and based upon the claim that the use by the Corporation of the process included in the design prepared by the Contractor and used in the operation of the plant infringes on any patent rights.

GC-55 **LIEN :**

If, at any time, there should be evidence of any lien or claim for which owner might have become liable and which is chargeable to the Contractor, the owner shall have the right to retain out of any payment then due or thereafter to become due an amount sufficient to completely indemnify the owner against such lien or claim or if such lien or claim be valid the owner may pay and discharge the same and deduct the amount as paid from any money which may be due or become due and payable to the Contractor. If any lien or claims remaining unsettled after all payments are made, the Contractor shall refund or pay to the owner all money that the latter may be compelled to pay in discharging such lien or claim including all costs and reasonable expenses.

GC-56 **EXECUTION OF WORK :**

The whole work shall be carried out in strict conformity with the provisions of the contract document, detailed drawings, specifications and the instructions of the Engineer-In-Charge from time to time. The Contractor shall ensure that the whole work is executed in the most substantial, and proper manner with best workmanship using materials of best quality in strict accordance with the specifications to the entire satisfaction of the Engineer-In-Charge.

GC-57 **WORK IN MONSOON :**

When the work continues in monsoon if required, the Contractor shall maintain minimum labour force required for the work and plan and execute the construction and erection work according to the prescribed schedule. No extra rate will be considered for such work in monsoon. During monsoon and entire construction period, the Contractor shall keep the site free from water at his own cost. However, monsoon period from 1st July to 30th September will be excluded in time limit.

GC-58 **WORK ON SUNDAYS AND HOLIDAYS :**

No work except curing shall be carried out on Sunday and holidays. However, if the exigencies of the work need continuation of work on Sundays and Holidays, written permission of the Engineer-In-Charge shall be obtained in advance.

GC-59 **GENERAL CONDITIONS FOR CONSTRUCTION WORK :**

Working hours shall be eight every day. The over time work in two shifts could be carried out with the written permission of the Engineer-In-Charge but no compensation shall be paid for the same. The rate quoted shall include this. The Contractor shall plan his work in such a way that his labourers do not remain idle. The owner will not be responsible for idle labour of the Contractor. The Contractor shall submit to the owner progress report every week. The details and proforma of the report will be as per mutual agreement.

GC-60 **DRAWINGS TO BE SUPPLIED BY THE OWNER : (N.A.)**

The drawings attached with the e-Tender documents shall be for general guidance of the Contractor to enable him to visualize the type of work contemplated and scope of work involved. Detail working drawings according to which the work is to be done shall be prepared by the Contractor for executing the work.

GC-61 **DRAWINGS TO BE SUPPLIED BY THE CONTRACTOR:**

Where drawings, data are to be furnished by the Contractor they shall be as enumerated in special conditions of contract and shall be furnished within the specified time. Where approval of drawings has been specified it shall be Contractor's responsibility to have these drawings got approved before any work is taken up with regard to the same. Any changes becoming necessary in those drawings during the execution of the work shall have to be carried out by the Contractor at no extra cost. All final drawings shall bear the certification stamp as indicated below duly signed by both the Contractor and Engineer-In-Charge.

Certified true for…….Project Agreement No……..

Signed …….

Contractor **Engineer-In-Charge**

Drawings will be approved within three (3 weeks of the receipt of the same by the Engineer-In-Charge.

GC-62 **SETTING OUT WORK :**

The Contractor shall set out the work on the site handed over by the Engineer-In-Charge and shall be responsible for the correctness of the same. The work shall be carried out to the entire satisfaction of Engineer-In-Charge. The approval thereof or partaking by Engineer-In-Charge or setting out work shall not relieve Contractor of any of his responsibilities. The Contractor shall provide at his own cost all necessary level posts, pegs, bamboos, flags, ranging rods, strings and other materials and labourers required for proper setting out of the work. The Contractor shall provide fix and be responsible for the maintenance of all stakes, templates, level markets, profiles and similar other things and shall take all necessary precautions to prevent their removal or disturbance and shall be responsible for the consequences for such removal or disturbance. The Contractor shall also be responsible for the maintenance of all existing survey marks, boundary marks, and distance marks and centerline marks either existing or face lines and cross lines shall be marked by small masonry pillars. Each pillar shall have distance mark at the center for setting up the theodolite. The work shall not be started unless the setting out is choked and approved by Engineer-In-Charge in writing but such

approval shall not relieve the Contractor of his responsibilities about the correctness of setting out. The Contractor shall provide all materials, labour and other facilities necessary for checking at his own cost. Pillars bearing geodetic marks on site shall be protected by the Contractor. On completion of the work, the Contractor shall submit the geodetic documents according to which the work has been carried out.

GC-63 **RESPONSIBILITIES OF CONTRACTOR FOR CORRECTNESS OF THE WORK :**

The Contractor shall be entirely and exclusively responsible for the correctness of every part of the work and shall rectify completely any errors therein at his own cost when so instructed by Engineer-In-Charge. If any error has crept in the work due to non-observance of this clause, the Contractor will be responsible for the error and bear the cost of corrective work.

1. **Materials to be supplied by the Contractor:**
   Contractor shall procure and provide all the material required for the execution and maintenance of work including M S rods; all tools, tackles, construction plant and equipment except, the materials to be supplied by the owner detailed in the contract documents. Owner, shall make recommendations for procurement of materials to the respective authorities if desired by the Contractor but assumes no responsibility of any nature. Owner shall insist for procurement of materials with ISI marks supplied by reputed firms of the DGS & D list.

2. If however, the Engineer-In-Charge feels that the work is likely to be delayed due to Contractor's inability to procure materials, the Engineer-In-Charge shall have the right to procure materials, from the market and the Contractor will accept these materials at the rates decided by Engineer-In-Charge.

GC-64 **MATERIALS TO BE SUPPLIED BY THE OWNER :**

1. If the contract provided certain materials or stores to be supplied by the owner, such materials and stores transported by the Contractor at his cost from owner's stores or Railway Station. The cost from Contractor for the value of materials supplied by the owner will be recovered from the R.A.Bill on the basis of actual consumption of materials in the work covered and for which R A Bill has been prepared. After completion of the work, the Contractor has to account for the full quantity of materials supplied to him.

2. The value of store materials supplied by owner to the Contractor shall be charged at rates shown in the contract document and in case any other material not listed in the schedule of materials is supplied by the owner, the same shall be charged at cost price including carting and other expenses incurred in procuring the same. All materials so supplied shall remain the property of the owner and shall not be removed from the site on any account. Any material remaining unused at the time of completion of work or termination of contracts shall be returned to owner's store or any other place as directed by the Engineer-In-Charge in perfectly good condition at Contractor's cost. When materials are supplied free of cost for use in work and surplus and unaccounted balance thereof are not returned to the owner, recovery in respect of such balance will be effected at double the applicable issue rate of the material or the market rates whichever is higher.

GC-65 **CONDITIONS OF ISSUE OF MATERIALS BY THE OWNER: (N.A.)**

The materials specified to be issued by the owner to the Contractor shall be issued by the owner at his store and all expenses for it carting site shall be borne by the Contractor will be issued during working hours and as per rules of owner from time to time.

Contractor shall bear all expenses for storage and safe custody at site of materials issued to him before use in work.

Material shall be issued by the owner in standard / non-standard sizes as obtained from manufacturer.

Contractor shall construct suitable godowns at site for storing the materials to protect the same from damage due to rain, dampness, fire, theft etc.

The Contractor should take the delivery of the materials issued by the owner after satisfying himself that they are in good condition. Once the materials are issued, it will be the responsibility of the Contractor to keep them in good condition and in safe custody. If the materials get damaged or if they are stolen, it shall be the responsibility of the Contractor to replace them at his cost according to the instructions of the Engineer-In-Charge.

For delay in supply or for non-supply of materials to be supplied by the owner, on account of natural calamities, act of enemies, other difficulties beyond the control of the owner, the owner carries no responsibilities. In no case the Contractor shall be entitled to claim any compensation for loss suffered by him on this account.

None of the materials issued to the contractor, shall be used by the Contractor for manufacturing items which can be obtained from the manufacturer's. The materials issued by the owner shall be used for the work only and no other purpose.

Contractor shall be required to execute indemnity bond in the prescribed form for the safe custody and account of materials issued by the owner.

Contractor shall furnish sufficiently in advance a statement of his requirements of quantities of materials to be supplied by the owner and the time when the same will be required for the work, so as to enable Engineer-In-Charge to make arrangements to procure and supply the materials.

A daily account of materials issued by the owner shall be maintained by the contractor showing receipt, consumption and balance on hand in the form laid down by Engineer-In-Charge with all connected paper and shall be always available for inspection in the site office.

Contractor shall see that only the required quantities of materials are got issued and no more. The Contractor shall be responsible to return the surplus materials at owner's store at his own cost.

GC-66 **MATERIALS PROCURED WITH ASSISTANCE OF THE OWNER :**

Notwithstanding anything contained to the contrary in any of the clauses of this contract, where any materials for the execution of the contract are procured with the assistance of the owner either by issue from owner's

stock or purchase made under orders or permits or licenses issued materials as trustees for owner, and use such materials not disposed them off without the permission of owner and unserviceable materials that may be left with him after completion of the contract or at its termination for any reason whatsoever on his being paid or credited such price as Engineer-In-Charge shall determine having due regard to the conditions of the materials. The price allowed to Contractor shall not exceed the amount charged to him excluding the storage of breach of the aforesaid condition, the Contractor shall in terms of license or permits and/or for criminal breach of trust be liable to compensate owner at double the rate or any higher rates. In the event of these materials at that time having higher rate or not being available in the market then any other rate to be determined by the Engineer-In-Charge at his decision shall be final and conclusive.

GC-67 **MATERIALS OBTAINED FROM DISMANTLING :**

If the Contractor, in the course of execution of work, is called upon to dismantle any part of work for reasons other than on account of bad or imperfect work, the materials obtained from dismantling will be property of the owner and will be disposed off as per instructions of Engineer-In-Charge in the best interest of the owner.

GC-68 **ARTICLE OF VALUE OF TREASURE FOUND DURING CONSTRUCTION :**

All gold, silver and other minerals of any description and all precious stones, coins, treasures, relics, antiques and other similar things which shall be found in, under or upon site shall be the property of the owner and the Contractor shall properly preserve the same to the satisfaction of the Engineer-In-Charge and shall hand over the same to the owner.

GC-69 **DISCREPANCIES BETWEEN INSTRUCTIONS:**

If there is any discrepancy between various stipulations of the contract documents or instructions to the Contractor or his authorized representative or if any doubt arises as to the meaning of such stipulation or instructions, the Contractor shall immediately refer in writing to the Engineer-In-Charge and shall hand over the same to the owner.

GC-70 **ALTERATIONS IN SPECIFICATIONS & DESIGNS & EXTRA WORK :**

The Architect / Engineer-In-Charge shall have power to make any alterations in, omission from, addition to substitution for, the schedule of rates, the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of work and the Contractor shall be bound to carry out such altered / extra / new items of work in accordance with any instructions which may be given to him in writing signed by Engineer-In-Charge and such alteration omissions, additions or substitutions, shall not invalidate contract and any altered, additional or substituted work shall be carried out by the Contractor on the same conditions of contract. The time of completion may be extended by Architect as may be considered just and reasonable by him. The rates for such additional, altered or substitute work shall be worked out as under :

a) If the rates for additional, altered or substitutes work are specified in the contract for work, the Contractor is bound to carry out such work at the same rates as specified in the contract.

b) If the rates for additional, altered or substituted work are not specifically provided in the contract for the work, the rates will be derived from the rates of similar items of work in the contract work. The opinion of Engineer-In-Charge as to whether the rates can be reasonably so derived the items of contract will be final and binding to the Contractors.

c) If the rates of altered, additional or substitute work cannot be determined as specified in (a) or (b) above, the rate shall be paid as per S.O.R. of RMC and if not available in RMC SOR than it will be paid according to SOR of R&B/GWSSB.

d) If the rates of altered, additional or substitute work cannot be determined as specified in (a) or (b) or (c) above, the Contractor shall within seven days of the receipt of order to carry out the work inform the Architect / Engineer-In-Charge of the rate which he intends to charge for such work supported by rate analysis and the Architect / Engineer-In-Charge will determine the rate on the basis of prevailing market rates of materials, labour cost at schedule of labour plus 15% there on as Contractor's supervision overheads and profit. The opinion of Architect / Engineer-In-Charge as to the market rates of materials and the quantity of labour involved per unit of measurement will be final and binding on Contractor.

But under no circumstances, the Contractor suspends work or the plea of non settlement of items falling under this clause.

GC-71 **ACTION WHEN NO SPECIFICAITONS ARE ISSUED :**

In case of any class of work for which no specifications is supplied by the owner in the e-Tender documents, such work shall be carried out in accordance with relevant latest IS and if IS do not cover the same, the work shall be carried out as per General Technical Specification for building work; and if not covered in then it is to be with standard Engineering Practice subject to the approval of Engineer-In-Charge.

GC-72 **ABNORMAL RATES :**

Contractor is expected to quote rate for each item after careful analysis of cost involved for the performance of the completed item considering all specifications and conditions of contract.

GC-73 **ASSISTANCE TO ENGINEER-IN-CHARGE:**

Contractor shall make available to Engineer-In-Charge free of cost all necessary instruments and assistance in checking of any work made by the Contractor setting out for taking measurement of work etc.

GC-74 **TESTS FOR QUALITY OF WORK :**

1. All workmanship shall be of the best kind described in the contract documents and in accordance with the instructions of Engineer-In-Charge and shall be subjected from time to time to such tests at Contractor's cost as the Engineer-In-Charge may direct at the place of manufacture of fabrication or on the site or at any such place. Contractor shall provide assistance, instruments, labour and materials as are normally required for examining, measuring and testing of any work of workmanship as may be selected and required by Engineer-In-Charge.

2. All tests necessary in connection with the execution of work as decided by Engineer-In-Charge shall be carried out at an approved laboratory at Contractor's cost.

3. Contractor shall furnish the Engineer-In-Charge for approval when requested or if required by the specification, adequate samples of all materials and finished goods to be used in work sufficiently in advance to permit tests and examination thereof. All materials furnished and finished goods applied in work shall be exactly as per the approved samples.

GC-75 **ACTION AND COMPENSATION IN CASE OF BAD WORKMANSHIP :**
If it shall appear to the Engineer-In-Charge that any work has been executed with materials of inferior description, or quality or are unsound or with unsound, imperfect or unskilled workmanship or otherwise not in accordance with the contract, the Contractor shall, on demand in writing from Engineer-In-Charge or his authorized representative specifying the work, materials or articles complained of, notwithstanding that the same may have been inadvertently passed, certified and paid for, forthwith rectify or remove and reconstruct the work, so specified. In the event of failure to do so within a period to be specified by the Engineer-In-Charge in his aforesaid demand, Contractor shall be liable to pay compensation at the rate of half a percent of the estimated cost of work for every work limited to a maximum of ten (10%) percent of the value of work while his failure to do so continues and in the case of any such failure, the Engineer-In-Charge may on expiry of the notice period rectify and remove and re-execute the work or remove and replace with others at the risk and cost of the Contractor. The decision of the Engineer-In-Charge as to any question arising under this clause shall be final and conclusive.

GC-76 **SUSPENSION WORK :**
Contractor shall, if ordered in writing by Engineer-In-Charge or his representative temporarily suspended the work or any part thereof for such time (not exceeding one month) as ordered and shall not after receiving such written notice proceed with the work until he shall have received a written order to proceed therewith. The Contractor shall not be entitled to claim compensation for any loss or damage sustained by him by reason of temporary suspension of work as aforesaid. An extension of time for completion of work will be granted to the Contractor corresponding to the delay caused by such suspension of work if he applies for the same provided the suspension was not consequent upon any default or failure on the part of the Contractor.

GC-77 **OWNER MAY DO PART OF THE WORK :**
When the Contractor fails to comply with any instructions given in accordance with the provisions of this contract, the owner has the right to carry out such parts of work as the owner may designate whether by purchasing materials and engaging labour or by the agency of another Contractor. In such case the owner shall deduct from the amount which otherwise might become due to Contractor, the cost of such work and materials with then (10) percent added to cover all departmental charges and should the total amount thereof exceed the amount due to contract, Contractor shall pay the difference to owner.

GC-78 **POSSESSION PRIOR TO COMPLETION :**
The Engineer-In-Charge shall have the right to take possession of or to use any completed or partly completed work or part of work. Such possession or use shall not be deemed to be an acceptance of any work

completed in accordance with the contact. If such prior possession or use by Engineer-In-Charge delays the process of work, equitable adjustment in the time of completion will be made and the contract shall be deemed to be modified accordingly.

GC-79 **COMPLETION CERTIFICATE :**

As soon as the work has been completed in accordance with contact (except in minor respects that do not effect their use for the purpose for which they are intended and except for maintenance thereof) as per General Conditions of Contract the Engineer-In-Charge shall issue a certificate (hereinafter called completion certificate) in which shall certify the date on which work has been completed and has passed the said tests and owner shall be deemed to have taken over work on the date so certified. If work has been divided in various groups in contract, owner shall be entitled to take over any group or groups before the other or others and there upon the Engineer-In-Charge will issue a completion certificate, which will, however, be for such group or groups so taken over.

In order that Contractor could get a completion certificate, he shall make good will all speed any defect arising from the defective materials supplied by Contractor of workmanship or any act or omission of Contractor that may have been discovered or developed after the work or groups of works has been taken over. The period allowed for carrying out such work will be normally, one month. If any defect be not remedied within the time specified, owner may proceed to do work at Contractor's (Agency, or Firm) risk and expenses and deduct from the final bill such amount as may be decided by owner. If by reason of any default on the part of the Contractor, a completion certificate has not been issued in respect of every portion of work within one month after the date fixed by contract for completion of work, owner shall be at liberty to use work or any portion thereof in respect of which a completion certificate has been issued, provided that work or the portion thereof so used as aforesaid shall be afforded reasonable opportunity for completion of that work or the portion thereof so used as aforesaid shall be afforded reasonable opportunity for completion of that work for the issue of completion certificate.

GC-80 **SCHEDULE OF RATES :**

1. The rates quoted by the Contractor shall remain firm till the completion of the work and shall not be subject to escalation. Schedule of rates shall be deemed to include and cover all costs, expenses and liabilities of every description and risks or every kind to be taken in executing, completing and handing over the work to owner by Contractor. The contractor shall be deemed to have known the nature, scope, magnitude and the extent of work and materials required though contract documents may not fully and precisely furnish them. He shall make such provision in the Schedule of Rates as he may consider necessary to cover the cost of such items of work and materials as may be reasonable and necessary to complete the work. The opinion of Engineer-In-Charge as to the item of work which are necessary and reasonable for completion of the work shall be final and binding on Contractor although the same may be not shown on drawings or described specifically in contract documents.

2. The Schedule of Rates shall be deemed to include and cover the cost of all constructional plant, temporary work, materials, labour and all other matters in connection with each item in Schedule of Rates and the

execution of work or any portion thereof finished complete in every respect and maintained as shown or described in the contract document or as may be ordered in writing during the continuance of the contract.

3. The Schedule of Rates shall be deemed to include and cover the cost of all royalties and fees for the articles and processes, protected by letters patent or otherwise incorporated in or used in connection with work, also all royalties, rents and other payments in connection with obtaining material of whatsoever kind for work and shall include an indemnity to owner which Contractor hereby gives against all action, proceedings, claims, damages, costs and expenses arising from the incorporation in or use on the works of any such articles, processes or materials. Other Municipal or local Board charges if levied on material, equipment or machineries to be brought to site for use on work shall be borne by the Contractor.

4. No exemption or reduction of custom duties, excise duties, sales tax or any other taxes or charges of the Central or State Government or of any Local Body whatsoever will be granted or obtained and all such expenses shall be deemed to have been included in and covered by Schedule of Rates. Contractor shall also obtain and pay for all permits or other privileges necessary to complete the work.

5. The Schedule of Rates shall be deemed to include and cover risk on account of delay and interference with Contractor's conduct of work which may occur from any cause including orders of owner in the exercise of his powers and on account of extension of time granted due to various reasons.

6. For work under unit rate basis, no alteration will be allowed in the Schedule of Rates by reasons of work or any part of them being modified, altered, extended, diminished or omitted.

GC-81 PROCEDURE FOR MEASUREMENT OF WORK IN PROGRESS:

1. All measurements shall be in metric system. All the work in progress will be jointly measured by the representative of Engineer-In-Charge and Contractor's authorized agent. Such measurements will be got recorded in the Measurement Book by the Engineer-In-Charge or his authorized representative and signed by the Contractor or his authorized agent in token of acceptance. If the Contractor or his authorized agent fails to be present whenever required by the Engineer-In-Charge for taking measures for every reasons whatsoever, the measurement will be taken by the Engineer-In-Charge or his authorized representative not withstanding the absence of Contractor and these measurements will be deemed to be correct and binding on the Contractor.

2. Contractor will submit a bill in approved proforma in quadruplicate to the Engineer-In-Charge of the work giving abstract and detailed measurements of various items executed during a month as mutually agreed. The Engineer-In-Charge shall verify the bill and the claim, as far as admissible, adjusted if possible, within 10 days of presentation of the bills.

GC-82 RUNNING ACCOUNT PAYMENTS TO BE REGARDED AS ADVANCES :

1. All running account payments shall be regarded as payments by way of advance against the final payment only and not as payment for work

actually done and completed and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be removed and taken away and reconstructed or rejected or to be considered as an admission of the due performance of contract or any part thereof.

2. Five (5) percent of the gross R A Bill amount shall be retained from each bill as retention amount and the same will be paid with the final bill.

GC-83 **NOTICE FOR CLAIM FOR ADDITIONAL PAYMENT :**

If the Contractor considers that he is entitled to extra payment or compensation or any claim whatsoever in respect of work, he shall forthwith give notice in writing to the Engineer-In-Charge about his extra payment and / or compensation. Such notice shall be given to the Engineer-In-Charge within ten (10) days from the happening of any event upon which Contractor basis such claims and such notice shall contain full particulars of the nature of such claim with full details and amount claimed. Failure on the part of the Contractor to put forward any claim with the necessary particulars as above, within the time above specified shall be an absolute waiver thereof. No omission by owner to reject any such claim and no delay in dealing therewith shall waiver by owner or any rights in respect thereof.

GC-84 **PAYMENT OF CONTRACTOR'S BILL :**

1. The price to be paid by the owner to Contractor for the work to be done and for the performance of all the obligations undertaken by the Contractor under contract shall be based on the contract price and payment to be made accordingly for the work actually executed and approved by the Engineer-In-Charge.

2. No payment shall be made for work costing less than Rs.2,00,000/- till the work is completed and a certificate of completion for Construction is given. But in case of work estimated to cost more than Rs.2,00,000/-, Contractor on submitting the bill thereof will be entitled to receive a monthly payment proportionate to the part thereof, approved and passed by Engineer-In-Charge, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against contractor. This payment shall be made after necessary deductions as stipulated elsewhere in the contract documents for materials, security deposit etc. The payment shall be released to the Contractor within two (2) month of submission of the bill duly pre-occupied on proper revenue stamp. Payment due to Contractor shall be made by the owner by ECS/RTGS mode in Indian currency. Successful bidder must furnish his Bank details for RTGS/ECS with Account Branch of RMC.

GC-85 **FINAL BILL :**

The final bill shall be submitted by Contractor within one (1) month of the date of physical completion of work, otherwise the Engineer-In-Charge's certificate of the measurement and of total amount payable for work shall be final and binding on all parties.

GC-86 **RECEIPT FOR PAYMENT :**

Receipt for payment made on account of work when executed by a firm must be signed by a person holding Power of Attorney in this respect on behalf of Contractor except when described in the e-Tender as a limited company in which case the receipt must be signed in the name of the Company by one of its principal officers or by some person having authority to give effectual receipt for the Company.

GC-87 COMPLETION CERTIFICATE :

1. When the Contractor fulfils his obligation as per terms of contract, he shall be eligible to apply for Completion Certificate. Contractor may apply for separate Completion Certificate in respect of each such portion of work by submitting the completion documents along with such application for Completion Certificate.

   The Engineer-In-Charge shall normally issue to Contractor the Completion Certificate within one (1) month after receiving an application thereof from Contractor after verifying, from the completion documents and satisfying himself that work has been completed in accordance with and as set out in the construction and erection drawings and the contract documents. Contractor after obtaining the Completion Certificate is eligible to present the final bill for work executed by him under the terms of contract.

2. Within one month of completion of work in all respects Contractor shall be furnished with a certificate by the Engineer-In-Charge of such completion but no certificate shall be given nor shall work be deemed to have been executed until all (i) scaffolding, surplus materials and rubbish is cleaned off site completely, (ii) until work shall have been measured by the Engineer-In-Charge whose measurement shall be binding and conclusive and, (iii) until all the temporary works, labour and staff colonies etc. constructed are removed and the work site cleaned to the satisfaction of the Engineer-In-Charge. If Contractor shall fail to comply with the requirements as aforesaid or before date fixed for the completion of work, the Engineer-In-Charge may at the expense of Contractor remove such scaffolding, surplus materials and rubbish and dispose off the same as he thinks fit.

3. The following documents will form the completion documents:-

   a) Technical documents according to which the work has been carried out.

   b) Three sets of construction drawings showing therein the modifications and corrections made during the course of execution signed by the Engineer-In-Charge.

   c) Completion Certificate for "Embedded" or "Covered" up work.

   d) Certificate of final levels as set out for various works.

   e) Certificate of test performed for various work.

   f) Material appropriation statement for the materials issued by owner for work and list of surplus materials returned to owner's store duly supported by necessary documents. (N.A.)

4. Upon expiry of the period of defect liability and subject to Engineer-In-Charge being satisfied that work has been duly maintained by Contractor during the defect liability period of fixed originally or as extended subsequently and that Contractor has in all respects made up any subsidence and performed all his obligations under contract, the Engineer-In-Charge (without prejudice to the rights of owner in any way) give final certificate to that effect. The Contractor shall not be considered to have fulfilled the whole of his obligation until final certificate shall have been given by the Engineer-In-Charge.

5. **Final Certificate only evidence of completion:**
   Except the final certificate, no other certificate of payment against a certificate or on general account shall be taken to be an admission by owner of the due performance of contract or any part thereof of occupancy or validity or any claim by the Contractor.

GC-88 **TAXES, DUTIES, ETC. :**

1. Contractor agrees to and does hereby accept full and exclusive liability for the payment of any and all taxes including Sales Tax, Duties, etc., now or hereinafter imposed, increased or modified from time to time in respect of work and materials and all contributions and taxes for unemployment, compensation, insurance and old age pension or annuities now or hereinafter imposed by the Central or State Government authorities with respect to or covered by the wages, salaries or other compensation paid to the persons employed by Contractor.
   If the Contractor is not liable to Sales Tax assessment, a certificate to that effect from the Competent Authority shall be produced without which final payment to the Contractor shall not be made No.P, 'C' and 'D' Form shall be supplied by the owner, and the Contractor shall be required to pay full tax as applicable.

2. Contractor shall be responsible for compliance with all obligations and restrictions imposed by the labour law or any other law affecting employer-employee relationship.

3. Contractor further agrees to comply and to secure the compliance of all sub contractors with applicable Central, State, Municipal and local laws and regulations and requirement. Contractor also agrees to defend, indemnify the hold harmless the owner from any liability or penalty which may be imposed by Central, State or local authority by reasons of any violation by Contractor or sub Contractor of such laws, regulations or requirements and also from all claims, suits or proceedings that may be brought against owner arising under, growing out of or by reasons or work provided for by this Contract by third parties or by Central or State Government authority or any administrative Sub-Division thereof.

   The Sales Tax on work contract will be borne by Contractor.

GC-89 **INSURANCE :**

Contractor shall at his own expenses carry and maintain the reputable Insurance Companies to the satisfaction of owner as follows:

1. Contractor agrees to and uses hereby accept full and exclusive liability for compliance with all obligations imposed by the Employer's State Insurance Act, 1948 and Contractor further agrees to defend, indemnify and hold owner hardness from any liability or penalty which may be imposed by the Central or State Government or local authority by reasons of any assorted violation by Contractor or Sub-Contractor or the Employees State Insurance Act, 1948 and also from all claims, suits or proceedings that may be brought against owner arising under, growing out of or by reasons of the work provided for by this contract whether brought by employees of Contractor by third parties or by Central or State Government authority or any administrative Sub-division thereof.

Contractor agrees to fill in with the Employees State Insurance Corporation, the declaration form and all forms which may be required in respect of Contractor's or sub-Contractor's employees whose aggregate remuneration is Rs.400/- p.m. or less and who are employed in work provided for or those covered by ESI from time to time under the agreement. The Contractor shall deduct and secure the agreement of the sub-Contractor to deduct the employees contribution as per the first schedule of the Employees State Insurance Act from wages. Contractor shall remit and secure the agreement of sub-contractor to remit to the State Bank of Indian Employees State Insurance Accounts, the employee's contribution as required by the Act. Contractor agrees to maintain all cards and records as required under the Act in respect of employees and payments and Contractor shall secure the agreements of the sub contractors to maintain in such records, any expenses incurred for the contributions, making contributions or maintaining records shall be to Contractors or sub-contractors own account. owner shall retain such sum as may be necessary from the contract value until Contractor shall furnish satisfactory proof that all contribution as required by the Employees State Insurance Act, 1948 have been paid.

2. **Workman's compensation and employees liability insurance:** Insurance shall be effected for all Contractors employees engaged in the performance of this contract. If any part of work is sublet, Contractor shall require the sub-Contractor to provide workman's compensation and employer's liability insurance, which may be required by owner.

3. Other Insurance required under law of regulations or by owner Contractor shall also carry and maintain any and all other insurance which may be required under any law or regulation from time to time. He shall also carry and maintain any other insurance, which may be required by owner.

GC-90 **DAMAGE TO PROPERTY :**

1. Contractor shall be responsible for making good to the satisfaction of owner any loss of and any damage to all structures and properties belonging to owner or being executed or procured or being procured by owner or of other agencies within the premises of all work of owner, if such loss or damage is due to fault and / or the negligence of willful act or omission of Contractor, his employees, agent, representatives or sub-Contractor s.

2. Contractor shall indemnify and keep owner harmless of all claims for damage to properties other than property arising under by reasons of this agreement, such claims result from the fault and / or negligence or willful act or omission of Contractor, his employees, agents representative or sub-contractor.

GC-91 **CONTRACTOR TO INDEMNIFY OWNER :**

1. The Contractor shall indemnify and keep indemnified the owner and every member, officer and employee of owner from and against all actions, claims, demands and liabilities whatsoever under the in respect of the breach of any of the above clauses and / or against any claim, action or demand by any workman / employee of the Contractor or any sub-contractor under any laws, rules or regulations having force of laws, including but not limited to claims against the owner under the workman compensation Act, 1923, the Employee's Provident Funds Act, 1952 and / or the contract labour (Abolition and Regulations) Act, 1970.

2. PAYMENTS OF CLAIMS AND DAMAGES : If owner has to pay any money in respect of such claims or demands aforesaid, the amount so paid and the cost incurred by the owner shall be charged to and paid by Contractor without any dispute not withstanding the same may have been paid without the consent or authority of the Contractor.

3. In every case in which by virtue of any provision applicable in the workman's Compensation Act, 1923 or any other Act, owner be obliged to pay compensation to workmen employed by Contractor the amount of compensation so paid, and without prejudice to the rights of owner under Section-(12) Sub-section-(2) of the said Act, owner shall be at liberty to recover such amount from any surplus due to on to become due to the Contractor or from the security deposit. Owner will not be bound to contest any claim made under Section-(12) Sub-section-(2) of the said act except on written request of Contractor and giving full security for all costs consequent upon the contesting of such claim.

   The Contractor shall protect adjoining sites against structural, decorative and other damages that could be cased to adjoining premises by the execution of these works and make good at his cost, any such damage, so caused.

GC-92 **IMPLEMENTATION OF APPRENTICE ACT 1954 :**
Contractor shall comply with the provisions of the apprentice Act 1954 and the orders issued there under from time to time. If he fails to do so, it will be a breach of contract.

GC-93 **HEALTH AND SANITARY ARRANGEMENTS FOR WORKERS:**
Contractor shall comply with all the rules and regulations of the local Sanitary Authorities or as framed by owner from time to time for the protection of health and provide sanitary arrangements of all labour directly or indirectly employed on the work of this contract.

GC-94 **SAFETY CODE :**
General :
Contractor shall adhere to safe construction practice and guard against hazardous and unsafe working conditions and shall comply with owner's rules as set forth herein.

1.0 **First Aid and Industrial Injuries :**

1.1 Contractor shall maintain First-Aid facilities for its employees and those of his sub-contractors.

1.2 Contractor shall make outside arrangements for ambulance service and for the treatment of industrial injuries. Name of those providing these services shall be furnished to Engineer-In-Charge prior to start of construction, and their telephone numbers shall be prominently posted in Contractor's field office.

1.3 All injuries shall be reported promptly to Engineer-In-Charge and a copy of Contractor's report covering each personal injury requiring the attention of a physician shall be furnished to owner.

2.0 **General Rules :**

2.1 Carrying and striking, matches, lighters inside the project area and smoking within the job site is strictly prohibited. Violators of smoking rules

shall be discharged immediately. Within the operation area, no hot work shall be permitted, without valid gas, safety, fire permits. The Contractor shall also be held liable and responsible for all lapses of his sub-Contractors / employees in this regard.

3.0 Contractor's Barricades :

3.1 Contractor shall erect and maintain barricades without any extra cost, required in connection with his operation to guard or protect during the entire phase of the operation of this contract for -

i) Excavation
ii) Hoisting areas
iii) Areas adjudged hazardous by Contractor's OR Owner's inspectors.
iv) Owner's existing property liable to be damaged by Contractor's operations, in the opinion of Engineer-In-Charge / Site Engineer.

3.2 Contractor's employees and those of his sub-contractors shall become acquainted with owner's barricading practices and shall respect the provisions thereof.

3.3 Barricades and hazardous areas adjacent to but not located in normal routes of travel shall be marked by red lantern at night.

4.0 Scaffolding :

4.1 Suitable scaffolding shall be provided for workman for all works that cannot safely be done from ladders. When a ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well suitable footholds and handholds shall be provided on the ladder and the same shall be given an inclination not steeper that 1 in 4 (1 horizontal and 4 vertical).

4.2 Scaffolding or staging, more than 3.6 M. (12') above the ground or floor, swing or suspended from an overhead support or erected with stationary support shall have a guard rail properly attached, bolted, braced and otherwise fixed at least 1.0 M (3') high above the floor or platform or scaffolding or staging and extending along the entire length of the outside ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

4.3 Working platforms, gangways, and stairways should be so constructed that they should not sag unduly or inadequately and if the height of the platform or the gangway of the stairway is more than 3.6 (12') above ground level or floor level, they should be closely boarded, should have adequate width and should be suitably fastened as described in 4.2 above.

4.4 Every opening in the floor of a building or in a working platform be provided with suitable means to prevent the fail of persons or materials by providing suitable fencing or railing whose minimum height shall be 1.0 M (3'.0").

4.5 Safe means of access shall be provided to all working platforms and other working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9.0 M. (30') in length while the width between the side rails in rung ladder shall in no case be less than 30 cms (12 inches) for ladder up to and including 3.0 M. (10'), in longer ladders this width would be increased at least 6 mm (1/4") for each addition 30 c.m. (1.0) of length. Uniform step spacing shall not exceed 30 cms. (12"). Adequate

precaution shall be taken to prevent danger from electrical equipment. No materials on any of the side of work shall be so stacked or placed as to cause danger or inconvenience to any person or public. The Contractor shall also provide all necessary all necessary fencing and lights to protect the workers and staff from accidents, and shall be bound to bear the expenses of defence of every suit action or other proceedings at law that may be brought by any persons for injury sustained owning to neglect of the above precautions and to pay damages and costs which may be awarded in any such suit or action or proceedings to any such person, or which, may be with the consent of the Contractor be paid to compromise any claim by any such person.

5.0 Excavation :

5.1 All trenches 1.2 M (4') or more in depth, shall at all time be supplied with at least one ladder.

5.2 Ladder shall be extended bottom of the trench to at least 3" above the surface of the ground. The side of the trench which are 1.5 M (5') or more in depth shall be stopped back to give suitable slope, or securely held by timber bracing, so as to avoid the danger of sides to collapse. The excavated materials shall not be placed within 1.5 M (5') of the trench of half of the trench depth whichever is more. Cutting shall be done from top to bottom. Under no circumstances, undermining or under cutting be done.

6.0 Demolition :

6.1 Before any demolition work is commenced and also during the progress of the work all roads and open area adjacent to the work site shall either be closed or suitably protected.

6.2 No electric cable or apparatus which is liable to be a source of danger shall remain electricity charged.

6.3 All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion of flooding. No floor or other part of the building shall be so over loaded with debris or materials as to render it unsafe.

7.0 Safety Equipment :

7.1 All necessary personal safety equipment as considered necessary by the Engineer-In-Charge should be made available for the use of persons employed on the site and maintained in a condition suitable for immediate use, and the Contractor should take adequate steps to ensure proper use of equipment by those concerned.

7.2 Workers employed on mixing asphaltic materials, cement and line mortars shall be provided with protective footwear and protective gloves.

8.0 Risky Place :

8.1 When the work is done near any place where there is a risk of drowning, all necessary safety 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 should be made for prompt first-aid treatment of all injuries likely to be sustained during the course of the work.

9.0 Hoisting Equipment :

9.1 Use of hoisting machines and tackles including their attachments, and storage and supports shall conform to the following standards or conditions.

9.2 These shall be of good mechanical construction, sound material and adequate strength and free from patent defect and shall be kept in good condition and in good working order.

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

9.4 Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 Years should be in-charge of any hoisting machine including any scaffolding.

9.5 In case of every hoisting machine and of every chain ring hook, shackle, swivel and pulley block used in hoisting or lowering or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.

9.6 In case of departmental machine, the safe work load shall be notified by the Engineer-In-Charge, as regards Contractor s machine, the Contractor shall, notify, the safety working load of the machine to the Engineer-In-Charge. Whenever the Contractor brings any machinery to site of work he should get it verified by the Engineer-In-Charge concerned.

10.0 Electrical Equipment :

Motors, gears, transmission, electric wiring and other dangerous parts of hoisting appliances shall be provided with efficient safeguards, hoisting appliances should be provided with such means when will reduce to the minimum the risk of accidental descent of the load, adequate precautions shall be taken to reduce to the minimum the risk of any part or a suspended load becoming accidentally displaced. When workers are employed on electrical installations which are already energized, insulating mats, wearing apparel such as gloves, and booths as may be necessary shall be provided. The workers shall not wear any rings, watches and carry keys or other materials which are good conductors of electricity.

11.0 Maintenance of Safety Devices :

All scaffolds, ladders and other safety devices as mentioned or described herein shall be maintained in sound condition and no scaffold, ladder or equipment shall be altered or removed while it is in use. Adequate washing facilities should be provided at or near place of work.

12.0 Display of Safety Instructions :

The safety provisions should be brought to the notice of all concerned by display on a Notice Board at a prominent place at the work spot. The persons responsible for compliance of the safety code shall be named therein by the Contractor.

13.0 Enforcement of Safety Regulations :

To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangement made by the Contractor shall be open to inspection by the Welfare Officer, Engineer-In-Charge or Safety Engineer of the owner or their representatives.

14.0 No Exemption :

14.1 Notwithstanding the above clause 1.0 to 13.0 there is nothing to exempt the Contractor from the operations of any other Act or Rules in force in the Republic of India.

14.2 In addition to the above, the Contractor shall abide by the safety code provisions as per C.P.W.D. safety code framed from time to time.

GC-95 <u>ACCIDENTS</u> :

It shall be Contractor's responsibility to protect against accidents on the works. He shall indemnify the owner against any claim for damage or for injury to person or property resulting from, and in the course of work and also under the provisions of the workman's compensation Act. On the occurrence of an accident arising out of the works which results in death or which is so serious as to be likely to result in death, the Contractor shall within twenty-four hours of such accident, report in writing to the Engineer-In-Charge, the facts stating clearly and in sufficient details the circumstances of such accident and the subsequent action. All other accidents on the works involving injuries to person or damage to property other than that of the Contractor shall be promptly reported to the Engineer-In-Charge, stating clearly and in sufficient details the facts and circumstances of the accidents and the action taken. In all cases, the Contractor shall indemnity the owner against all loss or damage resulting directly or indirectly from the Contractor's failure to report in the manner aforesaid. This includes penalties or fines, if any, payable by the owner as a consequence of failure to give notice under the Workman's Compensation Act, or failure to conform to the provisions of the said act in regard to such accidents.

In the event of an accident in respect of which compensation may become payable under the Workman's Compensation Act VIII of 1923 including all modification thereof, the Engineer-In-Charge may retain out of money due and payable to the Contractor such sum of sums of money as may in the opinion of Engineer-In-Charge be sufficient to meet such liability. On receipt of award from the Labour Commissioner in regard to quantum of compensation, the difference in amount will be adjusted.

Addl/Asst. Engineer R.M.C. | **Dy.Ex.Engineer R.M.C.** | **ADDL. CITY ENGINEER R.M.C.**

Signature of Contractor with Seal

PART-II

SECTION - 3

TECHNICAL SPECIFICATIONS

PART-II
SECTION – 3
TECHNICAL SPECIFICATIONS

CONTENT

:: TECHNICAL SPECIFICATIONS ::

A. GENERAL

1. SCOPE OF CONTRACT :

The work entitled comprise of excavation of trenches with shoring and strutting wherever required bailing out water wherever necessary, laying of pipes, jointing including supply of material and material required for jointing, testing as per specifications, Construction of appurtenances such as brick Masonry Manholes , house chambers etc. as per the type design specified entirely of the specification of various works stipulated in the e- Tender. The work includes supply of sewer pipes i.e. stone ware pipes of ISI Marked and R.C.C. precast manhole frames & covers which shall have to be supplied at site or Municipal store by the contractor at specified and shown in schedule "B". Other material like cement etc shall have to supplied by the contractor from open market.

2. e-TENDER PRICE:

The rates quoted in the bill of quantities shall cover everything necessary for the due and complete execution of the work according to the drawings and other condition and stipulations of the contract including specifications of the evident, intend and meaning of all or either of them or according to customary usage and for periodical and final inspection and test and proof of the work in every respect and for measuring, numbering or weighing the same, including setting out and laying or fixing in position and the provision of all materials, power, tools, rammers, labour, tackle, platforms with impervious lapped joints for scaffolding, ranging roads, straight edged, cantering and boxing, wedges, moulds, templates, posts, straight rods, straight edged, cantering and boxing, wedges, moulds, templates, posts, straight rails, boning staves strutting, barriers, fencing lighting pumping apparatus, temporary arrangement for passage of traffic access to premises and continuance to drainage water supply and lighting (if interrupted by contractor's work) temporary sheds, painting, varnishing, polishing establishment for efficient supervision and stating arrangements for the efficient protective of life and property and all requisite plant and machinery of every kind.

The contractor shall keep every portion of the work clear of accumulation from time to time and shall leave every portion of the work clean, clear, perfect and at the conclusion of whole, providing at their own cost all such material implement, appliances and labour as the Engineer in charge may require to prove if it to be so.

3. COMPLETION SCHEDULE:

The contract period shall be as prescribed in tender document, from the date of notice to proceed. The Contractor shall submit his completion schedule and the program of works together with this e-Tender in conformity with completion schedule given in the documents.

4. GENERAL TECHNICAL GUIDELINE:

4.1 All the items occurring in the work and as found necessary during actual execution shall be carried out in the best workman like manner as per specifications and the written order of the Engineer in charge

4.2 Extra Claim in respect of extra work shall be allowed only if such work is ordered to be carried out in writing by the Engineer in charge

4.3 The contractor shall engage a qualified Engineer for the Execution of work who will remain present for all the time on site and will receive instructions and orders from the Engineer in charge or his authorized representative. The instruction and orders given to the contractor representative on site shall be considered as it given to the contractor himself.

4.4 The work order book as prescribed shall be maintained on the site of the work by the contactor and the contractor shall sign the orders given by the inspecting offers and shall carry out them properly.

4.5 Quantities specified in the e-Tender may vary at the time of actual execution and the contractor shall have no claim for compensation
on account of such variation

4.6 Unexcavated lengths shall be left wherever required and so directed by the Engineer in charge during the currency of the contract and shall be tackled. If required, before completion of work.

4.7 Diversion of road, if necessary, shall be provided and maintained during the currency of the contract by the contractor at his cost.

4.8 Figured Dimensions of drawing shall supersede measurements by scale, special dimensions or directions in the specifications shall
supersede all other dimensions.

4.9 All levels are given on drawings and the contractor shall be responsible to take regular level on the approved alignment before actually starting the work. The levels shall be commence to the G.T.S. levels and shall be got approved from the Engineer in charge

4.10 If the arrangement of temporary drainage is required to be made during any work of this Contract, this shall be made by the Contractor without claiming any extra cost.

5. CLASSIFICATION OF STRATA:

5.1 All materials encountered in excavation will be classified in the following groups irrespective of mode of excavating the materials and the decision of the Engineer in charge in this regard shall be final and binding to the contractor.

5.2 Soils :

Soils of all sorts, silt, sand, gravel, soft murrum, stiff clay, kunkar and other soft excavation not covered in the items mentioned hereunder.

5.3 Hard Murrum :

Hard Materials comprising of all kinds of disintegrated rock or shale or indurate conglomerate interspersed with boulders, weathered and decomposed rock which could be removed with pick, bar, shove, wedges and hammers, though not without some difficulties.

5.4 Soft – Rock:

This shall include all materials which is rock but which does not need blasting and can be removed with a pick bar, wedges, pavement breakers, pneumatic tools etc.

5.5 Hard Rock:

This shall include rock accusing in mass or boulders which need blasting, this will also include rock to be removed by chiseling or any other method where blasting is not permissible.

6. The rates are inclusive of dewatering, if required.

7. Regarding water supply for hydro testing, necessary water, power, labour, etc. required for necessary test shall be arranged by the contractor at his own cost.

8. During construction activity, proper care must be taken for labour safety and must follow the provisions of the Labour laws.

9. TMT bars of Fe-500 should be confirming to IS:1786. The approved makes shall be TATA, SAIL, Vizag, Gallent, Electrotherm, Utkarsh, Poddar or other equivalent make as approved by engineer-in-charge.

10. Cement shall be ordinary Portland cement 53 Grade conforming to

IS:269, IS:8112 or IS:12269 for all the works as per the instructions of engineer-incharge. The approved makes shall be Ambuja, Ultratect, LOTUS, Hathi or as per IS confirming. Minimum Cement content for the work should be as per attached circular No.RMC/C/Vigi.(Tech)/231 dt. 11/03/2022.

11. Testing of the materials like Brick, Sand, Aggregate, Reinforcement steel, etc. should have to be tested peridiocally as suggested by the Engineer-in-charge at Government approved material testing Laboratory and testing charges for the same has to be borne by the contractor.

12. In case of any ambiguity found in inspections / drawings etc, the decision of engineer-in-charge shall be final and binding to the contractor.

A. DETAILED TECHNICAL SPECIFICATIONS

B1 MATERIAL SPECIFICATION

1. Material:

M-1 Water:

Water shall not be salty or brackish and shall be clean, reasonably clear and free from objectionable quantities of silt and traces of oil and injurious alkalis, salts, organic matter and other deleterious material which will either weaken the mortar of concrete or cause efflorescence or attack the steel in RCC container for transport, storage and handling of water shall be clean. Water shall conform to the standards specified in I.S. 456 - Latest edition.

If required by the engineer-in-charge, it shall be tested by comparison with distilled water. Comparison shall be made by means of standard cement tests for soundness, change in time of setting and mortar strength as specified in I.S. 269 (Latest edition). Any indication of unsoundness, change in time of setting by 30 minutes or more or decrease of more than 10 per cint in strength of mortar prepared with water sample when compared with the results obtained with mortar prepared with distilled water shall be sufficient cause for rejection of water under test.

Water for curing mortar, concrete or masonry should not be too acidic or too alkaline. It shall be free of elements which significantly affect the hydration reaction or otherwise interfere with the hardening of mortar or concrete during curing or those which produce objectionable stains or other unsightly deposits on concrete or mortar surface.

Hard and bitter water shall not be used for curing.
Potable water will generally found suitable for curing mortar of concrete.

M-2 Lime:

Lime shall be hydraulic lime as per I S 712 - Latest Edition. Necessary tests shall be carried out as per I S 6932 9 (Parts I to X) Latest edition.

The following field tests for limes are to be carried out:

i) A very rough idea can be formed about the type of lime by its visual examination i.e. fat lime bears pure white colour, lime in form of porous lumps of dirty white colour indicates quick lime and solid lumps are the unburnt lime stone.

ii) Acid tests for determining the carbonate content in lime, lime Excessive amount of impurities and rough determination of lime.

Storage shall comply with I S 712 - Latest Edition. The slaked lime, it stored, shall be kept in a weather proof and damp-proof shed with impervious floor and sides to protect it against rain, moisture, and weather and extraneous materials mixing with it. All lime that has been damaged in any way shall be and all rejected materials shall be removed from site of work.

Field testing shall be done according to I S 269 (latest edition) to show the acceptability of materials.

M-3 Cement:
Cement shall be ordinary portland cement as per IS:269 or IS:8112 and IS:12669 (All Latest edition).

M-4 White Cement:
The white cement shall conform to I S 8042-E Latest edition.

M-5 Colored Cement:
Color cement shall be with white or grey portland cement as specified in the item of the work.

The pigments used for colored cement shall be of approved quality and shall not exceed 10% of cement used in the mix. The mixture of pigment and cement shall be properly ground to have a uniform color and shade. The pigments shall have such properties as to provide for durability under exposure to sunlight and weather.

The pigment shall have the property such that it is neither affected by the cement nor detrimental to it.

M-6 Sand:
Sand shall be natural sand or silica, clean well graded, hard strong, durable and gritty particles free from injurious amounts of dust, clay, kankar nodules, soft or flaky particles Shale, alkali, salts organic matter, loam, mica or other deleterious substances and shall be got approved from the engineer-in-charge. The sand shall not contain more than 8 percent of silt as determined by field test. If necessary, the sand shall be washed to make it clean.

Coarse Sand:
The fineness modules of coarse sand shall not be less than 2.5 and shall not exceed 3.0. The sieve analysis of coarse shall be as under:

I.S. Sieve Designation	Percentage by weight passing sieve	IS Sieve percentage Designation	by weight percentage passing sieve.
4.75 mm	100	600 Micron	30-100
2.36 mm	90 to 100	300 Micron	5-70
1.18 mm	70-100	150 Micron	0-50

Fine Sand:
The fineness modules shall not exceed 1.0 The sieve analysis of fine sand shall be as under:

I.S. Sieve Designation	Percentage by weight passing sieve	IS Sieve percentage Designation	by weight percentage passing sieve.

4.75 mm	100	600 Micron	40-85
2.36 mm	100	300 Micron	5-50
1.18 mm	75-100	150 Micron	0-10

M-7 Stone Dust:

This shall be obtained from crushing hard black trap or equivalent. It shall not contain more than 8% of silt as determined by field test with measuring cylinder. The method of determining silt contents by fields test is given as under:

A sample of stone dust to be tested shall be placed without drying in 200 mm measuring cylinder. The quantity if the sample shall be such that it fills the cylinder upto 100 mm mark, the clean water shall be added upto 150 mm mark. The mixture shall be stirred vigorously and content allowed to settle for 3 hours.

The height of silt visible as settled layer above the stone dust shall be expressed as percentage of the height of the stone dust below. The stone containing more than 8% silt shall be washed so as to bring the content within the allowable limit.

The fitness nodules of stone dust shall not be less than 1.80

M-8 Stone Grit:

Grit shall consist of crushed or broken stone and be hard, strong dense durable clean of proper gradation and free from skin or coating likely to prevent proper adhesion of mortar. Grit shall generally be cubical in shape and as far as possible flaky elongated pieces shall be avoided. It shall generally comply with the provisions of IS 383 (Latest Edition). Unless special stone of particular quarries is mentioned, grit shall be obtained from the best black trap or equivalent hard stone as approved by the engineer-in-charge. The grit shall have no deleterious reaction with cement.

The grit shall conform to the following gradation as per sieve analysis:

I.S. Sieve Designation	Percentage passing through sieve	IS Sieve Designation	percentage passing through sieve
12.50 mm	100%	4.75 mm	0-20%
10.00 mm	85-100%	2.36 mm	0-25%

The crushing strength will be such as to allow the concrete in which it used to build up the specified strength of concrete.

The necessary tests for grit shall be carried out as per the requirements of I S 2386 (Part I to VIII) Latest edition as per instruction of engineer-in-charge. The necessity of test will be decided by the engineer-in-charge.

M-9 Cinder:

Cinder is well burnt furnace residue which has been fused or sintered into lumps of varying sizes.

Cinder aggregates shall be well burnt furnaces residue obtained from furnace using coal fuel only. It shall be sound clean and free from clay, dirt, ash or other deleterious matter.

The average grading for cinder aggregate shall be as mentioned below:

I.S. Sieve Designation	Percentage passing	IS Sieve Designation	percentage pass-ing
20 mm	100%	4.75 mm	70
10 mm	86	2.36 mm	52

M-10 Lime Mortar:

Lime: Lime shall conform to specification M-2. **Water:** Water shall conform to specification M-1. **Sand:** Sand shall conform to specification M-6.

Proportion of Mix:
Mortar shall consist of such proportions of slaked lime and sand as may be specified in item. the slaked lime and sand shall be measured by volume.

Preparation of Mortar:
Lime mortar shall be prepared by process as per IS 1625 Latest edition. Power drive mill shall be used for preparation of lime mortar. The slaked lime shall be placed in the mill in an even layer and ground for 180 revolutions with a sufficient water. Water shall be added as required during griding (care being taken not to add more water) that will bring the mixed material to a consistency of stiff paste. Thoroughly wetted sand shall then be added evenly and the mixture ground for another 180 revolutions.

Storage:
Mortar shall always be kept damp, protected from sun and rain till used up, covering it by tarpaulin or open sheds.

All mortar shall be used as soon as possible after grinding. It should be used on the day on which it prepared. But in no case, mortar made earlier than 36 hours shall be permitted for use.

M-11 Cement Mortar:
Water shall conform to specification M-1. Cement: Cement shall conform to specifications M-3. Sand: Sand shall conform to M-6.

Proportion of Mix:
Cement and sand shall be mixed to specified proportion, sand being measured by measuring boxes. The proportion of cement will be by volume on the basis of 50 kg/Bag of cement being equal to 0.342 Cu.M. The mortar may be hand mixed as directed.

Proportion of Mortar:

In hand mixed mortar, cement and sand in the specifications shall be thoroughly mixed dry on a clean impervious platform by turning over at least 3 times or more till a homogeneous mixture of uniform color is obtained. mixing platform shall be so arranged that no deleterious extraneous material shall get mixed with mortar or mortar shall flow out. While mixing, the water shall be gradually added and thoroughly mixed to form a still plastic mass of uniform color so that each particle of sand shall be completely covered with a film of wet cement. the water cement ratio shall be adopted as directed.

The mortar so prepared shall be used within 30 minutes of adding water. Only such quantity of mortar shall be prepared as can used within 30 minutes.

M-12 Stone Coarse Aggregate for Nominal Mix Concrete.

Coarse aggregate shall be of machine crushed stone of black trap or equivalent and be hard, strong, dense, durable clean and free from skin and coating likely to prevent proper adhesion of mortar.

The aggregate shall generally be cubical in shape. Unless special stones of particular quarries are mentioned, aggregates shall be machine crushed from the best black trap or equivalent hard tone as approved. Aggregate shall have no deleterious reaction with cement. The size of the coarse aggregate for plain cement concrete and ordinary reinforced cement concrete shall generally be as per the table given below, however, in case of reinforced cement concrete the maximum limit may be restricted to 6 mm, less than the minimum lateral clear distance between bars of 6 mm less than the cover whichever is smaller.

I S Sieve designa-tion	Percentage passing for single sized aggregates of nominal size			IS Sieve desig-nation	Percentage passing for single sized aggregates of nominal size		
	40 mm	20 mm	16 mm		40 mm	20 mm	16 mm
80 mm	--	--	--	12.5 mm	--	--	--
63 mm	100	--	--	10 mm	0.5	--	0.30
40 mm	85-100	100	--	4.75 mm	--	0.20	0.5
20 mm	0-20	85-100	100	2.35 mm	--	0.50	--
16 mm			8-100	--	--	--	--

Note:

This percentage may be the engineer-in-charge when considered necessary for obtaining better density and strength of concrete.

The grading test shall be taken in the beginning and at the change of source of materials. The necessary tests indicated in IS 383 Latest edition and IS 456 Latest edition shall have to be carried out to ensure the acceptability. The aggregates shall be stored separately and handled in such a manner as to prevent the intermixing of different aggregates. If the aggregates are covered with dust, they shall be washed with water to make them clean.

M-13 Black Trap or Equivalent Hard Stone Coarse:
Aggregate for Design Mix concrete:
Coarse aggregate shall be of machine crushed stone of black trap or equivalent hard stone and be hard strong, dense, durable, clean and free from skin and coating likely to prevent proper adhesion of mortar.

The aggregates shall generally be cubical in shape. Unless special stones of particular quarries are mentioned, aggregates shall be machine crushed from the best, black trap or equivalent hard stones as approved. Aggregate shall have no deleterious reaction with cement.

The necessary tests indicated in IS 383 Latest edition and IS 456 Latest edition shall have to carried out to ensure the acceptability of the material.

If aggregate is covered with dust, it shall be washed with water to make it clean.

M-14 Brick Bats Aggregate:
Brick bat aggregate shall be broken from well burnt or slightly over burnt and dense bricks. It shall be homogeneous in texture, roughly cubical in shape, clean and free from dirt of any other foreign material. The brick bats shall be of 40 mm to 50 mm size unless otherwise specified in the item. The under burnt of over brunt brick bats shall not be allowed.

The brick bats shall be measured by suitable boxes as directed.

M-15 Bricks:
The bricks shall be hard or machine moulded and made from suitable soils and burnt. They shall be free from cracks and flaws and nodules of free lime. They shall have smooth rectangular faces with sharp corners and shall be of uniform colors.

The bricks shall be moulded with a frog of 100 mm x 40 mm and 10 mm to 20 mm deep on one of it's flat sides. The bricks shall not break when thrown on the ground from a height of 600 mm.

The size of modular bricks shall be 190 mm x 90 mm.

The size of the conventional bricks shall be as under:
(9" x 4.3/8" x 2,3/4") 225 x 110 x 75 mm

Only bricks of one standard size shall be used in one work. The following tolerances shall be permitted in the conventional size adopted in a particular work.
Length ±1/8" (3mm) width : ± 1/16" (1.5mm)
Height: ± 1/16" (1.5 mm)

The crushing strength of the brick shall not be less than 35 kg/sq.cm. The average water absorption shall not be more than 20 percent by weight. Necessary tests for crushing strength and water absorption etc., shall be carried out as per IS: 3495 (Part I to IV) - latest edition.

M-16 Stone:

The stone shall be of the specified variety such as granite / trap stone / quarzite or any other type of good hard stones. The stones shall be obtained only from the approved quarry and shall be hard, sound, durable and free from defects like cavities cracks, sand holes flaws, injurious reins, patches of loose or soft materials etc. and weathered portion and other structural defects or imperfection tending to affected their soundness and strength. The stone with round surface shall not be used. The percentage of water absorption shall not be more than 5% dry or wet. When tested in accordance with I.S.1124 - Latest edition. The minimum crushing strength of the stone be 200 kg/sq.cm unless otherwise specified.

The samples of the stone to be used shall be got approved before the work is started.

The khanki facing stone shall be dressed by chisel as specified in the item for khanki facing in required shape and size. The face of the stone shall be so dressed that the bushing on the exposed face shall not project by more than 40 mm from the general wall surface and on face to be plastered it shall not project by more than 19 mm nor shall it have depressions more than 10 mm from the average wall surface.

M-17 Laterite Stone

Laterite stone shall be obtained from the approved quarry. It shall be compacted, in texture, sound, durable and free from soft patchs. Its shall have minimum crushing strength of 10 Kg/sq.cm in its dry condition. It shall not absorb water more than 20 % of its own weight, when immersed for 24 hours in water After quarrying, the stone shall be allowed to weather for some time before using in work. '

The stone shall be dressed into regular rectangular blocks so that all faces are free from waviness and unevenness, and the edges true and square.

Those types of stone in which white cly occurs should not be used.

Special corner stones shall be provided where so directed.

M-18 Mild Steel Bars:

Mild steel bars reinforcement for RCC work shall confirm to IS 432 (Part-II) Latest edition and shall be of tested quality. It shall also comply with relevant part of IS 456 Latest edition.
All the reinforcement shall be clean and free from dirt, paint, grease, mill scale or loose or thick rust at the time of placing.
For the purpose of payment, the bar shall be measured correct upto 10 mm length and weight payable worked out at the rate specified below:

1	6 mm	0.22 Kg/Rmt	8	20 mm	2.47 Kg/Rmt
2	8 mm	0.39 Kg/Rmt	9	22 mm	2.98 Kg/Rmt

3	10 mm	0.62 Kg/Rmt	10	25 mm	3.85 Kg/Rmt
4	12 mm	0.89 Kg/Rmt	11	28 mm	4.83 Kg/Rmt
5	14 mm	1.21 Kg/Rmt	12	32 mm	6.31 Kg/Rmt
6	16 mm	1.58 Kg/Rmt	13	36 mm	7.99 Kg/Rmt
7	18 mm	2.00 Kg/Rmt	14	40 mm	9.86 Kg/Rmt

M-19 High Yield Strength Steel Deformed Bars:

High yield strength steel deformed bars shall be either cold twisted other rolled and shall conform to IS 1786 Latest edition and IS 1139 Latest edition respectively.

Other provisions and requirements shall conform to specification No.M-18 for Mild Steel Bars.

M-20 High Tensile Steel Wires:

The high tensile wires for use in prestressed concrete work shall conform to IS 2090 Latest edition.

The tensile strength of the high tensile steel bars shall be as specified in the item. In absence of the given strength the minimum strength shall be taken as per part 6-1 of the IS 1785 Latest edition. Testing shall be done as per I S requirements.

The high tensile shall be free from loose mill scale, rust, oil grease, or any other harmful matter. Cleaning of steel bars may be carried out immersion in solvent solution, wire brushing or passing through a pressure box containing carborundum.

The high tensile wire shall be obtained from manufacturer in coil having diameter not less than 350 times the diameter of wire itself, so that wire springs back straight on being uncoiled.

M-20(A) Plain Carbon Drawn Steel Wires:

The plain carbon drawn steel wires for use in precast concrete work shall be conform to IS 1785 (Part-II) Latest edition.

The tensile strength of the P C steel bars shall be as specified in the item. In absence of the given strength, the minimum strength shall be taken as per IS:1785 Latest edition. Testing shall be done as per IS requirements.

The P C steel bars shall be free from loose mill scale, rust, oil grease, or any other harmful matter. Cleaning of steel bars may be carried out immersion in solvent solution, wire brushing or passing through a pressure box containing carborandum.

M-21 Mild Steel Binding Wire:

The mild steel wire shall be of 1.63 mm, 22 mm (16 or 18 gauge) diameter and shall conform to I S 280 Latest edition.

The use of black wire will be permitted to binding reinforcement bars. It shall be free rust, oil paint, grease, loose mill scale or any other undesirable coating which may prevent adhesion of cement mortar.

M-22 Structural Steel:

All structural steel shall confirm to IS 226 Latest edition. The steel shall be free from the defects mentioned in IS 226 Latest edition and shall have a smooth finish. the material shall be free from loose mill scale, rust pits or other defects affecting the strength and durability. River bars shall conform to IS 1148 Latest edition.

When the steel is supplied by the contractor, test certificate of the manufacturer shall be obtained according to IS 226 Latest edition and other relevant Indian Standards.

M-23 Galvanized Iron Sheets :

The galvanized iron sheets shall be plain or corrugated sheets of guages as specified in item. The G.I. Sheets shall conform to I.S.latest edition. The sheets shall be undamaged in carriage and handling either by rubbing off of zinc coating or otherwise. They shall have clean and bright surface and shall be free from bends, holes, rust or white powdery deposit.

The length and width G.I. sheet shall be as directed as per site condition.

M-23-A : G.I. Valleys gutter, ridges :

The G.I. ridges and hips shall be of plain galvanized sheets Class-3 of the thickness as specified in item. These shall be 600 mm in and width and properly bent up to shape without damage to the sheets an in process of bending.

Valleys gutters and flashings shall also be of galvanized sheets of thickness as specified in item. Valleys shall be 900 mm. wide overall and flashing shall be 380 mm. wide overall. They shall be bent to the required shape without damage to the sheet in the process of bending.

M-24. Asbestos Cement Sheets :

Asbestos cement sheets plain, corrugated or semi-corrugated shall - conform shall conform to I.S. latest edition. The thickness of the sheets shall be as specified in The item. the sheets shall be free from all defects such as cracks, holes, deformities, edges or otherwise damaged.

Ridge & Hips :

Ridge and hips shall, be of same thickness as that of A.C. sheets. The types of ridges shall be suitable for the type of sheets and location.

Other accessories to be used in roof such as flashing pieces eaves filler pieces, valley gutters, north light and ventilator curves, barge boards etc. shall be of standard manufacture and shall be suitable for the type of sheets and location.

M-25. Manglore Pattern Roof Tiles :

The mangalore pattern tiles shall conform to I.S. latest edition for Class AA or class A type as specified in item. Sample of the tiles to be provided shall be got approved from the Engineer-in-charge. Necessary tests shall be carried out as directed.

M-34. Welded Steel Wire Fabric

Welded steel wire fabric for general purpose shall be manufactured from cold drawn steel wire "as drawn" or galvanized steel conforming to LS. Latest edition with longitudinal and transverse wire securely connected at every intersection by a process of electrical resistance welding and conforming to I.S. latest edition. It shall be fabricated and finished in workmanlike manner and shall be free from injurious defects and shall be rust proof. The type of mesh shall be oblong or square as directed. The mesh sizes and size of wire for square as well as oblong welded steel wire fabric shall be as directed. The steel wire fabric in panels shall be in one whole piece in each panel as far as stock sizes permit.

M-36. Mild Steel Wire (Wire Gauze Jali) :

Mild steel wire may be galvanized, as indicated. A11 finished steel wire shall be well cleanly drawn to the dimensions, and size of wire as specified in item. The wire shall be sound, free from splits, surface flaws, rough jagged-and imperfect edges and other harmful surface defect and shall conform to I.S. latest edition.

M-78. Barbed Wire.

The barbed wire shall be of galvanized steel and it shall generally conform to IS: latest edition. The barbed wire shall be of type-I whose nominal diameter for line wire shall be 2.5 mm and point wire 2.24 mm. The nominal distance between two barbs shall be 75 mm, unless otherwise specified in the item. The barbed wire shall be formed by twisting together two line wires, one containing the barbs. The size of the line and point wires and barb spacing shall be as specified above. The permissible deviation from the nominal diameter of the line wire and point wire shall not exceed 0.08 mm.

The barbs shall carry four points and shall be formed by twisting two point wires, each two turns, lightly round one line wire, making altogether four complete turns. The barbs shall be so finished that the tour points are set and locked at right angles to each other. The barbs shall have a length of not less than 13 mm. and not more than 18 mm. The point shall be sharp and cut at an angle not greater than 35 degree of the axis of the wire forming the barbs.

The line and point wires shall be circular section, free from scale and other defects and shall be uniformly galvanized. The line wire shall be in continuous length and shall not contain any welds other than those in the rod before it is drawn. The distance between two successive splices shall not be less than 15 meters.

The lengths per 100 Kg. of bar-bed wire IS: type I shall be as under :
Nominal 1000 meters. Minimum 934 Meter. Maximum 1066 Meter.

Signature of Contractor

DETAILED TECHNICAL SPECIFICATIONS

Item No.1:
Dismantling of Super Structure and disposing it in RMC area
And
Item No.2:
Dismantling Cement concrete or RCC Disposing it in RMC area

1. The work shall consist of removing, as herein after set forth; existing culverts, bridges, pavement, kerbs and other structures like guards- rails, fences, utility poles, manholes, catch basins, inlets, etc. Which are in place but interfere with the new construction or are not suitable to remain in place and of salvaging and disposing of the resulting materials and back-filling the resulting trenches and pits.

2. Existing culverts, bridges, pavements and other structures which are within the work area and which are designated to be removed, shall be removed up to the limits and extent specified in the drawings or as indicated by the Engineer-in-charge.

3. Dismantling and removal operations shall be carried out with such equipment and in such a manner as to leave undisturbed, adjacent pavement, structures and other work to be left intact.

4. All operations necessary for the removal of any existing structure which might endanger new construction shall be completed prior to the start of new work.

5. The structures shall be dismantled carefully and the resulting materials so removed as not to cause any damage to the serviceable materials to be salvaged, the part of structure to be retained and any other properties or structures nearby.

6. Unless otherwise specified, the superstructure portion of culverts / bridges shall be entirely removed and other parts removed to below the ground level or as necessary depending upon the interference they cause to the new construction. Removal of overlying of adjacent material if required in connection with the dismantling of the structures shall be incidental to this item.

7. Where existing culverts / bridges are to be extended or otherwise incorporated in the new work only such part or parts of the existing structure shall be removed as are necessary to provide a proper connection to the new work. The connecting edges, shall be cut, chipped and trimmed to the required lines and grades without weakening or damaging any part of the structure to be retained. Reinforcing bars which are to be left in place so as to project into new work as dowels or ties shall not be injured during removal of concrete.

8. Pipe culverts shall be carefully removed in such a manner as to avoid damage to the pipes.

9. Steel structures shall unless otherwise provided be carefully dismantled in such a manner as to avoid damage to members thereof. If specified in the drawing or directed by the Engineer-in-charge that structure is to be removed in a condition suitable for re-erection, all members shall be match marked by the contractor with white lead paint before dismantling. End pins, nuts, loose, plates, etc. shall be similarly marked to indicate their proper location. All pins, pin holes and machined surfaces shall be painted with a mixture of white lead and tallow and loose parts shall be securely wired to adjacent members or packed in boxes.

10. Timber structures shall be removed in such a manner as to avoid damages to such timber or lumber as is designated by the Engineer -in- charge to be salvaged.

11. In removing pavements, kerbs, gutters, and other structures, like guard rails, fences, manholes, catch, basins, inlets etc. where portions of the existing construction are to be left in the finished work, the same shall be removed to an existing joint or cut and chipped to a true line with a face perpendicular to the surface of the existing structure. Sufficient removal shall be made to provide for proper grades and corresponding with the new work as directed by the Engineer-in-charge.

12. All concrete pavements base course in carriageway and shoulders etc. designated for removal shall be broken to pieces whose volumes shall not be exceed 0.02 cubic meter and, stockpiled at designated locations if the material is to be used later or otherwise arranged for disposal as directed.

13. Where directed by the engineer-in-charge holes and depressions caused by dismantling operations shall be backfilled with excavated or other approved material and thoroughly compacted in line with surrounding area.

14. All materials obtained by dismantling shall be the property of Government. Unless otherwise specified, materials having any salvage value shall be placed in neat stack of like material within the right-of-way as directed by the Engineer-in-charge, for which contractor will remain responsible for its safe custody and preservation for 60 days after recording measurements of the salvaged material.

15. Pipe culverts that are removed shall be cleared and neatly piled on the right-of-way at points designated by the Engineer-in-charge.

16. Structural steel removed from old structure shall, unless otherwise specified or directed be stored in a neat and presentable manner on blocking in locations suitable for loading. Structures or portions thereof which are specified in the contract for re-erections shall be stored in

separate piles.

17. Timber of lumber from old structures which is designated by the Engineer-in-charge as materials to be salvaged shall have all nuts and bolts removed from and shall be stored in neat piles in locations suitable for loading.

18. All the products of dismantling operations which in the opinion of the Engineer-in-charge cannot be used or auctioned shall be disposed as directed, within 100 meters.

19. The work of dismantling structure shall be paid for in units indicated below by taking measurement before and after, as applicable;

i)	Dismantling brick / stone / concrete (Plain and reinforced) masonry	Cubic Meter
ii)	Dismantling flexible and cement concrete pavement	Cubic Meter
iii)	Dismantling steel structure	Ton
iv)	Dismantling timber structure	Cubic Meter
v)	Dismantling pipes, guard rails, kerbs, gutters and fencing	Linear Meter
vi)	Utility poles	No.s
vii)	Removal of flooring – CC Precast Tiles / Shahbadi ladi / tiles flooring	Sqr. Mtr
viii)	Removal of road divider strip	No.s

20. The contract unit rates for the various items of dismantling shall be for payment in full for carrying out the required operations including full compensation for all labor, materials, tools equipment, safeguard and incidentals necessary to complete the work. These will also include excavation and backfilling where necessary and for handling, salvaging, pilling and disposing of the dismantled material within all lifts and up to a lead of 100 meters.

Item No.3:
Dismantling of existing pre cast RCC comound wall including usfull material should be transport upto 3KM lead of RMC warehouse or store

The precast members should be deconstructed carefully using required skilled labour and equipments. Care must be taken to salvage the members without significant damage. The work should be done including dismantling, lifting and staking of material at designated RMC warehouse or store as per the instructions of Engineer in charge.

Mode of Measurement: Surface area of precast compound wall dismantled and transferred to RMC store shall be considered for measurements.

Item No.4:
Clearing and grubbing land including uprooting rank vegetation grass bushes,shrubs,sapling and trees girth up to 300 mm removal of stumps of trees cut earlier and disposal of unserviceable materials(D) By mechanical means in area of thorny jungle

1.0 CLEARANCE
Land clearance shall comprise uprooting of rank vegetation, grass, brushwood, shrubs, stumps, trees and saplings of girth upto 30 cm measured at a height of one metre above the ground level. Where only clearance of grass is involved it shall be measured and paid for separately.

2.1 Uprooting of Vegetations
The roots of trees and saplings shall be removed to a depth of 60 cm below ground level or 30 cm below formation level or 15 cm below sub-grade level, whichever is lower. All holes or hollows formed due to removal of roots shall be filled up with earth rammed and levelled. Trees, shrubs, poles, fences, signs, monuments, pipe lines, cable etc., within or adjacent to the area which are not required to be disturbed during jungle clearance shall be properly protected by the contractor at his own cost and nothing extra shall be payable.

2.2 Stacking and Disposal
All useful materials obtained from clearing and grubbing operation shall be stacked in the manner as directed by the Engineer-in-Charge. Trunks and branches of trees shall be cleared of limbs and tops and stacked neatly at places indicated by the Engineer-in-Charge. The materials shall be the property of the Government. All unserviceable materials which in the opinion of the Engineer-in-Charge cannot be used or auctioned shall be removed up to a distance of 50 m outside the periphery of the area under clearance. It shall be ensured by the contractor that unserviceable materials are disposed off in such a manner that there is no likelihood of getting mixed up with the materials meant forconstruction.

2.3 Clearance of Grass
Clearing and grubbing operation involving only the clearance of grass shall be measured and paid for separately and shall include removal of rubbish upto a distance of 50 m outside the periphery of the area under clearance.

3.0 Measurements
The rate includes cost of all the operation described above. The length and breadth shall be measured correct to the nearest hector and area worked out in square metres correct to two places of decimal.

Item No.5:
Excavation of Foundation in Soft Murrum, Soil or Sand from 0.0 mtr. to 1.50 mtr depth including lifting and laying as instructed
And
Item No.6 and 7:

Excavation of foundation in hard murrum from 0.0 mtr. to 3.00 mtr. Depth including lifting and laying in 90 mtr. Lead area as instructed
And
Item No.8
Excavation of Foundation in Soft Rock from 1.51 mtr. to 3.0 mtr depth including dewatering with lifting and laying in RMC limit as instructed

1.0 General:

1.1 Any soil which generally yields to the application of the pickaxes and shovels, phawaras rakes or any such ordinary excavation implement or organic soil, gravel, slit, sand turf lawn, clay, peat etc. fall under this category.

2.0 Cleaning the site:

2.1 The site on which the structure is to be built shall be cleared, and all obstructions, loose stone, materials and rubbish of all kind, bush, wood and trees shall be removed as directed. The materials so obtain shall be property of the government and shall be conveyed and stacked as directed within RMC limit. The roots of the tree coming in the sides shall be cut and coated with a asphalt.

2.2 The rate of site clearance is deemed to be included in the rate of earth work for which no extra will be paid.

3.0 Setting out:

After clearing the site, the center lines will be given by the engineer-in-charge. The contractor shall assume full responsibility for alignment, elevation and dimension and of each and all parts of the work. Contractor shall supply labors, materials, etc required for setting out the reference marks and bench marks and shall maintain them as long as required and directed.

4.0 Excavation:

The excavation in foundation shall be carried out in true line and level and shall have the width and depth as shown in the drawings or as directed. The contractor shall do the necessary shoring and strutting or providing necessary slopes to a safe angle, at his own cost. The bottom of the excavated area shall be leveled both longitudinally and transversely as directed by removing and watering as required. No earth filling will be allowed for bringing it to level, if by mistake or any other reason excavation is made deeper or wider than that shown on the plan or directed. The extra depth or width shall be made up with concrete of same proportion as specified for the foundation concrete at the cost of the contractor. The excavation upto 1.5 mt depth shall be measured under this item.

5.0 Disposal of the excavated stuff:

The excavated stuff of the selected type shall be used in filling the trenches and plinth or leveling the ground in layers including ramming and watering etc.

The balance of the excavated quantity shall be removed by the contractor from the site of work to a place as directed within RMC limit and all lift.

After refilling, surplus earth shall have to carted by the contractor within specified limit including loading transporting unloading spreading without any extra cost.

The surplus stuff shall be disposed off at the following sites as directed within the prescribed limits of Notification as directed by the engineering in charge.

It will be the sole responsible of agency to repair any extra paver / road damages at it's own cost. Excavated material / Bitumen surface shall be disposed at following site as Notified by RMC and as directed by the engineering in charge.

1. Beside Kotharia Police Station near Stone Quarry
2. All Quarry areas of Raiya Smart City
3. TP Scheme No.10, FP-87, Dhebar Road (South), Atika Area, Nr. PGVCL Office
4. TP Scheme No.23, FP-23, Nr. IOC Godown, Morbi Road
5. TP reservation plot at Samrat industrial Area, Bh. ST Workshop
6. TP Scheme No.9, FP-5, Nr. Raiyadhar Garbage Station
7. TP Scheme No.20, FP-35, Bh. Pradhuman Green
8. TP Scheme No.28 (Mavdi), FP-46/A, Nr. GETCO Circle
9. TP Scheme No.12, FP-38/A and 39/B, Nr. Lijjat Papad, Kothariya Nationla Highway

If the contractor fails to dispose the excavated stuff as specified, penalty will be imposed by Rajkot Municipal Corporation as per the Notification for C&D waste.

Mode of Measurement and Payment:

The measurement of excavation in trenches for foundation shall be made according to the sections of trenches shown on the drawing or as per sections given by the engineer-in-charge. No payment shall be made for surplus excavation made in excess of above requirement or due to stopping and sloping back as found necessary on account of conditions of soil and requirements of safety.

The rate shall be for a unit of one cubic Meter.

Item No.9:

Excavation of Foundation in Hard Rock with Breaker / Blasting / Gann from 0.0 mtr. to 1.50 mtr depth including lifting and laying as instructed

1.0. Workmanship

1.1. The relevant specification of item No.1 shall be followed except that the excavation for foundation work shall be carried out in soft/hard rock.

1.2. Excavation shall be done by blasting to the dimensions shown in the

drawings or as directed. The blasting shall be carried out only with written permission of the Engineer-in-charge. All the laws, regulations etc,- pertaining to the precautions, acquisition, transport, landing and use of explosive shall be rigidly followed. The Magazine for the storage for the explosive shall be built to the design and specifications of explosive authority and located at the approved site No unauthorised persons shall be admitted into the magazine and when not in use it shall be kept securely locked No matches or inflammable materials shall be allowed in Magazine. The Magazine shall have an-effective lightning conductor. The rules of explosive 1940 revised from time to time shall be followed strictly for obtaining starting, handling, undertaking blasting work.

1.3. The contractor shall be responsible for damage to property, workmen public due to any accident due to use of explosives and operations

1.4. Precautions

1.4.1. The blasting operation shall remain in charge of competent and experienced supervisor and workmen who are thoroughly acquainted with the detail of handling explosive and blasting operations. The blasting shall be carried our during fixed hours of the day, preferably during the mid-day lunch hours or at the close of the work as ordered in writing by the Engineer-m-charge. The hours of blasting shall be notified in advance to the people in the vicinity. All the charges shall be prepared by the man in charge only.

1.4.2. Red danger flags shall be displayed prominently in all direction during the blasting operations.

1.4.3. People except those who actually light the fuse shall be prohibited from entering into this area. The flags shall be stationed at 200 m. from the firing-site in all directions and all persons including workmen shall be excluded form the flagged area at least 1.0 minutes before the firing warning whistle being sounded for this purpose

1.4.4. During excavation in rock by blasting, the lowest 15 cm. of stratus shall be blasted with light charge so as not to shatter or weaken the underlying rock on which the foundation will be actually laid If excavation in rock in done to large widths and length than those shown on the drawings or as directed, no payment shall be made for such over break. If excavation is done to depths greater than shown on the drawings or directed, excess depth shall be made up with foundation grade concrete as directed at the contractor's cost.

1.4.5. The charged hole shall be drilled to the required depth and in suitable places when blasting is done with powder, the fuse cut to the required length shall be inserted in the holes and the powder dropped in. The powder shall be gently tamped with copper rod with rounded ends. The explosive powder shall then be covered with trapping materials which shall be tamped lightly out firmly. When blasting is done with dynamite and other high explosive, dynamite cartridges shall be prepared by inserting the square cut ends of fuse into the detonator, and finished with dippers at the open ends The detonator should be gently pushed into the detonator and finished with dippers at the opened ends. The detonator should be gently pushed explosive. Bore holes shall be of such size that the cartridges can be easily passed down. The holes shall be cleared of all debris and explosive inserted The space for about 20 cams, above the charge shall then be gently filled with dry clay pressed home and rest of

tamping is with firmed any convenient materials gently packed with a wooden cover.

1.4.6. At a time not more than 10 such charge shall be prepared and fired. The man in charge shall blow a whistle in a recognised manner for cautioning the people. All the people shall then be required to move to number of explosions. He shall satisfy himself that all the charges have been exploded before allowing the workmen to go to the work site.

1.4.7. The contractor shall be fully responsible to strictly follow the prevailing rules and procedures regarding blasting procedures

1.5. Misfire

1.5.1. In case of a misfire the following procedure shall be observed :

1.5.2. Sufficient time shall be allowed to account for the delayed blast. The man in charge shall inspect all the charges and determine the missed charge.

1.5.3. If it is the blasting powder charge it shall be completely flooded with water. A new hole shall be drilled at, about 45 cm. from the old and fired. This should blast the old charge Should^ it not blast the old charge, the procedure shall be repeated till the old charge is blasted.

1.5.4. In case of charge of gelatins, dynamite etc, the man in charge shall gently remove the tamping and the primer with detonator and primer shall then be used to blast the charge. Alternatively the hole may be cleared of one foot of tamping and the direction then ascertained by placing a stick in the hole Another hole may then be drilled 15 cm away and parallel to it. The man in charge shall report to the office all cased of misfire and cause of the same and what steps ware taken in connection therewith.

1.5.6. If a misfire has been found to he due to defective or dynamite, the whole quantity in the box from which defective article was taken must be sent to authority as directed for inspection to ascertain whether all the remaining materials in the box are also defective or not.

1.6. Accidents:

1.6.1. The contractor shall be solely responsible for any accident during the entire procedure of handling explosive and blasting and shall pay necessary compensation to persons affected or damage to lands or property etc, due to the blasting, without extra claims on the department.

1.7. Account:

1.7.1. A careful and day to day account of explosives shall be maintained by the contractor in an approved manner and shall be open to inspection of the Engineer-in charge Surprise visits may also be paid by the Engineer-in-charge to the storage and in case of any unaccountable shortage or unsatisfactory accounting, the contractor shall be liable to be penalised by forfeiture of part or whole of his Security Deposit or by cancellation of tender in which case he shall not be entitled for any compensation .-

1.8. Disposal of Excavated Materials:

1.8.1 No materials excavated from foundation trenches of whatever kind they may be, are to be placed even temporarily nearer than 1.5 m. or distance prescribed by the Engineer from the outer edge of excavation. All materials excavated shall remain the property of Government. Rate for excavation includes sorting out of useful materials and stacking them separately as directed within the specific lead. Materials suitable and

useful for backfilling or other use shall be stacked in convenient places but not in such a way as to obstruct free movement of men, animals and vehicles or encroach upon the area required for constructional purpose. The site shall be left clean of all debris on completion.

1.8.2. Disposal of excavated materials is subject to the following:
Unsuitable materials obtained from clearing site and excavation shall be disposed off within a lead of 50 meters as directed. Useful materials obtained from clearing site and excavation shall be stacked within a lead of 50 M beyond the building areas is directed. Materials suitable for back-filling shall be stacked at convenient places within a lead of 50 M. from the structure for reuse. Useful stones from rock excavation shall be stacked neatly within a lead of 50 M. and will be allowed to be used by the contractor on payment at rates laid down n the contract or if not so laid down, at scheduled rates of the Division or at a mutually agreed rates if there are no such rates in the schedule of rates.

1.8.3.If surplus materials are required to be conveyed beyond 50 M, conveyance will be paid for under a separate item

2.0. Mode of measurements & Payment

2.1. The work shall be measured for the work limited to the dimensions shown on drawings or directed Excavation to dimension in excess of the above will not be measured or paid for and if so ordered by the Engineer the contractor shall have to fill up the excess depth with cement concrete specified for foundation without extra payment.

2.2. Driving of sounding bars, drill holes to explore the nature of substratum up to a total length of meter distributed in 2 or 3 places in each foundation if necessary, will be considered incidental work and will not be paid for separately.

2.3. Removal of slips and blows in the foundation trenches will not be measured or paid for.

2.4. if it is necessary in the opinion of the Engineer-in-charge to carry foundation below the levels shown on the plans, the excavations for the 1.5 M of addition depth will be included in the quantity for the particular classification and will be paid for as extra at rate to be decided under the general conditions of contract unless, the contractor is willing to accept payment as tendered rates.

2.5. The rate shad be for a unit of one cubic meter.

Item No.10:
Foundation filling with CC work in proportion of 1:3:6 using 1.5 cm to 2.0 cm aggregate including Ramming, Curing etc.

1.0. Materials

1.1 Water shall conform to M-1. Cement shall conform shall conform to M-3. Sand shall conform to M-6. Stones aggregate 20 mm. nominal size shall conform to M- 12.

2.0 Workmanship

2.1 General

2.1.1 Before starting concrete the bed of foundation trenches shall be cleared of all loose materials, leveled, watered and rammed as directed.

2.2 Proportion of Mix

2.2.1 The proportion of cement, sand and coarse aggregate shall be one part of cement, 3 parts of sand and 6 parts of stone aggregate; and shall be measured by volume.

2.3 Mixing

2.3.1 The concrete shall he mixed in a mechanical mixer at the site of work. Hand mixing may however be allowed for smaller quantity of work if approved by the Engineer-in-charge. When hacnd mixing is permitted by the Engineer-in-charge in case of break-down of machineries and in the interest of the work, it shall be carried out on a water tight platform and care shall be taken to ensure that mixing is continued until the mass is uniform in colour and consistency. However in such cases 10% more cement than otherwise required shall have to be used without any extra cost. The mixing in mechanical mixer shall be done for a period 1½ to 2 minutes. The quantity of water shall be just sufficient to produce a. dense concrete of required workability for the purpose.

2.4 Transporting & placing the concrete.

2.4.1 The concrete shall, be handed from the place of mixing to the final position in not more than 15 minute by the method as directed and shall be placed into its final position, compacted and finished within 30 minutes of mixing with water i.e. before the setting commences.

2.4.1 The concrete shall be laid in layers of 15 cms to 20 cms.

2.5 Compacting:

2.5.1 The concrete shall be rammed with heavy iron rammers and rapidly to get the required compaction and to allow all the interstices to be filled with mortar.

2.6 Curing

2.6.1 After the final set, the concrete shall be kept continuously wet if required by ponding for a period of not less then 7 days from the date of placement.

2.7 Mode of measurements and payment:

2.7.1 The concrete shall he measured for its length, breadth, and depth, limiting dimensions to those specified on plan or as directed.

2.7.2 The rate shall be for a unit of one cubic meter.

Item No.11:
Foundation filling with CC work in proportion of 1:2:4 using 1.5 cm to 2.0 cm aggregate including Ramming, Curing etc.

1.0. Materials

1.1 Water shall conform to M-1. Cement shall conform shall conform to M-3. Sand shall conform to M-6. Stones aggregate 20 mm. nominal size shall conform to M- 12.

3.0 Workmanship

2.1 General

2.1.1 Before starting concrete the bed of foundation trenches shall be cleared of all loose materials, leveled, watered and rammed as directed.

2.5 Proportion of Mix

2.2.1 The proportion of cement, sand and coarse aggregate shall be one part of cement, 2 parts of sand and 4 parts of stone aggregate; and shall be measured by volume.

2.6 Mixing

2.3.1 The concrete shall he mixed in a mechanical mixer at the site of work. Hand mixing may however be allowed for smaller quantity of work if approved by the Engineer-in-charge. When hacnd mixing is permitted by the Engineer-in-charge in case of break-down of machineries and in the interest of the work, it shall be carried out on a water tight platform and care shall be taken to ensure that mixing is continued until the mass is uniform in colour and consistency. However in such cases 10% more cement than otherwise required shall have to be used without any extra cost. The mixing in mechanical mixer shall be done for a period 1½ to 2 minutes. The quantity of water shall be just sufficient to produce a. dense concrete of required workability for the purpose.

2.7 Transporting & placing the concrete.

2.4.1 The concrete shall, be handed from the place of mixing to the final position in not more than 15 minute by the method as directed and shall be placed into its final position, compacted and finished within 30 minutes of mixing with water i.e. before the setting commences.

2.7.1 The concrete shall be laid in layers of 15 cms to 20 cms.

2.8 Compacting:

2.5.1 The concrete shall be rammed with heavy iron rammers and rapidly to get the required compaction and to allow all the interstices to be filled with mortar.

2.9 Curing

2.6.1 After the final set, the concrete shall be kept continuously wet if required by ponding for a period of not less then 7 days from the date of placement.

2.10 Mode of measurements and payment:

2.7.1 The concrete shall he measured for its length, breadth, and depth, limiting dimensions to those specified on plan or as directed.

2.7.3 The rate shall be for a unit of one cubic meter.

Item No.12:
Rolling and consolidation water bound macadam (except latrite and kankar) including watering. not exceeding 150 mm thickness main layer including binding material including filling in depression which occur during the process (B) with roller 8 tonne and not exceeding 12 ton

Immediately following the spreading of the coarse aggregates rolling shall be started with three wheeled roller of 8 to 10 ton capacity. The rolling and with watering includes of work for two separate layer of mtalling.

Except on super elevated portions where the rolling shall proceed from inner edge to outer, rolling shall from the edges gradually progressing towards the center. First the edges shall be compacted with roller running forward and backward. The roller shall then more inwards parallel to center line of the road in successive passes uniformly lapping preceding tracks by at least one half the width. The total work includes four times of rolling in two layers of metalling.

Rolling shall continue until the aggregate is thoroughly keyed and creeping of the aggregate ahead of the roller is no longer visible.

The rolled surface shall be checked transversely and longitudinally with templates and any irregularities corrected by loosening the surface, adding or removing necessary amount of aggregate and rolling until the entire surface conforms to desired camber and grade.

The bondage material where it is to be used shall be applied successively in two or more than layers of a slow and uniform rate after each application, the surface shall be copiously sprinkled with water, which water shall be applied to the wheels of rollers if necessary to wash down the binding material sticking to them. These operations shall continue until the resulting slurry after filling of voids forms a wave ahead of the moving roller.

After the final compaction of water bound macadam course, the load shall be allowed to any overnight. Next morning hungry spots shall be filled with screenings of binding materials as directed lightly sprinkled with water if necessary and rolled.

Payment will be made at per square meter basis of the finished work for single layer and shall include water, rent of machinery, cost of fuel, wages of drivers and cleaners and murrum bund etc. for both.

Item No.13:
Removal of Excavated Stuff and Laying within the sites specified in Notification as directed by Engineer-in-Charge

Surplus earth shall have to cart by the contractor within specified limit including loading, transporting, unloading, spreading, etc.

The surplus stuff shall be disposed off at the following sites as directed within the prescribed limits of Notification as directed by the engineering in charge.

1. Beside Kotharia Police Station near Stone Quarry
2. All Quarry areas of Raiya Smart City
3. TP Scheme No.10, FP-87, Dhebar Road (South), Atika Area, Nr. PGVCL Office
4. TP Scheme No.23, FP-23, Nr. IOC Godown, Morbi Road
5. TP reservation plot at Samrat industrial Area, Bh. ST Workshop
6. TP Scheme No.9, FP-5, Nr. Raiyadhar Garbage Station
7. TP Scheme No.20, FP-35, Bh. Pradhuman Green
8. TP Scheme No.28 (Mavdi), FP-46/A, Nr. GETCO Circle
9. TP Scheme No.12, FP-38/A and 39/B, Nr. Lijjat Papad, Kothariya National Highway

If the contractor fails to dispose the excavated stuff as specified, penalty will be imposed by Rajkot Municipal Corporation as per the Notification for C&D waste.

The excavated material of black cotton soil should be stacked at the location specified by the engineer in charge.

Mode of Measurement and Payment:
The measurement of excavation in trenches for foundation shall be made according to the sections of trenches shown on the drawing or as per sections given by the engineer-in-charge.

No payment shall be made for surplus excavation made in excess of above requirement or due to stopping and sloping back as found necessary on account of conditions of soil and requirements of safety.

The rate shall be for a unit of one cubic Meter.

Item No.14:
Fixing of CC Precast Road Divider stone 12" x 10" x 7" including required diggging, Cementing joints with material and labour (with backing)
And
Item No.15
Construction of cement concrete kerb with top and bottom width 120 and 220mm respectively, 400mm high in M20 grade. Kerb stone laid with kerb laying machine (L-Section)

Rajkot Municipal Corporation will provide cement concrete blocks prepared at Departmental Production Unit of Rajkot Municipal Corporation as per specified

rate. Above CC Block is to be collected by the agency at their cost and transport it to the required site. No transportation will be paid. If Divider Block is not available in RMC Production Unit then the contractor shall have to purchase the same from the market. Required excavation work shall be carried out by the agency on the paver road or conventional asphalt road as per depth and width as directed by Site Engineer. No extra payment will be made. The excavated stuff shall be disposed off as directed by the site incharge. Lime mortar of 1 part lime and 4 part of sand shall be well mixed and laid in minimum 50 mm thickness and C C precast rubber mould blocks shall be laid as per proper alignment keeping in mind the projection of tiles laying bed in the inner side of the block. Cement mortar of 1:6 is required to be used for 18 mm vatta and aesthetic groove shall be made as directed between the two blocks with proper vatta along with cement paste with required tamping etc. complete as directed by Site Engineer. Minimum 75 mm x 75 mm triangular shaped lodhiya shall be casted with 1:2:4 cement concrete on both outer side of the block. The portion between the two blocks below the tile flooring level shall be filled with quality hard murrum and shall be watered for achieving proper compaction as directed and shall be tampered properly.

Cement concrete blocks shall be purchased from Corporation Departmental Production Unit by deduction from bill amount. If the material is supplied from RMC Store, Rajkot Municipal Corporation will be deduct the amount for such supply as per the current S.O.R. rate of Rajkot Municipal Corporation. Excavated stuff shall be removed and spread as directed and no extra cost will be given.

The required stone shall either be supplied by Store or if required, as and when it is to be purchased from market shall be got approved from RMC. The stone shall be of good in quality if it is purchased from market and of sharpened edge and of sufficient crushing strength as per I.S. The testing shall be carried out at the cost of the bidder

Mode of measurement shall be as per unit of one number

Item No.17, 18, 19 and 20:
Filling of Plinth in layers of 0.23 m thick including murrum and sprinkling of water, compaction etc. complete
And
Filling of Plinth with using excavated useful material partly and remaining murrum to be brought from out side in layer of 0.23 m thick including murrum and sprinkling of water, compaction etc. complete
And
Black cotton Soil filling
And
Rubble Stone filling with 33% Murrum in specified thickness with watering, compaction etc. complete

1.0 Materials :

1.1 Useful material stacked during excavation to be used partly for filling. Remaining Murrum shall be clean of good binding quality, and of approved quality obtained from approved pots/quarries of disintegrated rocks which contain silicons materials and natural mixture of clay of calcarions origin. The size of murrum shall not be more than 20 mm. The proportion of useful material and murrum shall be as per the instructions from engineer-in-charge.

2.0 Workmanship :

2.1 The murrum or selected soil shall be filled in foundation and plinth in 20 cms. layers including consolidating, ramming, watering, dressing etc. complete.

3.0 Mode of measurement and payment:

3.1 The relevant specifications of the item shall be followed.

3.2 The rate includes cost of collecting and carting murrum/or selected earth of approved quality with all lead and labour required for filling in trenches and plinth.

3.3 The rate shall be for a unit of one cubic metre.

Item No.16:
Supply and fixing of K-HB Gray SL VWP 600*300*100mm with mimimum average 2.5Mpa bending strenth cement mortar bonding on joints in proportion 1:3 with curing etc. complete. Like equivalent of VYARA tiles pvt. Ltd and etc.

The kerb blocks must be made via Vacuum Wet Pressed methods and should be of sound quality of the specified make and within approved time period of manufacturing. The sample shall be approved by the engineer in charge which shall be benchmark of quality and installation. The fixing work shall be free from undulation and using 1:3 cement mortar with finishing and cleaning complete as per the instructions of engineer in charge.

Mode of Measurement: Installed numbers of VWP pieces shall be considered for measurements.

Item No.21:
Brick Work

Materials:
Water shall conform to M-1.

Cement:
Cement shall conform to M-3.

Brick:
The bricks shall be hard or machine moulded and made from suitable soils and

burnt. They shall be free from cracks and flaws and nodules of free lime. They shall have smooth rectangular faces with sharp corners and shall be of uniform colors.

The bricks shall be moulded with a frog of 100 mm x 40 mm and 10 mm to 20 mm deep on one of its flat sides. The bricks shall not break when thrown on the ground from a height of 600 mm.
The size of modular bricks shall be 190 mm x 90 mm.

The size of the conventional bricks shall be as under:
(9" x 4.3/8" x 2,3/4") 225 x 110 x 75 mm

Only bricks of one standard size shall be used in one work. The following tolerances shall be permitted in the conventional size adopted in a particular work.

Length ±1/8" (3mm) width : ± 1/16" (1.5mm)
Height: ± 1/16" (1.5 mm)

The crushing strength of the bricks shall not be less than 35 kg/sq.cm. The average water absorption shall not be more than 20 percent by weight. Necessary tests for crushing strength and water absorption etc., shall be carried out as per IS: 3495 (Part I to IV) - latest edition.

Workmanship:
i) Proportion:
The proportion of the cement mortar shall be 1:6 (1-Cement, 6-Fine sand) by volume.

Wetting of bricks:
The bricks required for masonry shall be thoroughly wetted with clean water for about two hours before use or as directed. The cessation of bubbles, when the bricks are wetted with water is an indication of thorough wetting of bricks.

Laying:
Bricks shall be laid in English bond unless directed otherwise. Half or cut bricks shall not be used except when necessary to complete the bond; closer in such case shall be cut to required size and used near the ends of walls.

A layer of mortar shall be spread on full width for suitable length of the lower coarse. Each brick shall first be properly bedded and set frame by gently tapping with handle of trowel or wooden mallet. It's inside face shall be flushed with mortar before the next brick is laid and pressed against it. On completion of coarse the vertical joints shall be fully filled from the top with mortar.

The work shall be taken up truly in plumb. All coarses shall be laid truly horizontal and all vertical joint shall be truly vertical. Vertical joints in alternate coarse shall generally be directly one over the other. the thickness of brick coarse shall be kept uniform.

The brick shall be laid with frog upwards. A set of tools comprising of wooden

straight edges, mason's spirit level, square half meter rub, and pins, string and plumb shall be kept on site of work for frequent checking during the progress of work.

Both the faces of walls of thickness greater than 23 cms shall be kept in proper place. All the connected brick work shall be kept not more than one meter over the rest of the work. Where this is not possible, the work shall be raked back according to bond (and not left toothed) at an angle not steeper than 45 degrees.

All fixtures, pipes, outlets of water, hold fasts of doors and windows etc. which are required to be built in wall shall be embedded in cement mortar.

Joints:
Bricks shall be so laid that all joints are quite flush with mortar. Thickness of joints shall not expose 12 mm. The face joints shall be raked out as directed by raking tools daily during the progress of work when the mortar is still green so as to provide key for plaster or pointing to done.

The face of brick shall be cleaned the very day on which the work is laid and all mortar dropping removed.

Curing:
Green work shall be protected from rain suitably. Masonry work shall be kept moist on all the faces for a period of seven days. The top of masonry work shall be kept well wetted at the close of the day.

Proportion of foundation bed:
If the foundation is to be laid directly on the excavated bed, the bed shall be leveled, cleared of all loose materials, cleaned and wetted before string masonry is to be laid on concrete footing, the top of concrete shall be cleaned and moistened. The contractor shall obtain the engineer's approval for the foundation bed before foundation masonry is started. When precast flooring is to be provided flush with the top of plinth, the inside plinth offset shall be kept lower than the outside plinth top by the thickness of the following.

Mode of measurement & Payment:
The measurement of this item shall be taken for the brick masonry fully completed in foundation upto plinth. The limiting dimensions not exceeding those shown on the plains or as directed shall be final. Battered tapered and curved position shall be measured net.

Item No.22:
Brick Masonry Partition Wall in Cement:Mortar 1:4 (3.5 to 4.5 inch thick) Half brick masonry in common burnt clay building brick having crushing strength not less than 35 kg/ sq.cm. in cement mortar 1:4 (1 cement: 4 coarse sand) for super-structure above plinth level upto floor two level with conventional bricks

1. Materials
Bricks shall conform to M-15. Water shall conform to M-1. Cement shall conform

to M-3. Sand shall conform to M-6. Cement mortar shall conform to M-11.

2. Workmanship
The relevant specifications be followed for bricks, wetting, laying of bricks, joints, curing, shall conform to Item No.21 expect that the bricks to be used shall be conventional bricks instead of modular bricks.

Cement mortar used in masonry work shall be in proportion of 1 part of cement and 4 parts of sand by volume.

All bricks shall be laid streacher wise, breaking joints with those in the upper and lower courses. The wall shall be taken truly plumb. All courses shall be laid truly horizontal and all vertical joints shall be truly vertical. The bricks shall be laid with frogs upwards. A set of masons tools shall be maintained on work as required for frequent checking.

3. Mode of measurements and payment
The limiting dimensions shall not exceed those shown in the plan or as directed. Any work done extra over specified dimensions shall be ignored.

The rate shall be for a unit of one square meter.

Item No.23:
Groove cutting in Brick Masonry

Groove work is to be carried out as per given drawing details by engineer-in-charge. The work is to be carried out with cutter machine.

The rate shall be for a unit of one Running Meter.

Item No.24, 58 to 73, 75 and 76:
Providing and laying cement concrete in M-20 or 1: 2 : 4 in nominal mix (1 cement: 2 coarse sand : 4 graded stone aggregate 20 m m. nominal size) curing complete excluding reinforcement for reinforced work in (B) Coping, Slab
And
RCC work with varing coat, curring, rough finishing etc. complete in the proportion of M-20
And
Providing and laying cement concrete in M-20 or 1: 1 ½ : 3 in nominal mix (1 cement: 1 ½ coarse sand : 3 graded stone aggregate 20 m m. nominal size) curing complete excluding reinforcement for reinforced work in (C) Beam
And
Providing and laying cement concrete in M-25 or 1: 1 : 2 in nominal mix (1 cement: 1 coarse sand : 2 graded stone aggregate 20 m m. nominal size) curing complete excluding reinforcement for reinforced work in (A) Foundations, footing base, of columns and mass concrete, (C) Slabs, landings shelves, balconies, lintels, chhajja, beams, girders and

cantilever (D) Columns, pillars, posts, and struts (E) Stair case (K) Vertical and horizontal fins upto floor two level including form work.

1.0 Materials:

Water shall conform to M-1, cement shall conform to M-2, Sand shall conform to M-4, Grit shall conform to M-8. Graded stone aggregate 20 mm, nominal size shall conform to M-12.

2.0 General:

2.1 The concrete mix is not required to be designed by preliminary tests. The proportion of concrete mix shall be 1:1$^1/_2$:3 (1 Cement: $1^1/_2$ coarse sand: 3 graded stone aggregate) 20 mm nominal size) by volume.
Concrete work shall have exposed concrete surface or as specified in the item.

2.2 The designation ordinary M-100, M-150, M-200, M-250 specified as per IS correspond approximately to 1:3:6, 1:2:4, 1:1$^1/_2$:3 and 1:1:2 nominal mix of ordinary concrete by volume respectively.

2.3 The ingredients required for ordinary concrete containing one bag of cement of 50 Kg by weight (0.0342 Cu.M) for different proportions of mix shall be as under:

Grade of concrete	Total quantity of dry aggregate by volume per 50 kgs of cement to be taken as the sum of individual volume of fine and coarse aggregates, max.	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 Kgs of cement maximum
M-100 (1:3:6) M-150 (1:2:4) M-200 (1:1$^1/_2$:3) M-250 (1:1:2)	300 Litres 220 Litres 160 Litres 100 Litres	Generally 1.2 for fine aggregate to coarse aggregate by volume but subject to an upper limit of 1:1.1/2 and lower limit 1:3	34 Litres 32 Litres 30 Litres 27 Litres

2.4 The water cement ratio shall not be more than specified in the above table. The cement concrete of the mix specified in the Table shall be increased if the quantity of water in mix has to be increased to overcome the difficulties of placements and compaction so that water cement ratio specified on the table is not exceeded.

2.5 Workability of the concrete shall be controlled by maintaining a water cement ratio that is found to give a concrete mix which is just sufficient wet to be placed and compacted without difficulty with the means available.

2.6 The maximum size of coarse aggregate shall be as large as possible within the limits specified but in no case greater than one fourth of minimum thickness of the member, provided that the concrete can be placed without difficulty so as to surround all reinforcement thoroughly and to fill

the corners of the form.

2.7. For reinforced concrete work, coarse aggregates having a nominal size of 20 mm, are generally considered satisfactory.

2.8 For heavily reinforced concrete members as in the case of ribs main beams, the nominal maximum size of coarse aggregate should usually be restricted to 5 mm, less than the minimum the distance between the main bars, or 5 mm less than the minimum cover to the reinform or whichever is smaller.

2.9 Where the reinforcement is widely spaced as in solid slabs, limitations of size of the aggregate may not be so important, and the nominal maximum size may sometimes be as greater as or greater than the minimum cover.

2.10 Admixture may be used in concrete only with approval of engineer-in-charge based upon the evidence that with the passage of time, neither the compressive strength of concrete is reduced nor are other requisite qualities of concrete and steel impaired by the use of such admixtures.

3.0 Workmanship:

3.1 Proportioning:

Proportioning shall be done by volume, except cement which shall be measured in terms of bags of 50 kg. weight the volume of one such bag being taken as 0.0342 cu.metre. Boxes of suitable size shall be used for measuring sand aggregate. the size of boxes (internal) shall be 35 x 25 cms, and 40 cms deep while measuring the aggregate and sand the boxes shall be filled without shaking ramming or hammering. The proportioning of sand shall be on the basis of its dry volume and in case of damp sand, allowances for bulkage shall be made.

3.2 Mixing:

3.2.1 For all work, concrete shall be mixed in a mechanical mixer which along with other accessories shall be kept in first class working condition and so maintained throughout the construction. Measured quantity of aggregate, sand and cement required for each batch shall be poured into the drum of the mechanical mixer while it is continuously running. After about half a minute of dry mixing measured quantity of water required for each batch of concrete mix shall be added gradually and mixing continued for another one and a half minute. Mixing shall be continued till materials are uniformly distributed and uniform color of the entire mass is obtained and each individual particle of the coarse aggregate shows complete coating of mortar containing its proportionate amount of cement. In no case shall the mixing be done for less than 2 minutes after all ingredients have been put into the mixer.

3.2.2 When hand mixing is permitted by the engineer-in-charge for small jobs or for certain other reasons, it shall be done on the smooth water tight platform large enough to allow efficient turning over the ingredients of concrete before and after adding water. Mixing platform shall be so arranged that no foreign material gets mixed with concrete nor does the mixing water flow out. Cement in required number of bags shall be placed

in a uniform layer on top of the measured quantity of fine and coarse aggregate, which shall also be spread in a layer of uniform thickness on the mixing platform. Dry coarse and fine aggregate and cement shall then be mixed thoroughly by turning over to get a mixture to uniform color. Specified quantity of water shall then be added gradually through a rose can and the mass turned over till a mix of required consistency is obtained. In hand mixing quantity of cement shall be increased by 10 percent above that specified.

3.2.3 Mixers which have been out of use for more than 30 minutes shall be thorough cleaned before putting in a new batch. Unless otherwise agreed to by the engineer-in-charge the first batch of concrete form the mixture shall contain only two thirds of normal quantity of coarse aggregate. Mixing plant shall be thoroughly cleaned before changing from one type of cement to another.

3.3 Consistency:

3.3.1 The degree of consistency which shall depend upon the nature of the work and the methods of vibration of concrete, shall be determined by regular slump tests in accordance with IS 1199 - Latest edition. The slump of 10 mm to 25 mm shall be adopted when vibrators are used and 80 mm when vibrators are not used.

3.4 Inspection:

3.4.1 Contractor shall give the engineer-in-charge due notice before placing any concrete in the forms to permit him to inspect and accept the false work and forms as to their strength, alignment, and general fineness but such inspection shall not relieve the contractor of his responsibility for the safety of men, machinery, materials and for results obtained. Immediately before concreting, all forms shall be thoroughly cleaned.

3.4.2 Centering design and its erection shall be got approved from the engineer-in-charge. One carpenter with helper shall invariably kept present throughout the period of concreting. Movement of labor and other persons shall be totally prohibited for reinforcement laid in position. For access to different parts suitable mobile platforms shall be provided so that steel reinforcement in position is not disturbed. For ensuring proper cover, mortar blocks of suitable size shall be cast and tied to the reinforcement. Timber, kapachi or metal pieces shall not be used for this purpose.

3.5. Transporting and Laying:

3.5.1 The method of transporting and placing concrete shall be as approved. Concrete shall be so transported and placed that no contamination, segregation or loss of its constituent material takes place. All form work shall be cleaned and made free from standing water dust, show or ice immediately before placing of concrete. No concrete shall be placed in any part of the structure until the approval of the engineer-in-charge has been obtained.

3.5.2 Concreting shall proceed continuously over the area between construction joints. Fresh concrete shall not be placed against concrete which has been in position for more than 30 minutes unless a proper contraction joint is

formed. Concrete shall be compacted in its final position within 30 minutes of its discharge from the mixer. Expert where otherwise agreed to by the engineer-in-charge concrete shall be deposited in horizontal layers to a compacted depth of not more than 0.45 meter when internal vibrators are used and not exceeding 0.30 meter in all other cases.

3.5.3 Unless otherwise agreed to by the engineer-in-charge, concrete shall not be dropped in to place from a height exceeding 2 meters. When trunking or chutes are used they shall be kept close and used in such a way as to avoid segregation. When concreting has to be resumed on a surface which has hardened it shall be roughened swept clean, thoroughly wetted and covered with a 13 mm thick layer of mortar composed of cement and sand in the same ratio as in the concrete mix itself. This 13 mm layer of mortar shall be freshly mixed and placed immediately before placing of new concrete. Where concrete has not fully hardened all laitance shall be removed by scrubbing the wet surface with wire of bristle brushes care being taken to avoid dislodgement of any particles of coarse aggregate. The surface shall then be thoroughly wetted all free water removed and then coated with neat cement grout the first layer of concrete to be placed on this surface shall not exceed 150 mm in thickness and shall be well rammed against old work particular attention being given to corners and close spots.

3.5.4 All concrete shall be compacted to produce a dense homogenous mass with the assistance of vibrators unless otherwise permitted by the engineer-in-charge for exceptional cases such as concreting under water where vibrators cannot be used. Sufficient vibrators in serviceable condition shall be kept at site so that spare equipment is always available in the event of breakdowns. Concrete shall be judge to be compacted when the mortar fills the spaces between the coarse aggregate and begins to cream up to form an even surface mixture. During compaction, it shall be observed that needle vibrators are not applied on reinforcement which is likely to destroy the bond between concrete and reinforcement.

3.6 Curing:

Immediately after compaction, concrete shall be protected from weather including rain running water shocks vibration traffic rapid temperature changes frost and drying out process. It shall be covered with wet sacking hassian or other similar absorbent material approved soon after the initial set and shall be kept continuously wet for a period of not less than 14 days from the date of placement. Masonary work over foundation concrete may be started after 48 hours of its laying but curing of concrete shall be continued for a minimum period of 14 days.

3.7 Sampling and testing of concrete:

3.7.1. Samples from fresh concrete shall be taken as per IS 1199 - Latest edition, and cubes shall be made cured and tested at 7 days of 28 days as per requirements in accordance with IS 516 - Latest edition. A random sampling procedure shall be adopted to ensure that each concrete batch shall have a reasonable chance of being tested i.e. the sampling should be spread over the entire period of concreting and cover all mixing units. The minimum frequency of sampling of concrete of each grade shall be in

accordance with following:

Quantity of concrete in the work	No.of samples	Quantity of concrete in the work.	No.of samples
1-5 cmt	1	16-30 cmt	3
6-15 cmt	2	31-50 cmt	4
51 and above	4 ± one additional for each additional 50 m or part thereof		

NOTE:- At least one sample shall be taken from each shift. Ten test specimens shall be made from each sample five for testing at 7 days and the remaining five at 28 days. The samples of concrete shall be taken on each days of the concreting as per above frequency. The number of specimens may be suitably increased as deemed necessary by the engineer-in-charge when procedure of tests given above reveals a poor quality of concrete and in other special cases.

3.7.2. The average strength of the group of cubes cast for each day shall not be less than the specified cube strength of 150 Kg/Cm^2 at 28 days. 20% of the cubes cast for each day may have value less than the specified strength. Such concrete shall be classified as belonging to the appropriate lower grade. Concrete made in accordance with the proportion given for a particular grade shall not, however, be placed in a higher grade on the ground that the test strength are higher than the minimum specified.

3.8 Stripping:

3.8.1. The engineer-in-charge shall be informed in advance by the contractor of his intention to strike the form work. While fixing the time for removal of form, due consideration shall be given to local conditions, character of the structure, the weather and other conditions that influence the setting of concrete and of the materials used in the mix. In normal circumstances (generally where temperatures are above 20^{0}C) and where ordinary concrete is used, forms may be struck after expiry of periods specified below for respective item of work.

Stripping Time:

In normal circumstances and where ordinary cement is used forms may be struck after expiry of following periods:

a) Side of walls, columns and vertical faces of beams - 24 to 48 hours
b) Beam softish (props. left under) - 7 days
c) Removal of props slabs:
   i) Slabs spanning upto 4.5 m - 7 days
   ii) Spanning over 4.5 m - 14 days
d) Removal of props for beams and arches
   i) Spanning upto 6 m - 14 days
   ii) Spanning over 6 m - 21 days

3.8.2. All form work shall be removed without causing any shock or vibration as would damage the concrete. Before the soffit and struts and struts are removed, the concrete surface shall be gradually exposed, where

necessary in order to ascertain that concrete has sufficiently hardened. Centering shall be gradually and uniformly lowered in such a manner as to permit the concrete to take stresses due to its own weight uniformly and gradually. Where internal metal ties are permitted, they or their removable parts shall be extracted without causing any damage to the concrete and remaining holes filled with mortar. No permanently embedded metal part shall have less 25 mm cover to the finished concrete surface. Where it is intended to re-use the form work, it shall be cleaned and made good to the satisfaction of the engineer-in-charge. After removal of work and shuttering, the ADDL. CITY ENGINEER shall inspect the work and satisfy by random checks that concrete produced is of good quality.

3.8.3. Immediately after the removal of forms, all exposed bolts etc. passing through the cement concrete member and used for shuttering or any other purpose shall be cut inside the cement concrete member to a depth of at least 25 m below the surface of the concrete and the resulting holes be filled by cement mortar. All fins cussed by form joints, all cavities produced by the removal of form ties and all other holes and depressions, honeycomb spots, broken edges or corners and other defects, shall be thoroughly cleaned, saturated with water and carefully pointed and rendered true with mortar of cement and fine aggregate mixed in proportions used in the grade of concrete that is being finished and of as dry consistency as is possible to use. Considerable pressure shall be applied in filling and pointing to ensure through filling in all voids. Surfaces which are pointed shall be kept moist for a period of 24 hours. If pockets / honeycombs in the opinion of the engineer-in-charge are of such an extent or character as to affect the strength of the structure materially or to endanger the life of the steel reinforcement, he may declare the concrete defective and require the removal and replacement of the portions of structure affected.

(a) the bars shall be kept in position by the following methods :

(i) In case of beam and slab construction, sufficient number of precast cover blocks in cement mortar 1 :2 (1 cement : 2 coarse sand) about 4 x 4 cms. section and of thickness equal to the specified cover shall be place between the bars and shuttering as to secure and maintain the requisite cover of concrete over the reinforce-ment. In case of cantilevered or doubly reinforce beams or slabs, the main reinforcing bars shall be held in position by introducing chain spacers or supports bars at 1.0. to 1.2 metres centers.

(ii) In case of columns and walls, the vertical bars shall be kept in position be means of timber templates slotes accurately out in them, the templates shall be removed after concreting has been done below it. The bars Ray also suitably tied by means of annealed steel wires to the shuttering to maintain position during concreting.

1.2. All bars, projecting form pillars, Columns beams, slabs etc, to which other bars and concrete are to be attached or bounded to later on, shall

be protected with a coat of thin neat cement grout, if the bars are not likely to be incorporated with succeeding mass of concrete within the following 10 days, This coat of thin neat cement shall be removed before concreting.

4.0. Mode of measurements & payment.

4.1. The consolidated cubical contents of concrete, work as specified in item shall be measured. The concrete laid in excess of sections shown on drawing or as directed shall not be measured. No deduction shall be made for I

(a) Ends of dis-simmilar materials such as joints, beams, posts, girders, rafters, purline trusses, corbels and steps etc. upto 500 sq.cm. in section,

(b) Opening upto 0.1 Sq. M.

4.2. The rate includes cost of all materials labour, tools and plant requited for missing, placing in position, vibrating and compacting, finishing, as directed. curing and all other incidental expenses for producing concrete of specified strength. The rate excludes the cost of form work.

4.3 The rate shall be for a unit of one cubic meter.

Item No.25:
Supply and fixing of stainless steel benches

Stainless steel approved benches to be supplied and fixed at the place where suggested by engineer-in-charge.

The rate for this item will be paid on one number basis.

Item No.26:
Supply and fixing of weather proof imported metal wood finish unbreakable benches

Wather proof imported metal wood finish unbreakable approved benches to be supplied and fixed at the place where suggested by engineer-in-charge.

The rate for this item will be paid on one number basis.

Item No.27:
Texture plaster with material

Applying textured plaster with Rustic finish using Product: Paste form, ready to use

The Base shall be Acrylic copolymer emulsion and the best quality raw materials. Final finish shall be using manufacturer specified tools and technique for achieving the finish and patter as approved by engineer in charge.

Surface Preparation: Keep, the surface thoroughly clean and dry. Remove all loose dirt, chalk, grease, fungi, algae, and flaking paint with a wire/stiff coir brush. Follow this up by water jetting if needed. All cracks and defects must be filled with cement and sand mixture (1:3 ratio). Avoid applying putty or filling compounds while painting an exterior surface.

Mixing: Nominal (Less than 2% of product weight) water can beaded to product for mixing purposes before application.After application, surface shall be let to self-cure for a period of 7 days.

Mode of measurement & Payment:The rate shall for unit of Smt

Item No.28:
Birla or JK putti work on rough plaster (three times) with labour and material

In order to achieve a superior finished surface, putty paste fillers shall be used on, all surfaces to be painted. To fill pores, dents, etc. The putty / paste fillers shall be approved quality and manufacture and shall be applied to the surface with a knife or other sharp edged tools after the priming coat as well as after each undercoat. The surface, after filling with putty / paste tiller, shall be rubbed down with fine sand paper and dusted off before the application of the subsequent coat.

The rate for this item will be paid on one square meter basis.

Item No.29:
Bondvoll natura brick finish coating

A wall coating that gives walls a textured finish to be used to make ordinary cement walls look more attractive and durable.

Features
- Anti-cracking: Helps prevent cracking
- Anti-corrosive: Helps prevent corrosion
- Anti-fungal: Helps prevent fungal growth
- Easy application: Can be applied with a trowel or putty blade
- Ready to use: Comes in a base color and doesn't require water

How to apply
1. Mix the material until it has the desired paste consistency
2. Apply the texture to a moistened surface
3. Let the texture dry for 15–25 minutes
4. Use a wet wooden or plastic trowel to create the desired design

The rate for this item will be paid on one square meter basis.

Item No.30 and 45:
Water Proofing work in Water Tank on both the sides

And
Water Proofing Treatment on Terrace and Wall sides with smooth finishing including material-labour etc. complete

Material:
As per the instructions and as approved by engineer-in-charge.

Workmanship:
Method of Application
Horizontal Joints
Clean the construction joint of loose mortar and dust.

Apply primer as directed (refer section on application of primer), wait for about half and hour until the primer dries a little and becomes "sticky".

Clean hands of dust, oil or grease and dry it.

Unroll the water bar coil slowly and carefully on the joint without pulling and stretching it. Press it to ensure that it sticks to the concrete surface and hugs the profile of the concrete surface.

Remove the protective wrap and pour the concrete.

Apply primer as directed (refer section on application of primer). Wait for about half an hours until the primer dries a little and becomes "sticky".

Clean hands of dust, oil or grease and dry it.
Unroll the water bar coil slowly and carefully on the joint without pulling and stretching it. Press it to ensure that it sticks to the concrete surface and hugs the profile of the concrete surface.

If primer cannot be applied for some reason, hang the waterbar strip from the top by bending over about 150 mm of the waterbar horizontally on the top of the retaining wall. If this is not possible, tie the end of the water bar with binding wire or string to any available projecting rebar and hang the water vertically in position.

The rate for the work will be paid on one square meter basis.

Item No.31:
Cement Plaster With Neeru + Cement Finish

Material:
Water shall confirm to M-1.
Cement Mortar shall confirm to M-11

Workmanship:
12 mm thick cement plaster in single coat in CM 1:3 (1-cement : 3-sand) with a floating coat of neat cement slurry.

Scaffolding:

Wooden bullies, bamboos, planks, treatles and other scaffolding shall be sound. These shall be proper examined before erection and use. Stage scaffolding shall be provided for ceiling plaster which shall be independent of the walls.

This kind of Plaster is normally for interior side or as specified location by Consultant to be applied as above. NORMAL CEMENT PLASTER and the surface shall be rubbed smooth after coating it with a thick coat of pure Portland cement slurry while the base coat is still fresh. If Neeru plus cement finish is specified floating with neat cement will not be required.

Mode of Measurement & Payment:
The rate shall include the cost of all materials labour and scaffolding etc. involved in the operations described under workmanship.

All plaster shall be measured in square meter unless otherwise specified length, breadth or height shall be measured correct to a centimeter.

Thickness of the plaster shall be exclusive of the thickness of the key i.e. grooves or open joints in brick work, stone work etc. or space between laths. Thickness of plaster shall be average thickness with minimum 10 mm at any point on this surface.

This item includes plastering up to floor two level.
The measurement of wall plastering shall be taken between the walls or partition (dimensions before plastering being taken) for length and from the top of floor or skirting to ceiling for height, depth of cover of cornices, if any, shall be deducted.

Soffits of stairs shall be measured as plastering on ceilings. Elowigns soffits shall be measured separately.

For jambs, soffits, sides, etc. for openings not exceeding 0.5 sq.mt. each in area for ends of joints, beams, posts girders, steps etc. not exceeding 0.5 sq.mt. each in area and for openings exceeding 0.5 sq.mt. and not exceeding 3.00 sq.mt. in each area deductions and additions shall be made in the following manner:

a) No deductions shall be made for ends of joints, beams, posts etc. and openings not exceeding 0.5 sq.mt. each and no addition shall be made for reverse, jambs, soffits, side etc. of these openings, for finish to plaster around ends of joints, beams, posts etc.

b) Deductions for openings exceeding 0.5 sq.mt. but not exceeding 3.00 sq.mt. each shall be made as following and no addition shall be made for reverse, joints, soffits, sides, etc. of these openings.

   i) When both faces of all walls are plastered with same plaster. Deductions shall be made for one face only.

   ii)
   - ✓ For openings having door squares equal to or projecting beyond the thickness of wall. Full deduction for opening shall be made from each plastered face of the wall.

- ✓ In case of openings of area above 3 dq.mt. each deduction shall be made for opening but Jambs, soffits and slits shall be measured.

The rate shall be for a unit of square meter.

Item No.32:
Providing and Fixing 145 GSM Glass Fibre Net of approved made to R.C.C and masonary joints,electric and plumbing jarietc.before applying internal and external plastering work.

The joints between masonry and RCC shall be applied with fibre net before plasterwork for seemless plaster adhesion and resistance against hairline cracks. The Fibrenet shall not be less than 145GSM and of quality approved prior to installation by Engineer In Charge. The work shall be done at all joint areas as per the instructions of Engineer In Charge.

Mode of Measurement :Surface area of fixed Glass Fibre Net shall be considered for measurements.

Item No.33, 34 and 35:
20 mm. thick sand face cement plaster on walls and RCC structure up to height of 10 mt. and above ground level consisting of 12 mm thick backing coating of C.M. 1:3 (1 cement : 3 sand) and 8 mm thick finishing coat in C.M. 1:2 (1 cement: 2 sand) etc. complete
And
Colored Cement Plaster 1mm thick in proportion of 1:3 with Cement finishing
And
Water Proof Cement Plaster 20 mm thick using Water Proofing Compound and in the ratio of 1:3 with necessary finishing

Material:
Water shall conform to M-1.
Cement Mortar shall conform to M-11

Workmanship:
The work shall be carried out in the coats. The backing coat (base coat) shall be 12 mm thick in C.M. 1:3. The relevant specification is below:

Scaffolding:
Wooden bullies, bamboos, planks, treatles and other scaffolding shall be sound. These shall be proper examined before erection and use. Stage scaffolding shall be provided for ceiling plaster which shall be independent of the walls.

Preparation of background:
The surface shall be cleaned of all dust, loose mortar, droppings, traces of algar, efflorescence and other foreign matter by water or by brushing if it is not hard and by hacking if it is hard. In case of concrete surface, if a chemical retarder has been applied to the form work, the shall be roughed by wire brushing and all the resulting dust and loose particle cleared off and care shall be taken that none

of the retarders is left on the surface. Trimming of projections on brick / concrete surfaces where necessary shall be carried out to get on even surface.

Raking of joints in case of masonry where necessary shall be allowed to dry out for sufficient period before carrying out the plaster work.
The work shall not be soaked but only damped evenly before applying the plaster. If the surface becomes dry, such are shall be moistened again.

For external plaster, the plastering operation shall be started from top floor and carried downwards for internal plaster, the plastering operations may be started whenever the building frame and cladding work are ready and the temporary supports of the ceilings on the wall of the floor have been removed. Ceiling plaster shall be completed before starting plaster to walls.

The plaster about 15 x 15 cms shall be first applied horizontally and vertically at not more than 2 meters intervals over the entire surface to serve as gauge. The surfaces of these gauges shall be truly in plane of the finished plastered surface. the mortar shall than be applied in uniform surface slightly more than the specified thickness, then brought to a true surface by marking a wooden straight edge reaching across the gauges with small upward and sideways movements at a time finally the surface shall be finished off true with a trowel or wooden float according as a smooth or a sandy granular texture is required. Excessive troweling or over working the float shall be avoided. All corners, arises angles and junctions shall be truly vertical or horizontal as the case may be and shall be carefully finished. Rounding or chamfering corners, arises junctions etc. shall be carried out with proper templates to the size required.

Cement plaster shall be used half an hour after addition of water, and mortar or plaster which is partially set shall be rejected and removed forthwith from the site.

In suspending the work at the end of the day, the plaster shall be left out clean to the line both horizontally and vertically. When recommencing the plaster, the edges of the old work shall be scrapped clean and wetted with cement putty before plaster is applied to the adjacent areas to enable the two to properly join together. Plastering work shall be closed at the end of the day on the body of features such as plaster bonds and cornices nor at the corners or arises. Horizontal joints in plaster work shall not also occur on parapet tops and copings as these invariably lead to leakage. No portion of the surface shall be left out initially be packed up later on the outside of the plaster and keeping them wet.

The thickness of back coat shall be 12 mm average. Before the first coat hardens its surface shall be beaten up by edges of wooden tapers and close dents shall be made on the surface. The subsequent coat shall be applied after this coat has been allowed to set for 3 to 5 days depending upon the weather conditions. The surface shall not be allowed to dry during this period.

the second coat be started over right after finishing of plaster. The plaster shall be kept wet for a period of 7 days. During this period, it shall be protected from all damages.

Mode of measurements & Payments:

The rate shall include the cost of all materials labour and scaffolding etc. involved in the operations described under workmanship.

All plaster shall be measured in square meter unless otherwise specified length, breadth or height shall be measured correct to a centimeter.

Thickness of the plaster shall be exclusive of the thickness of the key i.e. grooves or open joints in brick work, stone work etc. or space between laths. Thickness of plaster shall be average thickness with minimum 10 mm at any point on this surface.

This item includes plastering upto floor two level.

The measurement of wall plastering shall be taken between the walls or partition (dimensions before plastering being taken) for length and from the top of floor or skirting to ceiling for height, depth of cover of cornices, if any, shall be deducted.

Soffits of stairs shall be measured as plastering on ceilings. Elowigns soffits shall be measured separately.

For jambs, soffits, sides, etc. for openings not exceeding 0.5 sq.mt. each in area for ends of joints, beams, posts girders, steps etc. not exceeding 0.5 sq.mt. each in area and for openings exceeding 0.5 sq.mt. and not exceeding 3.00 sq.mt. in each area deductions and additions shall be made in the following manner:

a) No deductions shall be made for ends of joints, beams, posts etc. and openings not exceeding 0.5 sq.mt. each and no addition shall be made for reverse, jambs, soffits, side etc. of these openings, for finish to plaster around ends of joints, beams, posts etc.

b) Deductions for openings exceeding 0.5 sq.mt. but not exceeding 3.00 sq.mt. each shall be made as following and no addition shall be made for reverse, joints, soffits, sides, etc. of these openings.

   i) When both faces of all walls are plastered with same plaster. Deductions shall be made for one face only.

   ii)
   - For openings having door squares equal to or projecting beyond the thickness of wall. Full deduction for opening shall be made from each plastered face of the wall.
   - In case of openings of area above 3 dq.mt. each deduction shall be made for opening but Jambs, soffits and slits shall be measured.
   - The rate shall be for a unit of square meter.

Item No.36:
Decorative Groove Work in Cement Plaster

External Sand Faced Plastering with groove and patta as per given drawing detail etc. of 5 to 10, 12 to 25 cm thick in two coats on brick, concrete,

parapet wall for exterior plastering of 12 mm thick backing coat in C.M. 1 :3 (1 Cement : 3 Sand) and 8 mm thick finishing coat of C.M. 1:2 (1 Cement : 2 Sand) and sponge the surface to obtain an even and granular surface including curing etc. complete as directed by engineer-in-charge.

The rate shall be for a unit of one Running Meter.

Item no.37:
Plastic Emulsion paint (two coats) (Asian Paint, ICI, Dulux, Nerolac, Berger, etc. of approved type (with prime coat):
And
Double coat oil paint on wall surface with remove all dirt & dust with first hand linced oil.
And
Making of wall pictures

Materials:
The enamel paint shall satisfy in general requirements in specifications of oil paints. Enamel paint shall confirm to I S Latest edition.

Workmanship:
The materials required for work of painting work shall be obtained directly from approved manufacturer or approved dealer and brought to the site in maker's drum, bags etc. with seal unbroken.

All materials not in actual use shall be kept properly protected, lids of containers shall be kept closed and surface of paint in open or partially open containers covered with a thin layer of turpentine to prevent formation of skin. The materials which have become state or flat due to improper and long storage shall not be used. The paint shall be stirred thoroughly in its container before pouring into small containers. While applying also, the paint shall be continuously stirred in smaller container. No left over paint shall be put back into store tins. When not in use, the containers shall be kept properly closed.

If for any reasons, thinning is necessary, the brand of thinner recommended by the manufacturer shall be used.

The surface to be painted shall be thoroughly cleaned and dusted. All rust, dirt and grease shall be thoroughly removed before painting is started. No painting on exterior or other exposed parts of the work shall be carried out in wet, damp or otherwise unfavourable weather and all the surfaces shall be thoroughly dry before painting work is started.

Application of paint:
Brushing operations are to be adjusted to the spreading capacity advised by the manufacturer of particular paint. The paint shall be applied evenly and smoothly by means of crossing and laying off. the crossing and laying of consists of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternately in opposite directions two or three times and then finally brushing lightly in a direction at right angels to

the same. In this process, no brush marks shall be left after the laying off is finished. The full process of crossing and laying of will constitute one coat.

Each coat shall be allowed to dry completely and lightly rubbed with very fine grade of san paper and loose particles brushed off before next coat is applied. Each coat shall vary slightly in shade and shall be got approved from the engineer-in-charge before next coat is started.

Each coat except the last coat shall be lightly rubbed down with sand paper of fine pumice stone and cleared of dust before the next coat is applied. No hair marks from the brush or clogging of paint puddles in the corners of panels, angles of moulding etc. shall be left on the work.

Special care shall be taken while painting over bolts, nuts, rivets, overlaps etc. Approved best quality brushes shall be used.

Mode of measurement and payment:
The new steel and other metal surface shall be measured under this item.
All the work shall be measured net in the decimal system as executed subject to the following limits unless otherwise stated hereinafter.

a) Dimensions shall be measured to the nearest 0.01 meter.
b) Areas shall be worked out to the nearest 0.01 meter.

No deductions shall be made for openings not exceeding 0.5 sq.m. each and no addition shall be made for painting to beddings, moulding, edges, jambs, soffits, sills etc of such opening.

In case of fabricated structural steel and iron work, priming coat of paint shall be included with fabrication. In case of trusses, if measured is sq.m compound griders, stanchions, lattices, girder and similar work, actual are shall be measured and no extra shall be paid for painting on bolts heads, nuts, washers etc. No addition shall be made to the weight calculated for the purpose of measurements of steel and iron works for paint applied on shop or at site.

The different surfaces shall be grouped into one general item, areas of uneven surfaces being converted into equivalent plain areas in accordance with the table given as per Annexure-II for payment.

The rate is including priming coat.

The rate shall be for a unit of one square meter.

Item No.38:
Apex Color work on Outer side of Wall (Two coats) (with Base Coat) FINISHES

EXTENT AND INTENT
The Contractor shall supply all materials, labour, tools, ladders, scaffolding and other equipment necessary for the completion and protection of all

painting / finishing work. Painting & finishing, as herein specified shall be applied to all surfaces requiring painting / finishing throughout the interior and exterior of the buildings as given in the schedule of finishes or elsewhere. The painting / finishing shall be carried out by a specialist workers, approved by the Engineer- in-charge of RMC for this work.

STORAGE

Storage of materials to be used on the job shall be, only in a single place approved by the Engineer-in-charge of RMC for this work. Such storage place shall not be located within any of the buildings included in the contract.

MATERIALS

Materials used in the work shall be of manufacture approved by the Engineer-in- charge of RMC for this work, Ready mixed paints, varnishes, enamels, lacquers, stains, paste fillers, distempers and other materials must be delivered to the job site in the original containers, with the seals unbroken and labels intact. Each container shall give the manufacturer's name, type of paint, color of paint and instructions of reducing. Thinning shall be done only in accordance with directions & manufacturer's specification. Remove rejected materials immediately from the premises.

SHADES

All shades, as provided in the shade schedule, shall be approved by the Engineer- in-charge of RMC for this work. The Contractor shall as far as possible use pre- mixed manufacturer's shades and shall prepare sample of the shades selected and submit same for approval by the Engineer-in-charge of RMC for this work. No work is to proceed until the Engineer-in-charge of RMC for this work has given his approval, preferably in writing, of the shade samples.

COMMENCEMENT OF WORK

Painting / finishing shall not be started until the surfaces to be painted / finished are in a condition fit to receive painting / finishing and so certified by the Engineer-in-charge of RMC for this work.

Painting / finishing work shall be taken in hand only after all other civil work is completed.

Buildings where painting / finishing work is to commenced shall be thoroughly swept and cleaned up before commencement of painting / finishing.

SCAFFOLDING

Only double scaffolding having two sets of vertical supports shall be provided for all, painting / finishing work. The supports shall be tied together with horizontal pieces over which the scaffolding planks shall be fixed.

All the vertical and horizontal members of the scaffolding shall be placed sufficiently away from the surfaces to be painted to ensure proper and unit erupted application.

WORKMANSHIP

The workmanship shall be of the very best; all materials evenly spread and smoothly flowed as without running sags, using good quality tools, brushes, etc., as required. Only skilled painters / applicators shall be employed. A properly qualified foreman shall be constantly on the job whilst the work is proceeding. All surfaces to be painted / finished shall be cleaned free of all loose dirt and dust before painting / finishing is started. AII work where a coat of material has been applied must be inspected and approved before application of the succeeding specified coat. Each undercoat shall be distinct shade of the approved color.

Before painting / finishing, remove hardware, accessories, plates and similar items or provide portion to all such items. Upon completion of each space, replace all fixtures removed. Remove doors if necessary to paint bottom edge. Use only skilled mechanics for the removal and replacement of above items.

CONCEALED SURFACES

All interior and exterior trim, door frames, doors, shelving, cabinet work shall be thoroughly and carefully back painted as all surfaces and edges which will be concealed when installed. Such surfaces shall be clean, dry, sanded and properly prepared to receive the paint. Tops, bottom and edges of doors shall be finished same as the rest of the door.

PROTECT AND CLEAN

The agency shall protect not only his own work at all times, but shall also protect all adjacent work and materials by suitable covering during progress of his work. Upon completion of his work, he shall remove all paint and varnish spots from floors, glass and other surfaces. Any defaced surfaces shall be cleaned and the original finish restored. He shall remove from the premises all rubbish and accumulated material and shall leave the work in clean, orderly and acceptable conditions.

PREPARATION OF SURFACES

PLASTER WORK: Fill all holes, cracks and abrasions with plaster of parish / cement slurry as directed, properly prepared and applied and smoothed off to match adjoining surfaces. Do not use sand paper on plaster surfaces. Plaster shall be allowed to dry for at least 12 (twelve) weeks before the application of paint / finishes.

STEEL AND IRON: All surfaces shall be washed with mineral spirits to remove any dirt or grease before applying paint. Where rust or scale is present, it shall be wire brushed and sand papered clean. All cleaned surfaces shall be given one coat of approved phosphate before prime coat in accordance with the manufacturers, Instructions. Shop coats of paint that have become marred shall be cleaned off, wire brushed, and spot primed over the affected areas.

APPLICATION

The paint shall be continuously stirred in the container so that its consistency is kept uniform throughout.

The painting / finishing shall be laid on evenly and smoothly by means of crossing and laying off, the latter in the direction of the grain of the wood. The crossing and laying off consists of covering the area with paint, brushing the surface hard for the first time and then brushing alternatively in opposite directions, two or three times and then finally brushing lightly in a direction at right angles to the same. In this process no brush marks shall be left after the laying off is finished. The full process of crossing and laying off will constitute one coat.

Where so stipulated, the painting / finishing shall be carried out using spray machines suited for the nature and location of the work to be carried out. Only skilled and experienced workmen shall be employed for this class of work. Paints used shall be brought to the requisite consistency by adding a suitable thinner. Spraying shall be carried out only in dry conditions. No exterior painting / finishing shall be done in damp foggy or rainy weather. Surface to be painted shall be clean, dry, smooth and adequately protected from dampness. Each coat shall be applied in sufficient quantity to obtain complete coverage, shall be well brushed and evenly worked out over the entire surface and into all corners, angles and crevices allowed to thoroughly dry. Second coat shall be of suitable shade to match final color, and shall be approved by the Engineer-in-charge of RMC for this work before final coat is started. Allow at least 48 hours drying time between coats for interior and 7 days for exterior work, and if in the judgment of the Engineer-in-charge of RMC for this work more time is requested it shall be allowed. Finished surfaces shall be protected from dampness and dust until completely dry. Finished work shall be uniform of approved color, smooth and free from runs, sags, defective brushing and clogging. Make edges of paints adjoining materials of colors sharp and clean, without overlapping.

In order to achieve a superior finished surface, putty paste fillers shall be used on, all surfaces to be painted. To fill pores, dents, etc. The putty / paste fillers shall be approved quality and manufacture and shall be applied to the surface with a knife or other sharp edged tools after the priming coat as well as after each undercoat. The surface, after filling with putty / paste tiller, shall be rubbed down with fine sand paper and dusted off before the application of the subsequent coat.

Paste wood filler when set shall be wiped across the grains of the wood and then with the grain to secure a clean surface. Surface to be stained shall be covered with uniform coat of stain wiped off if required.

FINISH: The painted surfaces shall be finished to require texture. Matt finish shall be achieved by use of sponge rollers or stippling brushes as called for.

The rate shall be paid for a unit of one square meter basis.

Item No.39:
IPS Flooring: Providing I.P.S. flooring of about 40 mm. thick using C.M. 1:2 proportion including finishing, tieing, etc. complete as per detailed specification

A. Materials Cement Concrete
The cement concrete shall conform to specifications for concrete given in a separate section for ordinary concrete. The maximum size of coarse aggregate shall be 12 mm. The fine aggregate shall consist of properly graded particles.

The proportion of mix shall be 1:2:4 as specified. The minimum amount of mixing water, that will produce a workable mix and will allow finishing, shall be used, generally a w/c ratio of G.S. should suffice. For large works mechanical mixing may be resorted to at the direction of the Engineer-In-Charge.

B. Laying of I.P.S Flooring
1. The sub grade for the concrete floor shall be a bedding of compacted earth and rubble stones soling to the required level. The earth cushion of 300 mm. thick shall be applied using locally available soil. The soil should be properly sieved and free from any gravel, stones etc. This shall be gradually built upto the full thickness using excavated soil if found desirable. The earth cover shall be the uniformly soaked with water without making it slushy. The rubble stones of about 200 to 230 thick size shall be laid over this earth cover in proper position. The rubble laying shall be done such that proper bond is obtained by fitting in closely the adjacent stones by using bond stones. For this proper breaking of points shall be done. The rubble stones shall be carefully laid, hammered down with a wooden mallet into position and solidly bedded. No hollow space shall be left anywhere in the joints. This can be possible by using small chips in the interior to fill interstice between adjacent stones shall be wetted before use.

2. The surface of the sub grade shall be cleaned of all loosed materials and moistened immediately before laying the concrete floor. The concrete flooring shall be laid in alternated bays not exceeding 6 sqm. each. The edges of each panel into which the floor is divided should be supported by flat bars of steel or wood duly oiled at least 48 hours elapse before the concreting in the adjacent bays is commenced.

The rate shall be for a unit of one square meter.

Item No.40 and 41:
Supply, Fixing & Polishing of Kota Stone work thickness 20-25 mm to be fixed in Lime:Mortar 1:2 and liquid Cement and as instructed
And
Supply & Fixing of Polished of Kota Stone of required size & thickness as instructed to fixed in Platform / CupBoard etc

1.0. Materials

1.1. Water shall confirm to M-1. Lime mortar shall confirm to M-10, Cement mortar shall confirm to M-11, Polished kota stone shall confirm to M-49.

2.0. Workmanship

2.1. Each slab shall be cut to the required size and shape and fine chisel dressed at all the edges. The sides thus dressed shall have a full contact if a straight edge is laid along. The sides shall be table rubbed with coarse sand before paving. All angles and edges of the slabs shall be true square and free from chippings and giving a plane surface. The thickness shall be 25 mm. (Average) as specified in this item but not less than 20 mm at any place.

2.2. Bedding for the Kota stone slabs shall be of cement mortar 1:6 (1 cement : 6 coarse sand) of average thickness 20 mm as given in the description of the item. Sub grade shall be cleaned, wetted and mopped. Mortar of the specified mix and thickness shall be spread on an area sufficient to receive one kota stone slab. The slab shall then be washed clean before laying. It shall be laid on top pressed, tapped gently to bring it in level with the other slabs. It shall then be lifted and laid aside. Top surface of the mortar shall then be corrected by adding fresh mortar at hollows or depressions. The mortar shall then be allowed to harden bit. Over this Surface, cement slurry of honey like consistency shall be applied. The slab shall then be gently placed in position and tapped with wooden I mallet till it is properly bedded in level. with and close to the adjoining slab. The joint shall be as fine as possible. The slabs fixed in the floor adjoining the walls shall enter not less than 10 mm. under the plaster, skirting or dedo. The junction between wall and floor shall be finished neatly. The finished surface shall be true to levels and slopes as directed.

2.3. The floor shall be kept wet for a minimum period of 7 days so that bedding and joints set properly.

2.4. Polishing shall be normally commenced after 14 days of laying the stone slab.

First polishing shall be done with carborundum stones of 120 grade grit fitted in the heavy machine and then deacon polishing shall be done with carborundum stone of 220 to 350 grade grit fitted in heavy machine. Water shall be properly used during polishing. The stone shall then be washed clean with water. When directed by the Engineer-in-charge; wax polish of approved quality shall be applied on the surface with the help of soft cloth over a clean and dry surface. Then the polishing machine fitted with bobs shall be run over it.

2.5. The holes required for Nahni traps, pipes and other fittings shall be made without any extra cost.

2.6 The kota stone for platform and c.b. shall be supplied and fixed with two side polished and the work shall have to be completed as per requirement and instructions of engineer in-charge.

3.0. Mode of measurements & payment

3.1. The rate shall include the cost of all materials and labour involved in all the operations described above. The kota stone flooring shall be measured in square meters correct to two places of decimal, length and breadth shall be measured correct to a: centimeter and between the finished face of skirting dedo or wall plaster and no deduction shall be made nor extra paid for any opening in floor of areas up to 0.1 sq.mt.

3.2. The rate for item shall be for a unit of one sq. meter

Item No.42:
Supply & Fixing of Granite Stone (Telephone Black Color) on wall after rough cast Cement Plaster in proportion of 1:3 and fixing granite in Cement Paste

1.0 Materials

1.1. Granite shall be of approved colour and quality. The stone shall be hard even, sound and regular in shape and generally uniform in colour. It shall be without any soft veins, cracks of flaws.

The thickness of the stone shall be as specified in item. The core of stone in sides should also be polished.

All exposed faces shall be double polished tender truly smooth and even reflecting surface. The exposed edges and corners shall be rounded off as directed. The exposed edges shall be machine cut and shall have uniform thickness.

2.0. Mode of measurements & payment

3.1 The rate shall include the cost of all materials and labour involved in all the operations described above. The kota stone flooring shall be measured in square meters correct to two places of decimal, length and breadth shall be measured correct to a: centimeter and between the finished face of skirting dedo or wall plaster and no deduction shall be made nor extra paid for any opening in floor of areas up to 0.1 sq.mt.

3.2. The rate shall be paid for a unit of one sq. meter

Item No.43:
Supply, Fixing & polishing for Granite flooring work 18mm thick & 200 mm base of lime mortar in proportion lime:sand 1:2

1.0 Materials

1.1. Water shall confirm to M-1. Lime mortar shall confirm to M-10, Cement mortar shall confirm to M-11, Granite Stone shall confirm to M-52.

2.0. Workmanship

2.1 Each slab shall be cut to the required size and shape and fine chisel dressed at all the edges. The sides t h u s dressed shall have a full contact if a straight edge is laid along. The sides shall be table rubbed with coarse sand before paving. All angles and edges of the slabs shall be true square and free from chippings and giving a plane surface. The thickness shall be 25 mm. (Average) as specified in this item but not less than 20 mm at any place.

2.2 Bedding for the Granite stone slabs shall be of lime mortar 1:2 (1 lime : 2 coarse sand) of average thickness 20 mm. Sub grade shall be cleaned, wetted and mopped. Mortar of the specified mix and thickness shall be spread on an area sufficient to receive one stone slab. The slab shall then be washed clean before laying. It shall be laid on top pressed, tapped gently to bring it in level with the other slabs. It shall then be lifted and laid aside. Top surface of the mortar shall then be corrected by adding fresh mortar at hollows or depressions. The mortar shall then be allowed to harden bit. Over this Surface, cement slurry of honey like consistency shall be applied. The slab shall then be gently placed in position and tapped with wooden I mallet till it is properly bedded in level. with and close to the adjoining slab. The joint shall be as fine as possible. The slabs fixed in the floor adjoining the walls shall enter not less than 10 mm. under the plaster, skirting or dedo. The junction between wall and floor shall be finished neatly. The finished surface shall be true to levels and slopes as directed.

2.3 The floor shall be kept wet for a minimum period of 7 days so that bedding and joints set properly.

2.4 Polishing shall be normally commenced after 14 days of laying the stone slab. First polishing shall be done with carborundum stones of 120 grade grit fitted in the heavy machine and then second polishing shall be done with carborundum stone of 220 to 350 grade grit fitted in heavy machine. Water shall be properly used during polishing. The stone shall then be washed clean with water. When directed by the Engineer-in-charge; wax polish of approved quality shall be applied on the surface with the help of soft cloth over a clean and dry surface. Then the polishing machine fitted with bobs shall be run over it.

2.5 The holes required for Nahni traps, pipes and other fittings shall be made without any extra cost.

3.0. Mode of measurements & payment

3.1 The rate shall include the cost of all materials and labour involved in all the operations described above. The granite stone flooring shall be measured in square meters correct to two places of decimal, length and breadth shall be measured correct to a: centimeter and between the finished face of skirting dedo or wall plaster and no deduction shall be made nor extra paid for any opening in floor of areas up to 0.1 sq.mt.

3.2. The rate shall be paid for a unit of one sq. meter

Item No.44:
Supply & Fixing of Broken Glazed (China Mosaic) tiles size 5-6 mm thick of different size and shade (approved crazy pattern) in Cement: Mortar 1:2 and joint filling with White Cement / Coloured Cement including Ramping, Watering, Curing etc. complete

The work is to be carried out with supply and fixing of Broken Glazed (China Mosaic) tiles of size 5-6 mm thick of different size and shade (approved crazy pattern) in C M 1:2 and joint filling with white cement / coloured cement including ramping, watering, curing etc complete with 25 mm bedding of cement mortar 1:6 with required slope. The whole work of this item is to be carried out and completed as per the instructions of engineer in charge.

The rate shall be for a unit of one square meter basis

Item No.46:
Supply & Fixing of SQ.8" / QUADRASTEINE PL - R RED DL CP 80mm with minimum average 400 Kg/cm2 Compressive strength after bedding of black stone powder in line and cc on edge in proportion of 1:2:4 with curing etc, complete. Like equivalent of VYARA tiles PVT. LTD. and etc.

High strength Quardrasteine PL R RED DL CP pavers shall be installed with minimum average compressive strength and dimensions specified in the item description. Installation shall be done evenly in line, level and slopes as per the instructions of Engineer In Charge. There shall be steps, patterns, layouts of blocks as per the approved design and shall be fixed including lifting, laying, cleaning and finishing complete using CC of 1:2:4 on edges.

Mode of Measurement: Surface area of fixing shall be considered for measurements.

Item No.47:
Providing and laying glazed tiles of 6 mm thick of approved quality (1st quality) of required size jointed with cement paste on 10 mm thick cement plaster 1:3 (1-cement3- Coarse sand) pointing white cement and jointed with white cement slurry

MATERIALS
Glazed Tiles
The tiles shall be of best quality as approved by the Engineer- in-charge. They shall be float and true to shape. They shall be free from cracks, crazing spots, chipped edges and corners. The glazing shall be of uniform shade.

Variation from the stated sizes, other than the thickness of tile shall be plus or minus 1.5 mm. The thickness of tile shall be 6 mm except as above the tiles shall confirm to I.S. Latest edition.

BEDDING
The sub-grade shall be cleaned, wetted and mopped. The bedding shall then be laid evenly over the surface tamped and corrected to desired level and allowed to harden enough to offer a rigid cushion to tiles and to enable the mason to place wooden planks across and equal on it.

The Color glazed tiles shall be laid on cement mortar bedding of 10 mm thick in C.M. 1:3. The mortar shall have sufficient plasticity for laying and there shall be no hard lumps that would interfere with the evenness of bedding. The base shall be cleared and well wetted. The mortar shall then be spread in thickness not less than 10mm at any place and average 12mm thickness. The proportion of the cement mortar shall be as specified in the item.

FIXING TILES
The tiles before laying shall be soaked in water for at least two hours. Neat grey cement grout at 3.3 Kg. / Cement / Sq.Mt. of honey like consistency shall be spread over the mortar bedding as directed. The edges of the tiles are smeared with neat cement slurry. The tiles shall be well pressed and gently tapped with a wooden mallet till they are properly bedded and in level with the adjoining tiles. There shall be no hollows in bed or joints. The joints between the tiles shall be as thin as possible in straight line or as per pattern.

The tiles shall not have staggered joints. The joints shall be true to centre line both ways. The Nahni trap coming in the flooring shall be so positioned that its grating shall replace only one tile as far as possible. Where full size tiles cannot be fixed, they shall be cut (Swan) to the required size and the edges rubbed smooth to ensure straight and true joints. The joints shall bee filled with grey cement grout with wire brush of trowel to a depth of 5mm and loose material removed. White cement shall be used for pointing the joints. After fixing the tile finally in an even plane the flooring shall be kept wet and allowed to nature undisturbed for 7 days.

CLEANING
The surplus cement grout that may have come out of the joints shall be cleared off before it sets. Once the floor has set, it shall be carefully washed, cleared by dilute acid and dried. Proper precaution and measures shall be taken to ensure that the tiles are not damaged many ways till the completion of the construction.

The rate for this item will be paid on one square meter basis.

Item No.48:
Supply and fixing of vitrified for Skirting work (1st Quality) width upto 10 cm:

The tiles shall be of best quality as approved by the engineer-in-charge. They shall be flat and true to shape. They shall be free from cracks, crazing spots, chipped edges and corners. the glazing shall be of uniform shade. Variation from the stated sizes, other than the thickness of tile

shall be plus or minus 1.5 mm. Except as above the tiles shall conform to IS (latest edition).

Skirting should be 10 cm in height from flooring.

The rate shall be for a unit of one running meter.

Item No.49:
Providing & laying Vitrified Tiles for flooring work in 1st Quality

1.0. Materials
Approved quality vitrified tiles as approved by engineer-in-charge / architect.

BEDDING
The sub-grade shall be cleaned, wetted and mopped. The bedding shall then be laid evenly over the surface tamped and corrected to desired level and allowed to harden enough to offer a rigid cushion to tiles and to enable the mason to place wooden planks across and equal on it.

The Color vitrified tiles shall be laid on cement mortar bedding of 10 mm thick in C.M. 1:3. The mortar shall have sufficient plasticity for laying and there shall be no hard lumps that would interfere with the evenness of bedding. The base shall be cleared and well wetted. The mortar shall then be spread in thickness not less than 10mm at any place and average 12mm thickness. The proportion of the cement mortar shall be as specified in the item.

FIXING TILES
The tiles before laying shall be soaked in water for at least two hours. Neat grey cement grout at 3.3 Kg. Cement / Sq.Mt. of honey like consistency shall be spread over the mortar bedding as directed. The edges of the tiles are smeared with neat cement slurry. The tiles shall be well pressed and gently tapped with a wooden mallet till they are properly bedded and in level with the adjoining tiles. There shall be no hollows in bed or joints. The joints between the tiles shall be as thin as possible in straight line or as per pattern.

The tiles shall not have staggered joints. The joints shall be true to centre line both ways. The Nahni trap coming in the flooring shall be so positioned that its grating shall replace only one tile as far as possible. Where full size tiles cannot be fixed, they shall be cut (Swan) to the required size and the edges rubbed smooth to ensure straight and true joints. The joints shall bee filled with grey cement grout with wire brush of trowel to a depth of 5mm and loose material removed. White cement shall be used for pointing the joints. After fixing the tile finally in an even plane the flooring shall be kept wet and allowed to nature undisturbed for 7 days.

CLEANING
The surplus cement grout that may have come out of the joints shall be cleared off before it sets. Once the floor has set, it shall be carefully washed, cleared by dilute acid and dried. Proper precaution and measures

shall be taken to ensure that the tiles are not damaged many ways till the completion of the construction.

Mode of Measurement:
The rate for flooring work shall be paid on square meter basis.

Item No.50:
Providing and fixing72/77mm -Maple Wooden flooring System (Indoor), The system consists of Pine Runner of 33/38mm X 63/68mm in length of 1.20 mt., laid at a distance of 310 center to center WOODEN FLOORING ROBBINS/BWF- FIBA &MFMA ApprovedProviding and Installing 72/77mm Maple Wooden flooring System. (Indoor) The system consists of Pine Runner of 33/38mmmx 63/68mm in length of 3 to 4"" , laid at a distance of 310 center to center, each runner would have "" AERO FLOAT"" shock cushion pad of 19 mm, each pad will be fixed at the center to center of 330mm on the runner and at the joint of the runner Finally Fixing with Cleats / Screws or Staples BWF accredited Maple Wood looring Boards of 20mm, 67 to 85mm of random length, tongue and grooved A Gap of a for concealed fastening minimum of 1.5mm will be left affter every 5' of the floor boardas a weeding jointand at the edges, a minimum gap of 18mm will be kept open for expansion & Construction due to change in the climate Finally sanding the wooden flooring and application of ""Matt Finish"" sports polish which will consist of one coat of Sealer and One THE PRODUCT AND Gym Coat.SYSTEM WILL BE ACCREDITED AND CERTIFIED BY BADMINTON WORLD FEDERATION (BWF).
Badminton flooring shall be installed using materials and methods certified by Bandminton World Federation. The samples having approved specification shall be presented to the Engineer In Charge for approval before final installation. The work should be completed as per the methods and specification specified by the BW Federation and as per the instructions of Engineer In Charge.

Mode of Measurement : Surface area of fixing shall be considered for measurements.

Item No.51:
Vinyle Flooring - 4.5mm- PVC PU SPORTS FLOORING: Providing and laying PVC Flooring of 4.5 mm thickness with a durable wear layer, reinforced fiberglass layer and closed cell foam backing. It's UV coating durable surface provides easy maintenance, excellent resistance and excellent dimensional stability. It's shock absorption protects the joints and muscles of the players and keeps safe from sports injuries. It's excellent power return and identical ball bounce in all areas increases athletes to increase their On-court performance. Roll Size : 1.8 mtr X 15 Mtr.

Sports Flooring shall be installed upon floor finish in areas of activities as per designated location and as per the instructions of engineer in charge. The material and specification shall be as per the item description and sample shall be approved by Engineer In Charge before installation.

Mode of Measurement : Surface area of fixing shall be considered for measurements.

Item No.52:
OUTDOOR PU SYSTEM :5 + 2 SYSTEM PU SYSTEM "BWF APPROVED" US/EUROPEAN MAKE Providing and installation of "PU" flooring Total System thickness : 5mm + 2mm Impermeable Good Scratch and abrasion resistance Shock Absorption - 51% Vertical Deformation - 2.7mm Thick Coefficient - 5 Resistance to rolling load - 1000N Ball Rebound - 102% Impact Resistance - 12Nm The PU system consists of application of Concrete Primer on the existing concrete surface, followed by Laying of 5mm thick compressed SBR MAT , adhered with PU adhesive , there on installation of seamless PU coating system of 2mm thickness consisting of One Primer Coat, followed with two sealer coats and finally finished with the top coat.

BWF approved PU System Flooring shall be installed upon floor finish in areas of activities as per designated location and as per the instructions of engineer in charge. The material and specification shall be as per the item description and sample shall be approved by Engineer In Charge before installation.

Mode of Measurement: Surface area of fixing shall be considered for measurements.

Item No.53:
Mat Flooring - Providing and laying 40 mm thick Rubber Interlocking 1 x 1 meter Block Mat.

Mat of 40mm thick rummber blocks of dimension 1mx1m in Flooring shall be installed upon floor finish in areas of activities as per designated location and as per the instructions of engineer in charge. The material and specification shall be as per the item description and sample shall be approved by Engineer In Charge before installation.

Mode of Measurement: Surface area of fixing shall be considered for measurements.

Item No 54.:
Boxing Ring: SURFACE PREPARATION, Providing & Installing of the Boxing Floor 1 mtr from Finish Floor Level with allied civil Works, Providing & installing galvanised frame and easily removable swivel stools in the corners, Providing & Installing of the 1.5cm PE Foam for the Boxing Flooring, Providing and installing 21mm - TEAK Wooden flooring Etc Complete

Boxing ring having total height of 1m from finished floor level shall be installed upon floor finish in areas of activities as per designated location and as per the instructions of engineer in charge. The material and specification shall be as per

the item description and sample shall be approved by Engineer In Charge before installation.

Mode of Measurement : Surface area of fixing shall be considered for measurements.

Item No.55:
Providing & Installing of the 1.5cm PE Foam for the Boxing

Flooring for Wrestling ring PE Foam shall be installed upon floor finish in areas of activities as per designated location and as per the instructions of engineer in charge. The material and specification shall be as per the item description and sample shall be approved by Engineer In Charge before installation.

Mode of Measurement: Surface area of fixing shall be considered for measurements.

Item No.56:
Supply and installation of Gymnastics equipment :EQUIPMENTS FOR MEN - Pommel horse, Rings, Vaulting table, Parallel bars : EQUIPMENTS FOR WOMEN : Vaulting table, Balance Beam, Uneven Bars, Floor etc.

The Gymnastics instruments, equipment and paraphernalia shall be procured from the supplier after approval from Engineer In charge and installed at the specified location including all lead, lift and labour complete as per the instructions of engineer in charge.

Mode of Measurement :Measurement shall be considered per job of installation.

Item No.57:
Gymnastics floor: Providing and laying Rubber interlocking 1 x 1 meter block matt with30cm thickness

Gymnastics spring floor having 30cm depth including all layers shall be installed upon floor finish in areas of activities as per designated location and as per the instructions of engineer in charge. The material and specification shall be as per the item description and shall be approved by Engineer In Charge before installation.

Mode of Measurement: Surface area of fixing shall be considered for measurements.

Item No.73:
construction of concrete road using tremix system with 20CM thick M-25 concrete mixing complast P 211 water reduction concrete admixture @ 100 M.L. per bag of cement with providing adn fixing and removing of "C" Channel having size 75 mm X 75 mm as per required level slop and thickness of concrete road floor leveling of placed concrete with surface vibrator finishing the surface with power floater and trowel light

brooming on the surface as directed with proving expansion joint size 20X125 mm and filling the expansion joint having size 20 mm X20mm by using colpar 200 as per manufacturer specification with making of construction joint by cutting of joint of size 3mm X20mm by using of concrete cutter machine including curing etc. complete
And
Item No.158 and 159:
Concrete mix design including (DLC) / cement concrete mix design for

- **Compressive Strength**
- **Flexural Strength**

All RCC work is to be carried out through ready mix design as approved by engineer-in-charge.

1.1 Design Submissions

Complete detailed design calculations of foundations and superstructure together with general arrangement drawings and explanatory sketches shall be submitted to Addl. City Engineer. Separate calculations for foundations or superstructures
submitted independent of each other shall be deemed to be incomplete and will not be accepted by Addl. City Engineer.

The design considerations described hereunder establish the minimum basic requirements of plain and reinforced concrete structures, masonry structures and structural steel works. However, any particular structure shall be designed for the satisfactory performance of the functions for which the same is being constructed. The Contractor shall also take care to check the stability of partly completed structures.

1.2 Design Standards

All designs shall be based on the latest Indian Standard (I.S.) Specifications or Codes of Practice. The design standards adopted shall follow the best modern engineering practice in the field based on any other international standard or
specialist literature subject to such standard reference or extract of such literature in the English langauge being supplied to and approved by Addl. City Engineer. In case of any variation or contradiction between the provisions of the I.S. Standards or Codes and the specifications given along with the submitted
tender document, the provision given in this Specification shall be followed.

All reinforced concrete structural design shall generally conform to the following publications of the Indian Standards Institution :

I.S. 456 Code of Practice for plain and reinforced concrete
I.S. 875 Code of Practice for design loads for buildings and structures
(Part 1 to 5)
I.S. 3370 Code of Practice for concrete structures for the storage of liquids (Part I to IV)
I.S. 1893 Criteria for earthquake resistant design of structures

I.S. 2974 Code of Practice for design and construction of machine foundations (Part 1 to 4)

All structural steel design shall generally conform to the following publications of the Indian Standards Institution:

I.S. 800: Code of Practice for general construction in steel
I.S. 806: Code of Practice for use of steel tubes in general building construction

1.3 Design Life

The design life of all structures and buildings shall be 60 years.

1.4 Design Loading

All buildings and structures shall be designed to resist the worst combination of the following loads / stresses under test and working conditions; these include dead load, live load, wind load, seismic load, stresses due to temperature changes, shrinkage and creep in materials, dynamic loads, impact load and other specific loads.

1.4.1 Dead Load

This shall comprise all permanent construction including walls, floors, roofs, partitions, stairways, fixed service equipment and other items of machinery.

The following minimum loads shall be considered in design of structures :

Weight of water		9.81 kN/m^3
Weight of soil (irrespective of strata available at site and type of soil used for filling etc). However, for checking stability against uplift, actual weight of soil as determined by field test shall be considered.		20.00 kN/m^3
Weight of plain concrete		24.00 kN/m^3
Weight of reinforced concrete		25.00 kN/m^3
Weight of brickwork (exclusive of plaster)		22.00 N/m^2 per mm thickness of
Weight of plaster to masonry surface		18.00 N/m^2 per mm thickness
Weight of granolithic terrazzo finish or rendering screed, etc.		24.00 N/m^2 per mm thickness

1.4.2 Live Load

Live loads shall be in general as per I.S. 875. However, the following minimum loads shall be considered in the design of structures:

i)	Live load on roofs (accessible)	:	1.50 kN/m^2
	(Non-accessible)	:	0.75 kN/m^2
	Live load on floors supporting equipment such as pumps, blowers, compressors, valves, etc.	:	10.00
iii)	Live load on all other floors walkways, stairways and platforms.	:	5.00 kN/m^2

In the absence of any suitable provisions for live loads in I.S. Codes or as given above for any particular type of floor or structure, assumptions made must receive the approval of Addl. City Engineer prior to starting the design work. Apart from the specified live loads or any other load due to material stored, any other equipment load or possible overloading during maintenance or erection / construction shall be considered and shall be partial or full whichever causes the most critical condition.

1.4.3 Wind Load

Wind loads shall be as per I.S. 875.

1.4.4 Earthquake Load

This shall be computed as per I.S. 1893 considering earthquake 2001. An importance factor appropriate to the type of structure shall be considered for design of all the structures.

1.4.5 Dynamic Load

Dynamic loads due to working of items such as pumps, blowers, compressors, switch gears, travelling cranes, etc. shall be considered in the design of structures as per manufacturer's data.

1.5 Joints

Movement joints such as expansion joints, complete contraction joints, partial contraction joints and sliding joints shall be designed to suit the structure. However, contraction joints shall be provided at specified locations spaced not more than 7.5 m in both right angle directions for all walls and rafts.

Expansion joints of suitable gap at suitable intervals not more than 30 m shall be provided in all walls, floors and roof slabs of water retaining structures.

Construction joints shall be provided at right angles to the general direction of the member. The locations of construction joints shall be

decided on convenience of construction. To avoid segregation of concrete in walls, horizontal construction joints are normally to be provided at every 2-m height. PVC water-stops of 150 mm width shall be used for walls and 230 mm width for base slabs. Alternatively contractor can use G.I. Sheets of 18 gauge and 200 mm wide.

Expansion joints for non-liquid retaining structures shall be provided as per IS 3414.

1.6 Design Conditions for Underground or Partly Underground Liquid Retaining Structures

All underground or partly underground liquid containing structures shall be designed for the following conditions:

(i) Liquid depth to be considered up to full height of wall and no relief due to soil pressure from other side to be considered.
(ii) Structure empty condition (i.e., empty of liquid, any material, etc.)**:** full earth pressure with saturation and surcharge pressure wherever applicable, to be considered.
(iii) Partition wall between dry sump and wet sump **:** to be designed for full liquid depth up to full height of wall.
(iv) Partition wall between two compartments : to be designed as one compartment empty and other full for both the directions.
(v) Structures shall be designed for uplift in empty conditions with no live load with the appropriate water table.
(vi) Walls shall be designed under operating conditions to resist earthquake forces from earth pressure mobilization and dynamic water loads.
(vii) Underground or partially underground structures shall also be checked against stresses developed due to any combination of full and empty compartments with appropriate ground/uplift pressures from below to base slab. A minimum factor of 1.2 shall be ensured against uplift or floatation.
(viii) For tender evaluation, the Soil bearing capacity is to be consider 10 MT/Sq.mt for sump and pump house foundation but on award of the work, contractor shall have to carry out detailed soil analysis & based on actual S.B.C. structure shall have to be designed.

1.7 Foundations

(i) The minimum depth of foundations for all structures, equipment, buildings and frame foundations and load bearing walls shall be as per IS 1904.
(ii) Maximum safe bearing capacity of soil strata shall be taken as indicated in geo-technical reports.
(iii) Care shall be taken to avoid the foundations of adjacent buildings or structure foundations, either existing or not within the scope of this Contract. Suitable adjustments in depth, location and sizes may have to be made depending on site conditions. No extra claims for such adjustments shall be accepted by Addl. City Engineer.

(iv) **Special attention shall drawn to danger of uplift being caused by the ground water table.Localised water table shall be consider up to existing ground level. Also Ground water table of said plot shall be study in advance inclusive of rain water/other water deposition effect to foundation. That shall be consider in design and implementation of foundation and bottom slab of structure regarding absolute resistation against uplift pressure.**

(v) All ground level structural slab wherever applicable shall be designed for uplift forces due to ground water pressure.

(vi) Where there is level difference between the natural ground level & the foundations of structure or floor slabs, this difference shall be filled up in the following ways:

- In case of non-liquid retaining structures the natural top soil shall be removed till a firm strata is reached (minimum depth of soil removed shall be 500 mm.) and the level difference shall be made up by compacted backfill as per specifications. However the thickness of each layer shall not exceed 150 mm. The area of backfilling for floor slabs shall be confined to prevent soil from slipping out during compaction. The safe bearing capacity of this well compacted backfilled soil shall not exceed 100 kN/sq.m.
- In case of liquid retaining structures, the natural top soil shall be removed as described above and the level difference shall be made up with Plain Cement Concrete (1:5:10)

1.8 Design Requirements

The following are the design requirements for all reinforced or plain concrete structures:

a) All binding and leveling concrete shall be a minimum 100 mm thick in concrete grade 1:3:6.

b) **All water retained structure are make M-30 grade mix concrete** with a maximum 20 mm aggregate size for footings and base slabs and all other structural members. The structures shall have to be designed as per IS : 3370 (Part I-IV).

c) The reinforced concrete for water retaining structures for **M-30 grade mix concrete** shall have a minimum cement content of **410 kg/m^3** with a maximum 20 mm size aggregate as per IS : 3370 (Part I-IV).

d) The minimum reinforcement for water retaining structures in each direction should be 0.35% of cross section. The minimum clear cover to all reinforcement including stirrups and links shall be 50 mm for all water retaining structures.

e) All buildings shall have a minimum 1 metre wide, 100 mm thick plinth protection paving in M15 grade concrete or stone

slabs/tiles. All plinth protection shall be supported on well compacted strata.

f) Any structure or pipeline crossing below roads shall be designed matching classification of road (anything from Class A to AA of IRC loading)

g) The bridges & bridge supporting structures shall be designed to safely withstand the loading.

h) All pipes & conduits laid below the structural plinth & road works shall be embedded in reinforced concrete of grade M15 of minimum thickness 150 mm.

i) Approved quality water proofing compound (chloride free) shall be added during concreting of all liquid containing structure in the proportions specified by manufacturer or 2 % by weight of cement whichever is higher.

- The wall and floor panels shall be poured in sequential order with a minimum time gap of 4 days.

The following minimum thickness shall be used for different reinforced concrete members, irrespective of design thickness:

(i) Walls for liquid retaining structures	: 250 mm
(ii) Roof slabs for liquid retaining structures (other than flat slabs)	: 150 mm
(iii) Bottom slabs for liquid retaining structures	: 200 mm
(iv) Floor slabs including roof slabs, walkways, canopy slabs	: 100 mm
(v) Walls of cables / pipe trenches, underground pits etc.	: 125 mm
(vi) Column footings	: 300 mm
(vii) Parapets, chajja	: 100 mm
(viii) Precast trench cover	: 75 mm

- In Mix design, the water cement ratio should not exceed 0.45. The exposer condition to be considered severe as chlorinated water is to be stored.

- The inside surface of the container of ESR and GSR shall be provided 20 mm thick water proof cement mortar plaster in CM 1:3 whereas outside surface of the GSR shall be sand faced in both admixture for water proofing comply to BIS shall add in plastering works as per guidelines of design and engineer in charge and that of all surfaces of ESR i.e. container, shaft, etc. shall be exposed finished.

1.9 Materials in General

The term "materials" shall mean all materials, goods and articles of every kind whether RAW, processed or manufactured and equipment and plant of every kind to be supplied by the Contractor for incorporation in the Works.

Except as may be otherwise specified for particular parts of the works the provision of clauses in "Materials and Workmanship" shall apply to materials and workmanship for any part of the works.

All materials shall be new and of the kinds and qualities described in the Contract and shall be at least equal to approved samples.

As soon as practicable after receiving the order to commence the Works, the Contractor shall inform Addl. City Engineer of the names of the suppliers from whom he proposes to obtain any materials but he shall not place any order without the approval of Addl. City Engineer which may be withheld until samples have been submitted and satisfactorily tested. The Contractor shall thereafter keep Addl. City Engineer informed of orders for and delivery dates of all materials.

Materials shall be transported, handled and stored in such a manner as to prevent deterioration, damage or contamination failing which such damaged materials will be rejected and shall not be used on any part of the Works under this contract.

1.10 Samples and Tests of Materials

The Contractor shall submit samples of such materials as may be required by Addl. City Engineer and shall carry out the specified tests directed by Addl. City Engineer at the Site, at the supplier's premises or at a laboratory approved by Addl. City Engineer. Addl. City Engineer may appoint separate third party inspection for the material testing to ensure the quality of the work. The Contractor shall replace the defective material as an outcome of these tests.

Samples shall be submitted and tests carried out sufficiently early to enable further samples to be submitted and tested if required by Addl. City Engineer.

The Contractor shall give Addl. City Engineer seven days' notice in writing of the date on which any of the materials will be ready for testing or inspection at the supplier's premises or at a laboratory approved by Addl. City Engineer. Representative of Addl. City Engineer shall attend the test at the appointed place within seven days of the said date on which the materials are expected to be ready for testing or inspection according to the Contractor, failing which the test may proceed in his absence unless instructed by Addl. City Engineer to carry out such a test on a mutually agreed date in his presence. The Contractor shall in any case submit to Addl. City Engineer’s Representative within seven days of every test such

number of certified copies (minimum six) of the test results as Addl. City Engineer may require.

Approval by Addl. City Engineer as to the placing of orders for materials or as to samples or tests shall not prejudice any of Addl. City Engineer's powers under the Contract.

The provisions of this clause shall also apply fully to materials supplied under any nominated sub-contract.

1.11 Standards

Materials and workmanship shall comply with the relevant Indian Standards (with amendments) current on the date of submission of the tender. All the governing items, materials, goods and equipments shall bear ISO-9001-2000 certification.

Where the relevant standard provides for the furnishing of a certificate to Addl. City Engineer, at his request, stating that the materials supplied comply in all respects with the standard, the Contractor shall obtain the certificate and forward it to Addl. City Engineer.

The specifications, standards and codes listed below are considered to be part of this Bid specification. All standards, specifications, codes of practices referred to herein shall be the latest editions including all applicable official amendments and revisions.

In case of discrepancy between the Bid Specification and the Standards referred to herein, the Bid Specification shall govern.

a) Materials

IS : 269	
IS : 383	Specification for coarse and fine aggregates from natural sources for concrete
IS : 428	Specification for distemper, oil emulsion, colour as required
IS : 432	Specification for mild steel and medium tensile steel bars and hard drawn steel wire for concrete reinforcement (Parts 1 & 2)
IS : 455	Specification for Portland slag cement
IS : 458	Specification for precast concrete pipes(with and without reinforcement)
IS : 650	Specification for standard sand for testing of cement
IS : 651	Specification for salt glazed stoneware pipes and fittings
IS : 777	Specification for glazed earthenware tiles
IS : 808	Specification for dimensions for hot rolled steel beam,

column, channel and angle sections

IS : 814 Specification for covered electrodes for manual metal arc welding of Carbon and Carbon Manganese steel

IS : 1003 Specification for timber paneled and glazed shutters(Parts 1 & 2)

Specification for steel doors, windows and ventilators

IS : 1038

IS : 1077 Specification for common burnt clay building bricks

IS : 1398 Specification for packing paper, water proof, bitumen laminated

IS : 1489 Specification for Portland pozzolana cement (Parts 1&2)

IS : 1566 Specification for hard drawn steel wire fabric for concrete reinforcement

IS :1580 Specification for bituminous compounds for water proofing and caulking purposes

IS : 1786 Specification for high strength deformed steel bars and wires for concrete reinforcement

IS : 1852 Specification for rolling and cutting tolerances for hot rolled

IS : 1948 steel products

Specification for aluminium doors, windows and ventilators

IS : 1977 Specification for structural steel (ordinary quality)

IS : 2062 Specification for steel for general structural purposes

IS : 2185 Specification for concrete masonry units (Parts 1 &

IS : 2202 2) Specification for wooden flush door shutters (Parts 1 & 2)

IS : 2645 Specification for integral cement water proofing compounds

IS : 2750 Specification for steel scaffoldings

IS : 2835 Specification for flat transparent sheet glass

IS : 3384 Specification for bitumen primer for use in waterproofing

IS : 3502 and damp roofing

Specification for steel chequerred plates

IS : 4021 Specification for timber door, window and ventilator frames

IS : 4350 Specification for concrete porous pipes for under drainage

IS : 4351 Specification for steel door frames

IS : 4990 Specification for plywood for concrete shuttering work

IS : 8112 Specification for 43 grade ordinary Portland cement

IS : 9862 Ready mixed paint, brushing, bituminous, black, lead free, acid, alkali, water and chlorine resisting

IS : 10262 Recommended guidelines for concrete mix design

IS : 12269 Specification for 53 grade ordinary Portland cement

IS : 12330 Specification for sulphate resisting Portland cement

IS : 12709 Glass fibre reinforced plastics (GRP) pipes, joints and

fittings

b) Tests for use for potable water supply

IS : 516 Method of test for strength of concrete
IS : 1182 Recommended practice for radiographic examination of fusion welded butt joints in steel plates
IS : 1199 Methods of sampling and analysis of concrete
IS : 2386 Methods of test for aggregates for concrete(Parts 1 to 8)
IS : 2720 Methods of test for soils (Parts 1 to 39)
IS : 3025 Methods for sampling and test (physical and chemical) for water and wastewater (Parts 1 to 44)
IS : 3495 Method of test for burnt clay building bricks(Parts 1 to 4)
IS : 3613 Acceptance tests for wire flux combination for submerged arc welding
IS : 4020 Methods of tests for wooden flush doors Type tests
IS : 4031 Methods of physical tests for hydraulic cement (Parts 1 to 15)
IS : 5807 Method of test for clear finishes for wooden furniture (Parts 1 to 6)
IS : 7318 Approval tests for welders when welding procedure approval is not required (Parts 1 and 2)

c) Codes of Practice

IS :456 Code of practice for plain and reinforced concrete
IS : 783 Code of practice for laying of concrete pipes
IS : 800 Code of practice for general construction in steel
IS : 806 Code of practice for use of steel tubes in general building construction
IS : 816 Code of practice for use of metal arc welding for general construction in mild steel
IS : 817 Code of practice for training and testing of metal arc welders
IS : 875 Code of practice for design loads (other than earthquake) for building structures(Parts 1 to 5)
IS : 1081 Code of practice for fixing and glazing of metal (steel and aluminum) doors, windows and ventilators
IS : 1172 Code of practice for basic requirements for water supply, drainage and sanitation
IS : 1477 Code of practice for painting of ferrous metals in buildings (Parts 1 & 2)

IS : 1597 Code of practice for construction of stone masonry (Parts 1 &2)
IS : 1742 Code of practice for building drainage
IS : 1893 Criteria for earthquake resistant design of structures
IS : 2065 Code of practice for water supply in buildings
IS : 2212 Code of practice for brickwork
IS : 2338 Code of practice for finishing of wood and wood based materials (Parts 1 & 2)
IS : 2394 Code of practice for application of lime plaster finish
IS : 2395 Code of practice for painting, concrete, masonry and plaster surfaces (Parts1 & 2)
IS : 2470 Code of practice for installation of septic tanks (Parts 1 & 2)
IS : 2502 Code of practice for bending and fixing of bars for concrete reinforcement
IS : 2571 Code of practice for laying in situ cement concrete flooring
IS : 2595 Code of practice for radiographic testing
IS : 2751 Recommended practice for welding of mild steel plain and deformed bars for reinforced construction
IS : 2974 Code of practice for design and construction of machine foundations (Parts 1 to 4)
IS : 3114 Code of practice for laying of Cast Iron pipes
IS : 3370 Code of practice for concrete structures for the storage of liquids (Parts 1 to 4)
IS : 3414 Code of practice for design and installation of joints in buildings
IS : 3558 Code of practice for use of immersion vibrators for consolidating concrete
IS : 3658 Code of practice for liquid penetrant flaw detection
IS : 3935 Code of practice for composite construction
IS : 4000 Code of practice for High strength bolts in steel structures
IS : 4014 Code of practice for steel tubular scaffolding (Parts 1 & 2)
IS : 4111 Code of practice for ancillary structures in sewerage system (Parts 1 to 4)
IS : 13920 Code of practice for laying of glazed stoneware pipes

IS: 4326 Code of practice for Earthquake Resistant Design and Construction of Buildings
IS : 4353 Recommendations for submerged arc welding of mild steel and low alloy steels
IS : 5329 Code of practice for sanitary pipe work above ground for buildings
IS : 5334 Code of practice for magnetic particle flaw detection of welds
IS : 5822 Code of practice for laying of welded steel pipes for water supply
IS : 7215 Tolerances for fabrication of steel structures

IS : 9595 Recommendations for metal arc welding of carbon and carbon manganese steels
IS : 10005 SI units and recommendations for the use of their multiples and of certain other units

d) Construction Safety

IS : 3696 Safety code for scaffolds and ladder (Parts 1 & 2) IS : 3764 Safety code for Excavation work
IS : 7205 Safety code for erection of structural steel work

1.12 Orientation

The works shall be laid out within the confines of the Site in order to interface to the existing infrastructure of roadways and inlet and outlet pipe work
Underground services requiring to be relocated in order to accommodate the
proposed site layout shall, with the approval of Addl. City Engineer, be relocated by the Contractor.

1.13 Valve Chambers

a) All valve chambers are to be of an adequate size to facilitate maintenance and operation. The base slab of valve chambers shall slope towards a sump pit from which water can be pumped to keep the chamber dry. All valve chambers shall be constructed in M15 grade reinforced concrete. Chambers shall have removable cast iron / reinforced concrete covers, as appropriate, approach ladders and valve supports.

1.14 Landscaping

The pump house plot site shall be landscaped once the Works are substantially complete. The landscaping scheme shall be submitted and got approved from Addl. City Engineer prior to start of actual work.

Landscaping shall include planting of suitable trees and development of grassed areas. Landscaping in general shall meet ecological and environmental conditions of the site. Road widths shall determine the size of the tree height and spread to be selected for planting. Trees suitable for local conditions shall be selected. Medicinal and fruit trees shall be avoided.

Ready Mix Concrete:

Form Work

The form work shall conform to the shape lines and dimension as shown on the plans and be so constructed as to remain sufficiently rigid during the placing and compacting of the concrete. Adequate arrangements shall be made by the contractor to safe-guard against any settlement of the form

work during the course of concreting and after concreting. The form work of shuttering, centering, scaffolding bracing etc. shall be as per design.

Cleaning & Treatment of forms :- All rubbish, particularly chippings shaving and saw dust shall be removed from the interior of the Form before the concrete is placed and the form work in contact with concrete shall be cleaned and thoroughly Welted or treated. The surface shall be then coated with soap solution applied before concreting is done. Soap solution for the purpose shall be prepared by dissolving yellow soap in water to get consistency of Paint. Alternatively a coat of raw linseed oil or form oil of approved manufacture may be applied in' case steel Shuttering is used. Soap solution or raw linseed oil shall be applied after thoroughly cleaning the surface. Care shall be taken that the coating does not get on construction joint surface and reinforcement bars.
Stripping time:- 1 In normal circumstances and where ordinary cement is used forms may be struck after expiry of following periods. :

In normal circumstances and where ordinary cement is used forms may be struck after expiry of following periods. :

(a) Sides of walls columns and vertical faces of beam -24 to 48 hours.
(b) Beam softies; (Props left under) -7 days.
(c) Removal of props slabs.
    (i) Slabs spanning up to4.5m. ---------- 7 days.
    (ii) Spanning over 4.5 mm. - ----------14 days.
(d) Removal of props to beams and Arches
    (i) Spanning up to 6---------- 14 days,
    (ii) Spanning over 6 m. ---------- 21 days

Procedure when removing the form work:- All form work shall be removed without such shock or vibrations as would damage the reinforced concrete surface. Before the softies form work and struts are removed, the Softies and the concrete surface shall be exposed' where necessary in order to ascertain that the concrete has sufficiently hardened.

Centering:
The centering to be provided shall be got approved. It shall be sufficiently strong to ensure absolute safely of the form work and concrete work before, during and after pouring concrete. Watch should be kept to see that behavior of centering and form work is satisfactory during concreting. Erection should also be such that it would allow removal of forms in proper sequence without damaging either the concrete or the forms tote removed.

The props of centering shall be provided on firm foundation or base of sufficient strength to carry the loads without any settlement. The centering and form work shall be inspected and approved by the Engineer-in-charge before Concreting. But this will not relieve the contractor of his responsibility for strength, adequacy and safety of Form work and centering. If there is a failure of form work or centering, contractor shall be responsible for the Damages to the work, injury to life and damage to property.

Scaffolding: AH scaffolding, hoisting arrangements and ladders etc. required for the facilitating of concreting shall be provided and removed on completion work by contractor at his own expense. The scaffolding, hoisting Arrangements and ladders etc. shall be strong enough to withstand all live, dead and impact loads expected.

3.7 Concrete

3.7.1 General

In concrete grade M15, M20, M25, M30 etc. the number represents the specified characteristic compressive strength of 150 mm cube at 28 days, expressed in N/sq. mm as per IS: 456. Concrete in the works shall be "DESIGN MIX CONCRETE" or "NOMINAL MIX CONCRETE". All concrete works of grade M5, M7.5 and M10 shall be NOMINAL MIX CONCRETE whereas all other grades, M15 and above, shall be DESIGN MIX CONCRETE.

3.7.2 Design Mix Concrete

(a) Mix Design & Testing

For design mix concrete, the mix shall be designed according to IS: 10262 and SP: 23 to provide the grade of concrete having the required workability and characteristic strength not less than appropriate values given in IS: 456. The design mix shall in addition to such that it is cohesive and does not segregate and should result in dense and durable concrete and also capable of giving the finish as specified. For water retaining structure, the mix shall also result in water tight concrete. The Contractor shall exercise great care while designing the concrete mix and executing the workers to achieve the desired result.

Unless otherwise specially mentioned, the minimum cement content and maximum water cement ratio for Design Mix Concrete shall be as given below :

Grade of Concrete	**Minimum cement Content in Kg/Cum of**	**Maximum**
M20	360	0.55
M25	380	0.50
M30	400	0.45

The minimum cement content stipulated above shall be adopted irrespective of whether the Contractor achieves the desired strength with less quantity of cement. The CONTRACTOR's quoted rates for concrete shall provide for the above eventuality and nothing extra shall become payable to the CONTRACTOR in this account. Even in the case where the quality of cement required is higher than that specified above to achieve desired strength based on an approved mix design, nothing extra shall become payable to the CONTRACTOR.

It shall be the Contractor's sole responsible to carry out the mix designs at his own cost. He shall furnish to the Engineer-in-charge at least 30 days before concreting operations, a statement of proportions proposed to be used for the various concrete mixes ascertained on 150 mm cubes as per IS:516 shall comply with the requirements of IS:456.

Grade of Concrete	Minimum compressive strength N/Sq.mm	Specified characteristic compressive
M15	10.0	15.0
M20	13.5	20.0
M25	17.0	25.0
M30	20.0	30.0
M35	23.5	35.0
M40	27.0	40.0

A range of slump which shall generally be used for various types of construction unless otherwise instructed by the Engineer-in-charge is given below:

Structure/Member	Slump in	
	Maximu	Minimu
Reinforced foundation walls and footings	75	25
Plain footings, caissons and substructure walls	100	25
Slabs, Beams and reinforced walls Pump & miscellaneous	75	25
Foundations	100	25
Building Column	50	25
Pavements	50	25
Heavy mass construction	50	25

(b) Batching & Mixing of Concrete

Proportions of aggregates and cement, as decided by the concrete mix design, shall be by weight. There proportions shall be maintained during subsequent concrete batching by means of weigh batchers capable of controlling the weights within one
percent of the desired value. Amount of water added shall be such as to produce dense concrete of required consistency, specified strength and satisfactory workability and shall be so adjusted to account for moisture content in the aggregates. Water-cement ratio specified
for use by the Engineer-in-charge shall be maintained. Each time the work stops, the mixer shall be cleaned out, and while recommencing, the first batch shall have 10% additional comment to allow for sticking in the drum.

Arrangement should be made by the Contractor to have the cubes tested in an approved laboratory or in field with prior consent of the Engineer-in-charge. Sampling and testing of strength and workability of concrete shall be as per IS: 1199, IS: 516 and IS: 3370.

(c) Ready Mix Concrete

Minimum cement consumption shall be as specified in tender document. However, necessary computer print out for consumption of all materials an admixtures if permitted shall be made available as and when required in any frequencies as directed by Engineer –in-charge.

Necessary slump requirements at the pouring places shall be made available with ready mix concrete.

Concrete mix shall be design for 33% higher strength than the grade of concrete specified. The proportions for ingredients chosen shall be such that concrete has adequate workability for condition prevailing on the work in question and can be properly compacted with the means available. Use of cementacious material like Fly ash etc. shall not be permissible.

Except where it can be shown to the satisfaction of the Engineer-in-charge that a supply of properly graded aggregate of uniform quality can be maintained till the completion of work, grading of aggregate should be strictly controlled. The different sizes shall be stocked in separate stock piles. Required quality of material shall be stock-piled several hours, preferably a day, before use. Grading of coarse and fine aggregate shall be checked as frequently as possible, frequency for a given job being determined by the Engineer-in-charge to ensure that the suppliers are maintaining the uniform grading as approved for samples use din the design mix.

The quantity of both cement and aggregate shall be determined by weight. Water shall either be measured by volume in calibrated tanks or weighed. All measuring equipment shall be maintained in a clean and serviceable condition. Their accuracy shall be periodically checked.

If is most important to keep the specified water – cement ration constants and its correct value. To this end, the moisture content in both fine and coarse aggregates shall be determined by the Engineer-in-charge according to the weather conditions. The amount of mixing water shall then be adjusted to compensate for variations in the moisture content. For the determination of moisture content in the aggregates, IS: 2386 (Part-III) shall be referred to. Suitable adjustments shall also be made in the weights of aggregates to allow for the variation in weights of aggregates due to variation in their moisture content.

The special Conditions / Specification regarding **Ready Mix Concrete** are as follows. The details like locations, capacity, experience, delivery schedule etc. of the **Ready Mix Concrete** agency shall be submitted by the successfully tenderer for prior approval of the undersigned.

The **Ready Mix Concrete** shall be conforming to IS :4926 with its latest amendments.

All the responsibility of **Ready Mix Concrete** i.e. procurement for all materials, operation of plant and machinery, transit mixers, pumping machineries relevant piping etc. shall be on the account of the contractor.

The Rajkot Municipal Corporation shall not be held responsible for any delay / damage / loss due to deployment of **Ready Mix Concrete** for this project.

The octroi or any other type of tax / cess for the **Ready Mix Concrete** shall have to be borne by the contractor as per prevailing rates. **Ready Mix Concrete** process shall be fully automatic and computerized.

When a transit mixer is used for transportation of concrete, no extra water should be added to the concrete from else where after initial introduction of mixing water from the batch, except when on arrival at the site of the work, the slump of the concrete is less than that specified : such additional water to bring the mixer under such pressure and direction of flow that requirements for uniformity are met.

Records and certificates :
The contractor shall keep from the manufacture batch records of the quantities by mass of all mixing and of the results of all tests. If required by the Rajkot Municipal Corporation, the contractor shall furnish certificates, at agreed intervals, giving this information.

The contractor shall supply the following information for guidance of the manufacturer :

- The type of cement to be used
- Details Specification of aggregates to be used.
- Type of admixture to be used. If specified.
- Min. acceptable strength
- Slump of concrete or compaction factor
- Ages at which the test cubes or beams are to be tested and the frequency and number of test to be made.
- Any other requirement.

Tolerance : Unless otherwise agreed to between the Rajkot Municipal Corporation (RMC) and the contractor, the concrete shall be deemed to comply with the requirements of this, if these results of testes where applicable lie with in the tolerance specified below.

Consistency of workability : The slump average of two tests shall not differ from the specified value by + 10 mm for a specified slump of 75 mm. The compacting factor average of two tests shall be within + 0.03 of the value specified. If any other method of determining consistency to be used a suitable tolerance shall be agreed to be between the purchaser and the manufacture. The tests for consistency or workability shall be complete within 15 minutes of the time of receipt of the ready mix concrete at the site.

Aggregate : When tested in accordance with IS 2386 (Part-I) 1963, the quantity of aggregate larger than the max size specified by the purchaser shall not exceed 5% of the qty. of coarse aggregate and all such pass sieve of next higher size.

3.7.3 Nominal Mix concrete. (DELETED)
(a) Mix design and testing

Mix design and preliminary test are not necessary for Nominal Mix concrete. However works test shall be carried out as per IS : 456. Proportions for Nominal Mix Concrete and w/c ratio may be adopted as per Table 3 of IS :

456. However it will be the Contractor's role responsibility to adopt appropriate nominal mix proportions to yield the specified strength.

(b) Batching & Mixing of Concrete

Based on the adopted nominal mixes, aggregates shall be measured by volume. However cement shall be by weight only.

3.8 Formwork

formwork shall be all inclusive and shall consist of but not be limited to shores, bracing's sides of footing , walls, beams and columns, bottom of slabs etc. including ties, anchors, hangers, inserts, false work, wedges etc.

The design and engineering of the formwork as well its construction shall be the responsibility of the Contractor. However, if so desired by the Engineer-in-charge the DRAWING and calculating for the design of the formwork shall be submitted to the Engineer-in-charge for approval.

Formwork shall be designed to fulfill the following requirements:

(a) Sufficiently rigid and tight to prevent loss of grout or mortar from the concrete at all stages and appropriate to the method of placing and compacting.

(b) Made of suitable materials.

(c) Capable of providing concrete of the correct shape and surface finish within the specified tolerance limits.

(d) Capable of withstanding without deflection the worst combination of self weight, reinforcement and concrete weight, all loads and dynamics effect arising from construction and compacting activities, wind and weather forces.

(e) Capable of easy striking out without shocks, disturbance or damages to the concrete.

(f) Soffit forms capable of imparting a camber if required.

(g) Soffit forms and supports capable of being left in position if required.

(h) Capable of being cleaner and/or coated if necessary immediately prior to casting the concrete; design temporary openings where necessary for these purposes and to facilitate the preparation of construction joints.

The formwork may be of timber, plywood, steel, plastic or concrete depending upon the approval of the Engineer-in-charge. Timber of formwork shall be well seasoned, free sap, shakes, loose knots, worm holes, warps and other surface defects. Joints between formwork and formwork and between formwork and structures shall be sufficiently tight to prevent loss of slurry from concrete, using seals if necessary.

The faces of formwork coming in contact with concrete shall be cleaned and two coats of approved mould oil applied before fixing reinforcement. All rubbish, particularly chippings, sailings, sawdust, wire pieces dut etc. shall be removed from the interior of the forms before the concrete is placed. Where directed, cleaning of forms shall be done by blasting with a jet of compressed air at no extra cost.

Forms intended for reuse shall be treated with care. Forms that have deteriorated shall not be used. Before reuse, all forms shall be thoroughly scraped, cleaned, nails removed, holes suitably plugged, joints repaired and warped lumber replaced to the satisfaction of the Engineer-in-charge. The Contractor shall equip himself with enough shuttering to allow for wastage so as to complete the job in time.

Permanent formwork shall be checked for its durability and compatibility with adjoining concrete before it is used in the structure. It shall be property anchored to the concrete.

Wire ties passing through beams, columns and walls shall not be allowed. In their place bolts passing through sleeves shall be used. Formwork spacers left in situ shall not impair the desired appearance or durability of the structure by causing spelling, rust staining or allowing the passage of moisture.

For liquid retaining structures, sleeves shall not be provided for through bolts nor shall through bolts be removed if provided. The bolts, in the latter case, shall be cut at
25 mm depth from the surface and the hole made good by cement mortar of the same proportion as the concrete just after striking the formwork.

Where specified all corners and angles exposed in the finished structure shall have chamfers or fillets of 20 mm X 20 mm size.

Form for substructure may be omitted when, in the opinion of the Engineer-in- charge, the open excavation is firm enough (in hard non-porous soils) to act as a form, such excavation shall be larger, as approved by the Engineer-in-charge that required as per DRAWING to compensate for irregularities in excavation.

The Contractor shall provide adequate props carried down to a firm bearing without overloading any of the structure.

The shuttering for beams and slabs shall be so erected that the side shuttering of beams can be removed without disturbing the bottom shuttering .If the shuttering for a column is erected for the full height of the column, one side shall be build up in sections as placing of concrete proceeds or windows left for placing concrete from the side to limit the drop of concrete to 1.0 m or as approved by the Engineer-in-charge. The Contractor shall temporarily and securely fix items to be cast (embodiment's/inserts) in a manner that will not hinder the striking of forms or permit loss of grout.

Formwork showing excessive distortion, during any stage of construction, shall be repositioned and strengthened. Placed concrete affected by faulty formwork, shall be entirely removed and formwork corrected prior to placement of new concrete at Contractor's cost.

The striking time for formwork shall be determined based on the following requirement:

a) Development of adequate concrete strength;
b) Permissible deflection at time of striking form work;
c) Curing procedure employed-its efficiency and effectiveness;
d) Subsequent surface treatment to be done;
e) Prevention of thermal cracking at re-entrant angles;
f) Ambient temperatures;
g) Aggressiveness of the environment (unless immediate adequate steps are taken to prevent damage to the concrete).

Under normal circumstances (generally where temperatures are above 20^{O} C) forms may be struck after expiry of the time period given in IS:456 unless approved otherwise by Engineer-in-charge, it is the Contractor's responsibility to ensure that forms are not struck until the concrete has developed sufficient strength to support itself, does not undergo excessive deformation and resist surface damage and any stresses arising during the construction period.

3.9 Reinforcement
Workmanship

Reinforcement bars supplied bent or in coils shall be straightened cold without damage. No bending shall be done when ambient temperature is below 5^{O}C. Local warming may be permitted if steel is kept below 5^{O}C.

All bars shall be accurately bent gradually and according to the size and shapes shown on the DRAWING schedules or a directed by Engineer-in-charge.
Re-bending or straightening incorrectly bent bars shall not be done without the approval of the Engineer-In-Charge.

Reinforcement shall be accurately fixed and maintained firmly in the correct position by the use of blocks, spacers, chairs, binding wire etc. to prevent displacement during placing and compaction of concrete. The tied in place reinforcement shall be approved by the Engineer-in-charge prior to concrete placement. Spacers shall be of such materials and design as will be durable, not lead to corrosion of the reinforcement and not cause spelling of the concrete cover.

Binding wire shall be 16 gauges soft annealed wire. End of the binding wire shall be bent away from the concrete surface and in no case encroach into the concrete cover.

Substitution of reinforcement; laps/splices not shown on Drawing shall be subject to Engineer-in-charge's approval.

3.10 Tolerances

Tolerance for formwork and concrete dimensions shall be as per IS: 456 unless specified otherwise.

Tolerances specified for horizontal or vertical building lines or footings shall not be construed to permit encroachment beyond the legal boundaries.

The formwork shall be designed and constructed to the shapes, lines and dimensions shown on the Drawings within the tolerances given below:

(a)	Deviation from specified dimensions of cross section of columns and beams	-6 mm
(b)	Deviations from dimensions of footings (tolerances apply to concrete dimensions only, not to positioning of vertical reinforcing steel or dowels)	+12 mm
1.	Dimension in plan	-12 +50 mm
2.	Eccentricity	0.02 times the width of the footing in the direction of deviation but not more than
3.	Thickness	+0.05 times the specified thickness

3.11 Preparation Prior to Concrete

Placement

Before concrete is actually placed in position, the inside of the formwork shall be cleaned and mould oil applied, insert and reinforcement shall be correctly positioned and securely held, necessary openings, pockets, etc. provide.

All arrangements formwork, equipment and proposed procedure, shall be approved by the Engineer-in-charge, Contractor shall maintain separate Pour card for each pour as per the format enclosed.

3.12 Transporting, Placing and Compacting Concrete

Concrete shall be transported from the mixing plant to the formwork with minimum time lapse by methods that shall maintain the required workability and will prevent segregation, loss of any ingredients or ingress of foreign matter or water.

In all cases concrete shall be deposited as nearly as practicable directly in its final position. To avoid segregation, concrete shall not be rehandled or cause to flow. For locations where direct placement is not possible and in

narrow forms the Contractor shall provide suitable drops and "Elephant Trunks". Concrete shall not be dropped from a height of more than 1.0 m

Concrete shall not be placed in flowing water. Under water, concrete shall be placed in position by termites or by pipeline from the mixer and shall never be allowed to fall freely through the water.

Concreting under water :
When it is necessary to deposit concrete under water, the methods, equipments, and materials of the mix to be used shall be got approved from the Engineer-in- charge before any work is started. Such concreting be considered as controlled concrete i.e. design mix.

Concrete shall not be placed under temperature below 50 degree centigrade. The temperature of concrete, when deposited, shall be however not less than 50 centigrade nor more than 40 degree centigrade.

Concrete to be placed under water shall contain ten percent more cement than that required for the same mix placed in the dry.

The slump shall not be less than 100 mm nor more than 180 mm. The slump shall be tested as per I. S. 516.

Coffer-dams or forms shall be water tight to ensure still water conditions if practicable and in any case to reduce the flow of water to less than 3 meters per minute through the space into which concrete is to be deposited. The forms in still water shall be sufficiently tight to prevent loss of mortar through the joints in the walls. Pumping shall not be done while concrete is being placed, or until 24 hours thereafter.

Concrete shall continue to be deposited until it has been brought to the required height. The top surface shall always be kept as wet as far as possible and formation of seems avoided. For concrete any one of the following methods may be used.

(a) Tremie :
When concrete is to be deposited under water by means of tremie, the top section of the tremie shall be a hopper large enough to hold one full batch mix or the entire contents of the transporting bucket. The tremie pipe shall not be less than 200 mm dia. and also shall be large enough to allow a free flow of concrete and strong enough to with stand the external pressure of water in which it is suspended, even if a partial vacuum develops inside the pipe. Preferably, flanged steel pipe of adequate strength for the job shall be used. A separate lifting device shall be provided for each tremie pipe with its hopper at the upper end. Unless the lower end of the pipe is equipped with an approved automatic check valve, the upper end of the pipe shall be plugged with a wedging by use of gunny sacks or other approved material before delivering the concrete to the tremie pipe through the hopper, so that when the concrete is forced down from the hopper to the pipe, it will force the plug (and along with it any water in the pipe) down the pipe and out of the bottom end. Thus establishing a continuous stream of concrete. It will be necessary, to raise slowly the tremie in the order to allow

a uniform flow of concrete, but it shall not be emptied so that water enters above the concrete in the pipe.

At all times after the placing of concrete is started and until all the requirement quantity has been placed, the lower end of the tremie pipe shall be kept below the top surface of the plastic instead of flowing out over the surface, and thus avoid formation of layers of laitance. If the charge in the tremie is lost while depositing, the tremie shall be raised above the concrete surface, and unless sealed by a check valve it shall be re-plugged at the top end, as at the beginning before refilling for depositing further concrete.

(b) Drop Bottom Bucket :

The top of the bucket shall be closed. The bottom doors shall move freely downward and outward when tripped. The bucket shall be filled completely and lowered slowly to avoid backwash. It shall not be dumped until it rests on the surface upon which the concrete is to be deposited and when discharged shall be withdrawn slowly until well above the concrete.

To minimize the formation of laitance, great care shall be exercised to disturb the concrete as far as possible while it is being deposited.

While placing concrete the Contractor shall proceeds as specified below and also ensure the following.

a) Continuously between construction joints and pre-determined abutments.
b) Without disturbance to forms or reinforcement.
c) Without disturbance to pies, ducts, fixing and the like to be cast in: ensure that such items are securely fixed. Ensure that concrete cannot enter open ends of pipes and conduits etc.
d) Without dropping in a manner that could cause segregation or shock.
e) In deep pours only when the concrete and formwork designed for this purpose and by using suitable chutes or pipes.
f) Do not place if the workability is such that full compaction cannot be achieved.
g) Without disturbing the unsupported sides of excavations; prevent contamination of concrete with earth. Provide sheeting if necessary. In supported excavations, withdraw the lining progressively as concrete is placed.
h) If placed directly on to hardcore or any other porous material, dampen the surface to reduce loss of water from the concrete.;
i) Ensure that there is no damage or displacement to sheet membranes.
j) Record the time and location of placing structural concrete.

Concrete shall normally be compacted in its final position within thirty minutes of leaving the mixer. Concrete shall be compacted during placing with approved vibrating equipment without causing segregation until it forms a solid mass free from voids thoroughly worked around reinforcement and embedded fixtures and into all corners of the formwork. Immersion vibrators shall be inserted vertically at points not more than 450 mm apart and withdrawn slowly till air bubbles cease to come to the surface, leaving no voids. When placing concrete in layers advancing horizontally, care shall be taken to ensure adequate vibration

blending and melting of the concrete between successive layers. Vibrators shall not be allowed to come in contact with reinforcement, formwork and finished surfaces after start of initial set. Over-vibration shall be avoided.

Concrete may be conveyed and placed by mechanically operated equipment after getting the complete procedure approved by the Engineer-in-charge. The slump shall be held to the minimum necessary for conveying concrete by this method. When concrete is to be pumped, the concrete mix shall be specially designed to suit pumping. Care shall be taken to avoid stoppages in work once pumping has started.

Except when placing with slip forms, each placement of concrete in multiple lift work shall be allowed to set for at least 24 hours after the final set of concrete before the start of subsequent placement. Placing shall stop when concrete reaches the top of the opening in walls or bottom surface of slab, in slab and beam construction, and it shall be resumed before concrete takes initial set but not until it has had to settle as approved by the Engineer-in-charge. Concrete shall be protected against damage until final acceptance.

3.13 Mass Concrete Works

Sequence of pouring for mass concrete works shall be as approved by the Engineer- in- charge. The Contractor shall exercise great care to prevent shrinkage cracks and shall monitor the temperature of the placed concrete if directed.

3.14 Curing

Curing and protection shall start immediately after the compaction of the concrete to protect it from:

a) Premature drying out, particularly by solar radiation and wind;
b) Leaching out by rain and flowing water;
c) Rapid cooling during the first few days after placing;
d) High internal thermal gradients;
e) Low temperature or frost;
f) Vibration and impact which may disrupt the concrete and interfere with its bond to the reinforcement.

All concrete, unless approved otherwise by the Engineer-in-charge shall be cured by use of continuous sprays or pounded water or continuously saturated coverings of sacking, canvas, hessian or other absorbent material for the period of complete hydration with a minimum of 7 days. The quality of curing water shall be the same as that used for mixing.

Where a curing membrane is approved to be used by the Engineer-in-charge, the same shall be of a non-wax bas and shall not impair the concrete finish in any matter. The curing component to be used and shall be applied with spraying equipment capable of a smooth, even textured coat.

Curing may also be done by covering the surface with an impermeable material such as polyethylene, which shall be sealed and fastened.

3.15 Construction Joints and Keys

Construction joints will be shown on the DRAWING or as approved by the Engineer- in- charge. Concrete shall be placed without interruption until completion of work between construction joints. If stopping of concreting becomes unavoidable anywhere, a properly formed, construction joints shall be made with the approval of the Engineer- in-charge.

Dowels for concrete work, not likely to be taken to be taken up in the near future, shall be coated with cement slurry and encased in lean concrete as indicated on the DRAWINGS or as approved by the Engineer-in-charge.

Before resuming concreting on a surface which has not fully hardened, all laitance and loose stone shall be thoroughly removed by wire brushing/hacking and surface washed with high pressure water jet and treated with thin layer of cement slurry for vertical joints and horizontal layers.

When concreting is to be resumed on a surface which has not fully hardened, all laitance shall be removed by wire brushing the surface wetted, free water removed and a coat of cement slurry applied. On this, a layer of concrete not exceeding 150 mm thickness shall be placed and well rammed against the old work. Thereafter work shall proceed in the normal way.

3.16 Foundation Bedding

All earth surfaces upon which or against which concrete is to be placed, shall be well compacted and free from standing water, mud or debris. Soft or spongy areas shall be cleaned out and back filled with either soil-cement mixture, lean concrete or clean sand compacted as approved by the Engineer-in-charge. The surfaces of absorptive soils shall be moistened.

Concrete shall not be deposited on large sloping rock surfaces. The rock shall be cut to form rough steps or benches by picking, barring or wedging. The rock surface shall be kept wet for 2 to 4 hours before concreting.

3.17 Finishes

3.17.1 General

The formwork for concrete works shall be such as to give the finish as specified. The Contractor shall make good any unavoidable defects as approved consistent with the type of concrete and finish specified. Defects due to bad workmanship (e.g. damaged or misaligned forms, defectives or poorly compacted concrete) will not be accepted. The Contractor shall construct the formwork using the correct materials and meet the requirements of the design and to produce finished concrete to required dimension, plumbs, planes and finishes.

3.17.2 Surface Finish Type F1

The main requirement is that of dense, well compacted concrete. No treatment is required except repair of defective areas filling all form tie holes and cleaning up of loose or adhering debris. For surface below grade which will receive waterproofing treatment the concrete shall be free of surface

irregularities which would interfere with proper and effective application of waterproofing material specified for use.

3.17.3 Surface Finish Type F2

The appearance shall be that of a smooth dense, well-compacted concrete showing the slight marks of well fitted shuttering joints. The Contractor shall make good any blemishes.

3.17.4 Surface Finish Type F3

This finish shall give an appearance of smooth, dense, well-compacted concrete with no shutter marks, stain free and with no discoloration, blemishes, arises, air holes etc. only lined or coated plywood with very tight joints shall be used to achieve this finish. The panel size shall be uniform and as large as practicable. Any minor blemishes that might occur shall be made good by the Contractor.

3.17.5 Integral Cement Finish on Concrete Floor

In all cases where integral cement finish on a concrete floor has been specified, the top layer of concrete shall be screeded off to proper level and tamped with tamper having conical projections so that the aggregate shall be forced below the surface. The surface shall be finished with a wooden float and a trowel with pressure. The finish shall be continued till the concrete reaches its initial set. No cement or cement
mortar finish shall be provided on the surface. Where specified, a floor hardener as approved by the Engineer-in-charge shall be supplied and used as recommended by the manufacturer.

3.18 Repair and Replacement of Unsatisfactory Concrete

Immediately after the shuttering is removed, all the defective areas such as honeycombed surfaces, rough patches and holes left by form bolts etc. shall be inspected by the Engineer-in-charge who may permit patching of the defective areas or reject the concrete work.

All through holes for shuttering shall be filled for full depth and neatly plugged flush with surface.

Rejected concrete shall be removed and replaced by the Contactor at no additional cost of the Owner.

For patching of defective areas all loose materials shall be removed and the surface shall be prepared as approved by the Engineer-in-charge.

Bonding between hardened and fresh concrete shall be done either by placing cement mortar or by applying epoxy. The decision of the Engineer-in-charge as to the method of repair to be adopted shall be final and binding on the Contractor. The surface shall be saturated with water for 24 hours before patching is done with 1:1 cement sand mortar. The use of epoxy for rebinding fresh concrete shall be carried out as approved by the Engineer-in-charge.

3.19 Vacuum dewatering of Slabs

Where specified floor slabs, either grade or suspended, shall be finished by vacuum dewatering including all operations such as poker vibration, surface vibration, vacuum processing, flatting and trowelling as per equipment manufacturers recommendation.

The equipment to be used shall be subject to the Engineer-in-charge.

3.20 Hot Weather Requirements

Concrete during hot weather shall be carried out as per IS: 7861(Part I).

Adequate provisions shall be made lower concrete temperatures which shall not exceed 40^{O}C at the time of placement of fresh concrete.

Where directed by the Engineer-in-charge, the Contractor shall spray non-wax based curing compound on unformed concrete surfaces at no extra costs.

3.21 Cold weather Requirement

Concreting during cold weather shall be carried out as per IS: 7861(Part II).

The ambient temperature during placement and up to final set shall not fall below 5 deg.C. Approved antifreeze/accelerating additives shall be used where directed.

For major and large scale concreting works the temperature of concrete at times of mixing and placing, the thermal conductivity of the formwork and its insulation and stripped period shall be closely monitored.

3.22 Liquid Retaining Structures

The Contractor shall take special care for concrete for liquid retaining structures, underground structures and those others specifically called for to guarantee the finish and water tightness.

The minimum level of surface finish for liquid retaining structures shall be Type F2. All such structures shall be hydro-tested.

The Contractor shall make all arrangement for hydro-testing of structure, all arrangements for testing such as temporary bulk heads, pressure gauges, pumps, pipe lines etc.

The Contractor shall also make all temporary arrangements that may have to be made to ensure stability of the structures during construction.

Any leakage that may occur during the hydro-test or subsequently during the defects liability period or the period for which the structure is guaranteed shall be effectively stopped either by cement/epoxy pressure grouting, guniting or such other methods as may be approved by the Engineer-in-charge. All such rectification shall be done by the CONTRACTOR to the entire satisfaction of the Engineer-in-charge at no extra cost to the OWNER.

3.23 Testing Concrete Structures for Leakage

Hydro-static test for water tightness shall be done at full storage level or soffit of cover slab, as may be directed by the Engineer-in-charge as described below:

In case of structures whose external faces are exposed, such as elevated tanks, the requirements of the test shall be deemed to satisfied if the external forces show no sign off leakage or sweating and remain completely dry during the period of observation of seven days after allowing a seven day period for absorption after filling with water.

In the case of structures whose external faces are buried and are not accessible for inspection, such as underground tanks, the structures shall be filled with water and after the expiry of seven days after the filling; the level of the surface of the water shall be recorded. The level of water shall be recorded again at subsequent intervals of 24 hrs. over a period of seven days. Backfilling shall be withheld till the tanks are tested .The total drop in surface level over a period for seven days shall be taken as an indication of the water tightness of the structure. The Engineer-in-charge shall decide on the actual permissible nature of this drop in the surface level, taking into account whether the structures are open or closed and the corresponding effect it has on evaporation looses. Unless specified otherwise, a structure whose top is covered shall be deemed to be water tight if the total drop in the surface level over a period of seven days does not exceed 40 mm.

Each compartment/segment of the structure shall be tested individually and then all together.

For structures such as pipes, tunnels etc. the hydrostatic test shall be carried out by filling with water , after curing as specified ,and subjecting to the specified test pressure for specified period .If during this period the loss of water does not exceed the equivalent of the specified rate, the structure shall be considered to have successfully passed the test.

3.24 Optional Tests

If the Engineer-in-charge feels that the materials i.e. cement, sand, coarse aggregates, reinforcement and water are not in accordance with the Specifications or if specified concrete strengths are not obtained, he may order tests to be carried out on these materials in laboratory, to be approved by the Engineer-in-charge as per relevant IS Codes. Contractor shall have to pay for these tests.

In the event of any work being suspected of faulty material or workmanship requiring is removal or if the works cubes do not give the stipulated strengths, the Engineer-in- charge reserves the right to order the Contractor to take out cores and conduct tests on them or do ultrasonic testing or load testing of structure ,etc. The Engineer-in- charge also reserves the right to ask the Contractor to dismantle and re-do such unacceptable work, at no cost to the Owner. Alternately Engineer-in-charge also reserves the right to ask the COTRACTOR to dismantle and re-do such unacceptable work at the cost of CONTRACTOR.

3.25 Grouting

3.25.1 Standard Grout

Grout shall be provided as specified on the DRAWINGS.

The proportion of Standard grout shall be such as to produce a flow able mixture consistent with minimum water content and shrinkage. Surfaces to be grouted shall be thoroughly roughened and cleaned. All structural steel elements to be grouted shall be cleaned of oil, grease, dirt etc. The use of hot, strong caustic solution for this purpose will be permitted. Prior to grouting, the hardened concrete shall be saturated with water and just before grouting, water in all pockets shall be removed. Grouting once started shall be done quickly and continuously. Variation in grout mixes and procedures shall be permitted if approved by the Engineer-in-charge. The grout proportions shall be limited as follows:

Sr no	Use	Grout Thickness	Mix Proportions	W/C Ratio
a)	Fluid mix	Under 25 mm	One part Portland Cement to one part sand	0.44
b)	General mix	25 mm and over but less than 50 mm	One part Portland Cement to two part sand	0.53
c)	Stiff mix	50 mm and over	One part Portland Cement to	0.53

3.25.2 Non-Shrink Grout

Non-shrink grout where required shall be provided in strict accordance with the manufacturer's instructions/specifications on the DRAWINGS.

General

Inspection

All materials, workmanship and finished construction shall be subject to continuous inspection and approval of Engineer-in-charge. Material rejected by Engineer-in- charge, shall be expressly removed from site and shall be replaced by Contractor immediately.

Clean-up

Upon the completion of concrete work, all forms, equipment, construction tools, protective coverings and any debris, scraps of wood, etc. resulting from the work shall be removed and the premises left clean.

Acceptance Criteria

Any concrete work shall satisfy the requirements given below individually and collectively for it to be acceptable.

a) Properties of constituent material;
b) Characteristic compressive strength;
c) Specified mix proportions;
d) Minimum cement content;
e) Maximum free-water/cement ratio;
f) Workability;
g) Temperature of fresh concrete;
h) Density of fully compacted concrete;
i) Cover to embedded steel;
j) Curing;
k) Tolerances in dimension; l) Tolerance in levels; m)Durability;

n) Surface finishes;
o) Special requirements such as;
- i) Water tightness
- ii) Resistance to aggressive chemicals
- iii) Resistance to freezing and thawing
- iv) Very high strength
- v) Improved fire resistance
- vi) Wear resistance
- vii) Resistance to early thermal cracking

The Engineer-in-charge decision as to the acceptability or otherwise of any concrete work shall be final and binding on the Contractor.

For work not accepted, the Engineer-in-charge may review and decide whether remedial measures are feasible so as to render the work acceptable. The Engineer-in- charge shall in that case direct the Contractor to undertake and execute the remedial measures.

These shall be expeditiously and effectively implemented by the Contractor. Nothing extra shall become payable to the contractor by the Owner for executing the remedial measures.

3.26 Water stops
3.26.1 Material

The material for the PVC water stops shall be a plastic compound with the basic resin of polyvinyl chloride and additional resins, plasticizers, inhibitors, which satisfies the performance characteristics specified below as per IS: 12200. Testing shall be in accordance with IS: 8543.

a)	Tensile strength	3.6 N/mm^2 minimum
b)	Ultimate elongation	300% minimum
c)	Tear resistance	4.9 N/mm^2 minimum
d)	Stiffness in flexure	2.46 N/mm^2 minimum
e)	Accelerated extraction I) Tensile strength II) Ultimate elongation	 10.50% N/mm^2 minimum 250% minimum
f)	Effect of Alkali i) Weight increase ii) Weight decrease	7 days 0.10% maximum 0.10% maximum ±5 points
g)	Effect of Alkali i) Weight increase ii) Weight decrease	28 days 0.40% maximum 0.30% maximum ±1 %

PVC water stops shall be either of the bar type, serrated with centre bulb and grips for use within the concrete elements or of the surface (Kicker) type for external use.

PVC water stops shall be of approved manufacture. Samples and the test certificate shall be got approved by the Engineer-in-charge before procurement for incorporation in the works.

3.26.2 **Workmanship**
Water stops shall be cleaned before placing them in position. Oil or grease shall be removed thoroughly using water and suitable detergents.

Water stops shall be procured in long lengths as manufactured to avoid joints as far as possible. Standard L or T type of intersection pieces shall be procured for use depending on their requirement. Any non-standard junctions shall be made by cutting the pieces to profile for jointing. Lapping of water stops shall not be permitted. All jointing shall be of fusion welded type as per manufacturer's instructions.

Water stops shall be placed at the correct location/level and suitably supported at intervals with the reinforcement to ensure that it does not deviate from its intended position during concreting and vibrating. Care shall also be taken to ensure that no honey-combing occurs because of the serrations/end grips, by placing concrete with smaller size aggregates in this region. Projecting portions of the water stops embedded in concrete shall be thoroughly cleaned of all mortar/concrete coating before resuming further concreting operations. The projecting water stops shall also be suitably supported at intervals with the reinforcement to maintain its intended position during concreting so as to ensure that it does not bend leading to formation of pockets. In addition, smaller size aggregates shall be used for concreting in this region also.

3.27 Preformed Fillers and Joint Sealing Compound
3.27.1 Materials
Preformed filler for expansion/isolation joints shall be non-extruding and resilient type of bitumen impregnated fibers conforming to IS: 1838(Part I)
Bitumen coat to concrete/masonry surfaces for fixing the preformed bitumen filler strip shall conform to IS: 702. Bitumen primer shall conform to is: 3384

Sealing compound for filling the joints above the preformed bitumen filler shall conform to Grade "A" as per IS: 1834

3.27.2 Workmanship
The thickness of the preformed bitumen filler shall be 25 mm for expansion joints and 50 mm for isolation joints around foundation supporting rotatory equipments. Contractor shall procure the strips of the desired thickness and width in length as manufactured.
Assembly of small pieces/thickness of strips to make up the specified size shall not be permitted.

The concrete /masonry surface shall be cleaned free from dust and any loose particles. When the surface is dry, one coat of industrial blown type bitumen of grade 85/25 conforming to IS: 702 shall be applied by brushing at the rate of 1.20Kg/sq.m.

When the bitumen is still hot the performed bitumen filler shall be pressed at held in position till completely adheres. The surface of the filler against which further concreting/masonry work is to be done shall similarly be applied with one coat of hot bitumen at the rate of 1.20Kg/sq.m.

Sealing compound shall be heated to a pouring consistency for enabling it to run molten in a uniform manner into the joint. Before pouring the sealing compound, the vertical faces of the concrete joint shall be applied hot with a coat of bitumen primer conforming to IS: 3384 in order to improve the adhesive quality of the sealing compound.

Expansion joints between beams/slabs shall be provided with 100 mm wide x 4 mm thick mild steel plate at the soffit of RCC beams/slabs to support and prevent the performed joint filler dislodging. This plate shall be welded to an edge angle of IS A 50x50x6 mm/slabs, by intermittent fillet welding. Steel surfaces shall be provided with 2 coats of red oxide zinc chrome primer and 3 coats of synthetic enamel paint finish.

CONCRETE POUR CARD

POUR NO: DATE:
DRG NO: STRUCTURE:
CONCRETE GRADE QUALITY: MAX.
AGGREGATE SIZE:

Sr no.	Item			Remarks if any
1.	BEFORE CONCRETIN	Centerlines checked	Yes/No.	
2.		Form work and Staging checked for accuracy, strength & finish	Yes/No.	
3.		Reinforcement checked	Yes/No.	
4.		Cover to reinforcement checked	Yes/No.	
5.		Verified test certificate for cement/steel	Yes/No.	
6.		Adequacy of materials/equipment for pour	Yes/No.	
7.		Embedded parts (location & plumb)	Yes/No.	
8.	SOFFIT(S) & POUR TOP (T) LEVELS CHECKED BEFORE (B) & AFTER (A) FORM REMOVAL (ONLY OF BEAMS OF OVER 10 M SPAN & IMPORTANT		S(B) T(B) S(B) T(B)	
9.	CONSTRUCTION JOINTS LOCATION & TIME (IF NOT AS PER DRAWING)			
10.	CEMENT CONSUMPTION IN KGS.			

11.	NUMBER OF CUBES AND IDENTIFICATION		
12.	TEST CUBE RESULTS (7 DAYS/28 DAYS)		
13.	CONCRETE CONDITION ON FORM REMOVAL	Very good/ good/fair / poor	

Notes: - Each pour to have separate cards, in triplicate one each for Owner/client, Contractor & site office.

Under remarks indicate deviations from drawings & specifications, congestion in reinforcement if any, unusual occurrences such as failure of equipment's, sinking of supports/Props, heavy rains affecting concreting, poor compaction, improper curing, other deficiencies, observation etc.

3.28 MODE OF MEASUREMENT AND PAYMENT

The unit rate for concrete work under various categories shall be all inclusive and no claims for extra payment on account of such items as leaving holes, embedding inserts, etc. shall be entertained unless separately provided for in the schedule of quantities. No extra claim shall also be entertained due to change in the number, position and / or dimensions of holes, slots or openings, sleeves, inserts or on account of any increased lift, lead of scaffolding etc. All these factors should be taken into consideration while quoting the unit rates. Unless provided for in the Schedule of Quantities the rates shall also include fixing insets in all concrete work, whenever required.

Payments for concrete will be made on the basis of unit rates quoted for the respective items in the Schedule of Quantities. No deduction in the concrete quantity will be made for reinforcements, inserts etc. and opening less than 0.100 of a sq.m in areas where concrete is measured in sq.m and 0.010 cu.m where concrete is measured in cu.m. Where no such deduction for concrete is made, payment for shuttering work provided for such holes, pockets, etc. will not be made. Similarly the unit rates for concrete work shall be inclusive or exclusive of shuttering as provided for in the Schedule of Quantities.

Payment for beams will be made for the quantity based on the depth being reckoned from the underside of the slabs and length measured as the clear distance between supports. Payment for columns shall be made for the quantity based on height reckoned upto the underside of slab / beams.

The unit rate for precast concrete members shall include formwork, mouldings, finishing, hoisting and setting in position including setting mortar, provision of lifting arrangement etc. complete. Reinforcement and inserts shall be measured and paid for separately under respective item rates.

Only the actual quantity of steel embedded in concrete including laps as shown on drawings or as approved by Engineer shall be measured and paid for, irrespective of the level or height at which the work is done. The unit rates for reinforcement shall include lap chairs, spacer bars etc.

Item No.77:
Labour work for making of holes in CC of size greater than 30 x 30 cm and upto depth of 15cm

The hole is to be done greater than 30 cm x 30 cm and upto the depth of 15 cm and as per the instruction of engineer-in-charge. After making hole, it is to be repaired with cement. The work is to be carried out as per the instructions from engineer-in-charge.

The rate for this item will be paid per hole basis.

Item No.78:
Providing Steel work for RCC work supplying, bending, binding & hooking by binding wire with Thermo Mechanically Treated (TMT) bars confirming to IS 1786, Fe-500

1:0. Materials

1.11. TMT bars of Fe-500 should be confirming to IS:1786.

2.0. Workmanship

2.1. The work shall consist of furnishing and placing reinforcement to the shape and dimensions shown as on the drawings or as directed.

2.2. Steel shall be clean and free from rust and loose mill scale at the time of fixing in position and subsequent concreting.

2.3. Reinforcing steel shall conform accurate to the dimensions given in the bar bending schedules shown an relevant drawings. Bars shall be bent cold to specified shape and dimensions or as directed, using a proper bar bender, operated by hand or power to attain proper radius of bends. Bars shall not be bent or straightened in a manner that will the material. Bars bent during transport or, handing shall be straightened before being used on the work. They shall not be heated to facilitate bending. Unless otherwise specified, a 'U' type hook at the end of each bar shall invariably be provided to main reinforcement. The radius of the bend shall not be less then twice the diameter of circle having an equivalent effective area. The hooks shall be suitably encased to prevent any splitting of the concrete.

2.4. All the reinforcement bars shall be accurately placed in exact position shown on the drawings, and shall be securely held in position during placing of concrete by annealed binding wire not less than 1 mm in size and by using stay blocks or metal chair spacers, metal hangers, supporting wires or other approved devices at sufficiently close intervals, Bars shall not be allowed to sag between supports nor displaced during concreting or any other operations of the work. All devices used for positioning shall be of non-corrodible material. Wooden and metal supports shall not extend to the surface of concrete, except where shown on drawings. Placing bars on, layers of

freshly laid concrete as the work progresses fro adjusting bar spacing shall not be allowed. Pieces of broken stone or brick and wooden blocks shall not be used. Layers of bars shall be separated by spacer bars, precast mortar bricks. or their approved devices. Reinforcement after being placed in position shall be maintained in a clean condition until completely embedded in concrete. Special care shall be exercised to prevent any displacement of reinforcement in concrete already placed: To prevent reinforcement form corrosion, concrete cover shall be provided as indicated on drawings. All the bars producing from concrete and to which other bars are to be spliced and which are, likely to be exposed for a period exceeding 10 days shall be protected by a thick coat of neat cement grout.

2.5. Bars crossing each other where required shall be secured by binding wire (annealed) of size not less than 1 mm in such a manner that they do not slip; over each other at the time of fixing and concreting:

2.6. As far possible, bars of full length shall be used. In case this is not possible. Overlapping of bars shall be done as directed, When practicable, overlapping bars shall not touch each other, but be kept apart by 25 mm. or 1.25 times the maximum size of the coarse aggregate whichever is greater by concrete between them. Where not feasible, overlapping bars shall be bound with annealed wires not less than 1 mm. thick twisted tight. The overlaps shall be staggered for different bars and located at points, along the span where neither shear not bending moment is maximum.

2.7. Whenever indicated on the drawings or desired by the Engineer-in-charge, bars shall be joined by couplings which shall have a cross-section sufficient to transit the full stresses of barso he ends of the bars that are joined by coupling shall be upset for sufficient length so that the effective cross section at the base of threads is not less than the normal cross-section of the bar. Threads shall be standard threads: Steel for coupling shall conform to I:S.226 (Latest edition)

2.8. When permitted or specified on the drawing's joints of reinforcement bars shall butt-welded so as to transit their full stresses. Welded joints shall preferably be located at points when steel will not be subject to more than 75 percent of the maximum permissible stresses and welds so staggered that at any one section not more than 20 percent of the rods are welded. Only electric are welding using a process which excludes air from the molten metal and conforms to any or all other special provisions for the work shall be accepted. Suitable means shall be provided for holding bars securely in position during welding. It shall be ensured that no voids are left in welding and when welding is done in two or, three stages, previous surface shall be cleaned. properly. Ends of the bars shall be cleaned of all loose scale, rust, grease, paint and other foreign matter before welding. Only competent welders shall be employed on the work. The M.S. electrodes used for welding shall conform to I.S. 814 (Latest edition). Welded pieces of reinforcement shall be tested: Specimen shall be taken from the actual site and their number and frequency of test shall be as directed.

3.0. Mode of measurements & payment

3.1. Reinforcement shall be measured in length including overlaps, separately for different diameters as actually used in the work. Where welding or coupling is resorted to, in place of lap joints, shall be measured far payment as equivalent length of overlap as per design requirement. From the length so measured, the weight of reinforcement shall be calculated in Kgs. Length shall include hooks at the ends. Wastage and annealed steel wire for binding shall not be measured and the cost of these items shall be deemed to be included in the rate for reinforcement.

3.2. The rate for reinforcement includes cost of steel binding wires, its carting to work site, cutting, bending; placing, binding and fixing in position as shown on the drawings and as directed, It shall also include all devices for keeping reinforcement in approved position, cost of joining as per approved method and all wastage and spacer bars.

3.3. The rate shall be for a unit of One Kg.

Item No.79:

Providing & fixing 32mm thick teakwood paneled door with 125×63 mm teakwood frame, partly glazed (6mm thick) and partly paneled with all necessary fixing and oil paint

1.0. Materials.

1.1. Wood for shutter shall confirm to M-29. 2. Glass shall confirm to M-38. 3. Anodised aluminum butt hinges shall confirm to M-43.

2.0. Workmanship

2.1. The item covers the requirement of preparation of shutters for doors, windows, clerestory windows, their supply and fixing.

2.2. Shutters:

2.2.1 Paneled shutters shall be constructed in the form of timber frame work of styles and rails with panel inserted of type as specified in the detailed drawings. Panel shall be fixed by providing grooves in the style and rails. The style and rails shall be joined to each other by mortise and tenon joints at right angles.

2.2.2 All members of the shutters shall be straight without any warp or bow and shall smooth, well planed faces at right angles to each other.

2.2.3 The size of styles and rails shall be as per drawing or as directed. Styles and rails of shutters shall be made of one piece only.

2.3. Timber paneling :

2.3.1 Thickness of the panel shall be as specified in the item as shown in the drawing or as directed. If the panel is made from more than one piece the piece shall be finished as shown in the detailed drawings and shall be joined with continuous groove with specified size. The end pieces of the panel and the top and bottom of the panel shall be provided with continuous tongue to frame into groove of the frame

shutter. An air space of 1.5 mm. shall be left in the groove of frame of shutter while framing the panels in it.

2.3.2 The faces of the panel as well as various pieces of the panel shall be closely fitted to the sized of the grooves.

2.3.3 Finishing of the corners of raised panel edges shall be done as shown in drawings or as directed.

2.3.4. The thickness specified shall be finished thickness and no tolerance will be permitted.

2.5. Fixtures and Fastenings :

2.5.1 The rate shall include anodized aluminum butt hinges including fixing with iron screws. The size and number of hinges shall be as per table given in annexure-1.

3.0. Mode of measurements any payment

3.1. The liner dimensions shall be measured correct upto 1 cm. The quantity shall be worked out correct to 2 places of decimals of cu. m.

3.2. The rate for shutter includes cost of providing block and clear for keeping the shutter in open position directed.

3.3. The dimension of the shutter shall be measured clear size of the shutter in close position between the grooves of the frame.

The rate shall be for a unit of one square meter.

Item No.80:
FRP Door supply all fitting and fixture complete

Providing and fixing 28 mm thick single shutter door with flush depressed panel design with core material PU foam done in situ & sandwich panel of 4 mm thick plywood & moulded in wooden blocks for fixtures. FRP thickness to be 1.50 mm to 2.00 mm including providing and fixing FRP moulded section frame of section size 100 mm x 50 mm chamfered type with FRP thickness of 2.00 mm and core of rigid polyurethene foam having density 32 Kg/ cmt to 36 Kg/cmt., compressive strength 3.5 Kg./sqcm to 4.5 Kg./sqcm. and fire retardant grade, PU foam shall be done situ with Canadian Ponderoza wooden blocks for fixtures. In built holdfast arrangement to use fasteners for fixing with masonry or R.C.C. The whole section of frame and shutter shall be waterproof, acid / alkali resistant & well coat colour. the frame and shutter shall be fixed with all necessary stainless steel fixtures and fastenings etc. complete as per direction of engineer
in charge.

Materials:-
Frame materials shall be of fire extinguishing grade FRP skin having section 100 mm x 50 mm chamfered type with thickness of 1.50 mm to 2.00 mm and core material shall be fire extinguishing grade rigid polyurethane foam having density 32 Kg/ cu.cm to 36 Kg/ cu.cm, flexural strength 1.8 Kg / Sqcm to 2.00 Kg / Sqcm and compressive strength
3.5 Kg / Sqcm to 4.5 Kg / Sqcm. Whole frame shall be water proof, weather proof, termite proof and mild acid / alkali resistance. P.U foam shall be done in situ with plantation wooden pieces embedded inside for holding fixtures

and stiffening. Frame shall be straight in line, level and having three joint-less pieces. Frame shall be fixed in masonry / R.C.C with Mild Steel hold fast or with 115 mm long screws as hold fast with sleeve in position and finished in colour cement. 28 mm thick shutter in depressed panel design shall be having 1.5 mm to 2.0 mm thickness fire extinguishing grade FRP skin, sand-witch panel of 4 mm thick plywood and embedded wooden pieces for stiffening as well as holding hinges and fixture, all molded into a one piece shutter. Core material shall be injected fire extinguishing grade rigid polyurethane foam done in situ having density 32 Kg / Cucm to 36 Kg / Cucm compressive strength 1.8 Kg / Sqcm to 2.00 Kg / Sqcm, flexural strength 3.5 Kg / Sqcm to 4.5 Kg / Sqcm. Whole shutter shall be water proof, weather proof, termite proof and mild acid/alkali resistance. 28 mm thick depressed panel FRP shutter shall be joint-less. It shall be straight and smooth and of standard shape finished in gel coat. All necessary fixture and fastening shall be fixed where wooden pieces are provided.

Workmanship:
Frame shall be fixed in masonry/R.C.C member. Shutter shall be fixed in true line; level and proper manner having 2.0 to 3.0 ply i.e. air space for smooth and easy working. Pull handles, Door stopper, Door stopper, bearing hinges & S.S self tapping Philips cross head special screws conforming to anti corrosive high grade AISI 304 stainless steel of standard make or as equivalent approved by Engineer-in-charge conforming to anti corrosive high grade AISI 304 stainless steel only, & Tower bolt of the make Orbit or as equivalent approved by Engineer-in-charge conforming to standards of ORBIT & anti corrosive high grade AISI 304 stainless steel only.
All fixtures and fastenings of standard make shall conform to AISI 304 Grade Stainless Steel.

The following table presents main elements (forming the Chemical composition) of AISI 316 Grade Stainless Steel.

- It can withstand the corrosion caused by atmospheric / environmental or major chemical reactions.
- It can resist high temperatures without going under any deformity which makes it highly recommended for fire safety doors in any building.
- It shall have remarkable creep strength and Rupture strength.
- It shall be repelled the Bacteria & shall be made higher degree of hygiene.
- It shall be of natural finish, it shall not required regular cleaning or maintenance making it most suitable for public places.
- It shall tolerate forceful and intense use.
- Specially developed fixing stud and grubs shall be used to ensure accurate fitting of elements and eliminates shaking of elements.

Fixtures & Fastenings:
Following fixtures and fastening shall be used for single shutter. All fixtures and fastening of the make shall be of anti corrosive high grade AISI 304 stainless steel in Glossy & satin combination finish only. Fixtures and fastening of standard make shall be fixed by skill person only.

The rate shall include anti corrosive high grade AISI 304 stainless pull handle, hinges, door stopper in Glossy & satin combination finish of the standard make including fixing with S.S self tapping Philips cross head special screws and Stainless steel tower bolt of the make Orbit. The size and number of hinges shall be as per table given above± 1.50 mm tolerance will be allowed in thickness of shutter and ± 1.20 to 2.00 mm for size of frame.

Mode of measurements & payment:
The rate for shutter includes cost of anti corrosive high grade AISI 304 stainless pull handle, Door stopper, hinges, S.S self tapping Philips cross head special screws in Glossy & satin combination finish of standard make, tower bolt of the make orbit. The dimensions of the door shall be measured clear size of the opening made for fixing of door with frame.

The rate shall be for a unit of one sq. metre.

Item No.81:
18 guage collapsible gate with primer & double coat oil paint
For this work, new steel channel of size 3.4" of 1.9 to 2.0 cm as well as strip of 3/4" x 3/16" shall be used. The gap between the two channel while the door is closed shall be maximum 10 cm as well as the joint of strip shall be revited. In the work of door, at the top and bottom on the track of size 1-1/2" x 3/8" the steel track of size 1.5 cm to 1/8" shall be fixed in the wall and the girder shall be fixed on it so as to get the door open/closed easily. The said gate shall be fixed in line level and plumb in the wall as per the instructions of the engineer-in-charge.

In the door, necessary handle, locking arrangement shall be done as per the instructions of the engineer-in-charge.

On completion of the work, first two coats of red lead shall be done and two coats of silver or as per the selection of shade of oil paint shall be done on it.

The rate for this work will be paid per square meter basis.

Item No.82:
Providing and fixing rolling shutters of approved Design & Quality with necessary fittings including bearings & top cover with One coat of Red Lead paint and Two coats of Silver Oil paint et complete.

The rolling shutters shall conform to I.S. latest edition. Rolling shutters shall be supplied of specified type with accessories. The size of the rolling shutters shill be specified in the drawings. The shutters shall be constructed with interlocking lath sections formed from cold rolled steel strips not less than 0.9 aim. thick and 80 mm. wide for shutters upto 3.5 mm, width not less than 1.25 mm, thick and 80 mm. wide for shutter 3.5 mm in width and above unless otherwise specified, Hood covers shall be of mild steel deep channel section and of rolled pressed or build up (fabricated) jointless construction. The thickness of sheet used shall not be less than 3.5 mm.

Hood covers shall be made of M S Sheets not less than 0.90 mm. thick. For shutters having width 3.5 Meter and above, the thickness of M.S. sheet for the hood cover shall be not less than 1.25 mm.

The spring shall be of best quality and shall be manufactured from tested high tensile spring steel wire or strip of adequate strength to balance the shutters in all position. The spiting pipe shaft etc, shall be supported on strong M.S. or malleable C.I. brackets. The brackets shall be fixed on or under the lintel as specified with rawl plugs and screws bolts etc.

The rolling shutters shall be of self rolling upto 8 Sq.m. clear area without ball bearing and up to 12 Sq. rn. clear area with ball bearing. If the rolling shutters are of larger, than gear operated type shutters shall be used
The locking arrangement shall be provided at the bottom of shutter at both ends.
The shutters shall be opened from outside,

The shutters completed with door suspension shafts, looking arrangements, pulling hooks handles and other accessories.

Mode of Measurement:
The rate shall be for a unit of one square meter basis.

Item No.83 and 84:
Providing and fixing window having extruded aluminum Colour anodized section frame main outer horizontal Three track member size 92mm x 31.75mm x 1.30mm (of Jindal Section no:8688,@ Wt.1.07 Kg/mt), vertical member of size 92mm x 31.75mm x 1.50mm (of Jindal Section no:8933,@ Wt. 1.06 Kg/mt) with sliding shutters of horizontal member size 40 mmx18mm x1.29mm (of Jindal Section no:8947@ wt.of 0.456 Kg/mt), vertical member of size 40mm x 18mm x 1.29 mm (of Jindal Section no:8949 @ wt.of 0.456Kg/mt, two shutter with 5 mm thick transparent bronze colour tinted float glass and one track with Saint Gobin Mosquito Net with powder coated aluminum fittings and fixtures and transparent silicon sealant glass fixing to frame as per details etc And
Three track Domal series alluminium section window including mosquito chainlink etc with all fittings

Providing and fixing Aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS : 1285, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, S.S. Hinges & Handles etc all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately): (Alu section of Hindalco or Jindal or other equivalent). All the Fixtures and accessories shall be of Dorma or other

equivalent as directed by engineer in charge.

Aluminium Sections:
Aluminium sections used for fixed windows, ventilators, partitions, frame work & doors etc. shall be suitable for use to meet architectural designs to relevant works and shall be subject to approval of the Engineer-in-Charge for technical, structural, functional and visual considerations. The aluminium extruded sections shall conform to IS 733 and IS 1285 for chemical composition and mechanical properties. The stainless steel screws shall be of grade AISI 304. The permissible dimensional tolerances of the extruded sections shall be as per IS 6477 and shall be such as not to impair the proper and smooth functioning/operation and appearance of door and windows. Aluminium glazed doors, windows etc. shall be of sizes, sections and details as shown in the drawings. The details shown in the drawings may be varied slightly to suit the standards adopted by the manufacturers of the aluminium work, with the approval of Engineer-in-Charge. Before proceeding with any fabrication work, the contractor shall prepare and submit, complete fabrication and installation drawings for each type of glazing doors, windows, ventilators and partition etc. for the approval of the Engineer-in-Charge. If the sections are varied, the contractor shall obtain prior approval of Engineer-in- Charge and nothing extra shall be paid on this account. Anodising Standard aluminium extrusion sections are manufactured in various sizes and shapes in wide range of solid and hollow profiles with different functional shapes for architectural, structural glazing, curtain walls, doors, window & ventilators and various other purposes. The anodizing of these products is required to be done before the fabrication work by anodizing/electro coating plants which ensures uniform coating in uniform colour and shades. The extrusions are anodized up to 30 micron in different colours. The anodized extrusions are tested regularly under strict quality control adhering to Indian Standard.

It is mandatory that all aluminium members shall be wrapped with self adhesive non-taining PVC tape, approved by Engineer-in-Charge.

Measurement:
All the aluminium sections including snap beading fixed in place shall be measured in running meter along the outer periphery of composite section correct to a millimeter. The weight calculated on the basis of actual average (average of five samples) weight of composite section in kilogram correct to the second place of decimal shall be taken for payment. (Weight shall be taken after anodizing). The weight of cleat shall be added for payment. Neither any deduction nor anything extra shall be paid for skew cuts.

Rate:
The rate shall include the cost of all the materials like Alum sections, snap beading, Fixtyres, SS hinges, cylindrical lock, Handles, door stopper, labours involved in all the operations as described in nomenclature of item and particular specification.

The rate shall be for a unit of one sq. meter

Item No.85:
Supplying and fixing 12mm toughned glass (including cost of necessary fitting, aluminum frame C type size 32x32mm with anodized coating and labour) etc. complete.

The plain toughned glass for door-window with necessary fittings is to be carried out. Aluminum frame work should be as per item no.83. The whole work is to be carried out as per requirement and up to satisfaction of engineer in charge.

The rate shall be for a unit of one square meter.

Item No.86:
Making cupboard with 18 mm plywood which 6 mm ply back side, 0.8 mm white lamination inner side, fixing approved quality sunmica, hinges, stopper etc. 18 mm thick ply with both side lamination for selves. plywood brands - Kitply, Century, Dura, Everest.

The cupboard with 18 mm plywood with 6 mm ply on back side is to be provided and fixed with approved quality material as instructed. 0.8 mm white lamination inner side is to be fixed of approved quality sunmica with hinges, stopper, etc. Both side lamination for selves for 18 mm thick ply is to be done. The Plywood brand shall be Kitply, Century, Dura, Everest. The work as may be instructed by the Site Engineer shall have to be completed.

The rate shall be for a unit of one square meter basis.

Item No.87:
Providing & fixing 0.60 x 0.60 sizetiles & galvenized frame on gypsam board, false ceiling with moulding & designed patta.
a) For false ceiling
b) For decorative molding. c) 100 mm wide cornices

1.0 General:
The item pertains to providing and fixing 0.60 X 0.60 gypsum ceiling asper the pattern shown on drawing or as directed, with all frames and fixtures.

2.0 Material:
2.1 0.60 X 0.60 gypsam:
The 0.60 X 0.60 gypsum shall be of the calciumsulphate semi- hydrate variety. Its fineness shall be such that when sieved through a sieve of IS sieve designation3.35 mm for 5 minutes after drying the residue left on it shall be not more than 1% byweight. The average compressive strength of material determined by testing 5 cm cubesafter removal from moulds, after 24 hours and drying in an over at 40 degree C till weight of the cubes is constant.

2.2. Frame:
The frame work shall be of the specified wood & MS flats. In case of sloping 162roofs wooden battens of suitable section (depending upon the span and load to be carried)shall be firmly fixed as main supports, to the

under side of the tie beams of the trusses atrequired centres by means of bolts and nuts of proper size. In case of flat roofs, the battensshall be securely fixedto the walls and columns/pillars by holding down bolts and shall be fastened to the slabsabove with iron Rajkot Municipal Corporation straps or MS bars of suitable sections andanchored therein. Cross battens of 50 x 40 mm sections at 40 cm centres or so, shall then befixed at right angles to the main battens. The framework shall be treated with approvedwooden preservative before it is covered with ceiling. The underside of the framework shallbe true to planes and slopes.

2.3. Wooden Strips:

Wooden strips 25 x 6 mm of first class kailwood, (unlessotherwise stipulates specifically in the description of the item) shall be fixed to the crossbattens, in the parallel or with gaps of 10 mm in between adjacent rows, by means of flatheaded (clout) nails. The strips shall be fixed butt jointed and not overlapped. The jointsshall be staggered. The minimum length of strips to be used shall be 1.5 m depending uponthe length of strips required.

2.4. Rabbit Wire Mesh:

Rabbit Wire mesh shall then be fixed to the underside of woodenstrips and their junctions with the battens with nails at pitch of 15 to 20 cm as ordered bythe Engineer- in-Charge. The rabbit wire mesh shall be straight, tight and perfectly trueto planes and slopes and without any sagging and shall be slightly below the underside ofthe laths to allow the plaster to encase the metal round.

3.0 Application of 0.60 X 0.60 gypsam:

The 0.60 X 0.60 gypsam will be mixed with water to aworkable consistency. 0.60 X 0.60 gypsam shall be applied to the underside of the lathsover the rabbit wire mesh in suitable sized panels and finished to a smooth surface by steel trowels. The plaster shall be applied in such a manner that it fully fills the gaps between thelaths and the thickness over the laths as specified in the description of the item. The jointsshall be finished flush to make the ceiling in one piece. The finished surface shall besmooth and true to plane, slopes or curves as required. The patterns as per drawings or asdirected may be provided precasted and shall be fixed to ceiling frame by the brass screwsat the equal intervals.

4.0 Finishing:

The exposed side of the 0.60 X 0.60 gypsam cast in situ or precast or readymadeboards shall be truly level and plane. The joints shall be truly parallel and/orperpendicular or non visible as per the approved pattern. The ceiling shall be painted withthe approved paint.

5.0 Item to Include:

Item includes all labour, material, tools and equipment, all taxes,transportation of material, providing 0.60 X 0.60 gypsam of specified thickness, rabbit mesh,wood work, fixing, painting etc. complete including iron work brackets and screwsrequired for fixing the boards to the roof members. The scaffolding and staging requiredalso shall be included in the item. There are some fans in the rooms. The same shall belowered down by providing a distant piece.

6.0 Mode of Measurement and Payment:
Length and breadth of superficial area of the finished work shall be measured correct to a cm. Area shall be calculated in square meter correct to two places of decimal. No deduction will be made of openings of areas upto 0.40 square meter nor shall extra payment be made either for any extra material or labour involved in forming such openings. For openings exceeding 0.40 square meter in area, deduction in measurements shall be made but extra will not be payable for any extra material or labour involved in making such openings. Curved surfaces shall be measured and paid for separately from flat surfaces. The work shall be deemed to comprise of flat surfaces only unless specifically stated otherwise in the description of the item. Any sunk or raised moldings in the plaster shall not be measured and not paid for separately. The contract rate shall be per sqm of the area of the ceiling of 0.60 X 0.60 gypsum including all the lifts.

Item No.88:
Providing and fixing eco-friendly light weight calcium silicate false ceiling tiles having Tegular edge & 15 mm Thick Densified edges on the Tile Periphery for Extr Strength The Light weight calcium silicate ceiling tiles shall have , light reflection 85% non-ombustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity0.043° w/m KC.for the best thermal Insulation . The Light weight calcium Silicate tile shall be of approved texture Fine issured/Spintone/Cosmos having NRC value of 0.5 & Globe having NRC value of 0.75 NRC or equivalent of size 595 X 595 mm to be laid on true horizontal level suspended inter locking metal grid of hot dipped galvanized steel sections (galvanizing @120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and size of 24X38mm made from 0.30 mm thick (minimum) sheet, 1200mm centre to centre, and cross 'T' of size 24X28mm made out of 0.33mm (Minimum) sheet spaced 1200mm along spaced between main 'T' at 600mm centre to centre to form agrid of 1200X600mm and secondary cross 'T' of length 600mm and size 24x28mm made of 0.30 mm thick (Minimum) sheet to be interlocked at middle of the 1200X600mm panel to form grid of size 600X600mm resting on periphery alls/partitions on a perimeter wall angle pre-coated steel of size (24X24X3000mm made of 0.40mm thick (minimum) sheet with the help of rawl plugs at 450mm centre to centre with 25mm long dry wall screws @ 230mm interval and laying 15mm thick Densified edges light weight calcium silicate ceiling tiles of approved texture (Fine Fissured/Cosmos/Spintone) in the grid including, cutting /making opening for services like diffusers, grills, light fittings, fixtures, smoke detectors etc., wherever required, Main 'T' runners to be suspended from ceiling using G.I. slotted cleats of size 25X35X1.6mm fixed to ceiling with 12.5mm dia and 50mm long dash fasteners, 4mm G.I. adjustable rods with galvanized steel level clips of size 85X30X0.8mm, spaced at 1200mm centre to centre long main 'T' bottom exposed with 24mm of all T-sections shall be pre-painted with polyester baked paint, for all heights, as per specifications,

drawings and as directed by engineer-in-charge.Note:- Only calcium silicate false ceiling area will be measured from wall to wall. No deduction shall be made for exposed frames/opening (cut outs) having area less than 0.30 sqm. The calcium silicate ceiling tiles shall have NRC. Value of 0.50 (Minimum) for Fine fissured/Spintone/Cosmos and 0.75 NRC for Globe, light reflection 85% non-combustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity. 0.043° w/m KC.for the best thermal Insulation

The rate for this item will be paid on square basis.

Item No.89, 118, 119 and 120:
Iron purline & ridge with oil paint for ceiling work.
And
Iron round gate as per drawing with colour incuding all
And
Grill work for doors - windows etc. as per design on site with fitting & fixing
And
Iron Work as per drawing and Instructions all complete:

All structural steel shall confirm to IS 266 - Latest edition. The steel shall be free from the defects mentioned in IS 226 (Latest edition) and shall have a smooth finish. The material shall be free from loose mill scale, rust, pits or other defects affecting the strength and durability. River bars shall confirm to IS 1148 Latest edition.

When the steel is supplied by the contractor, test certificate of the manufacturer shall be obtained according to IS 226 Latest edition and other relevant Indian Standards.

The design should be made as per the instructions of engineer-in-charge. The rate includes supplying and welding (along with labours), transportation and fixing in position of the steel work.

The rate shall be for a unit of one Kilogram.

Item No.90:
Supply & fixing FRP corugated sheet for ceiling work (plain / corugated) without iron work

SPECIFICATION FOR FIBER REINFORCED POLYMER (FRP) COMPOSITE SHEET PILE COMPOSITEZ-100 SHEET PILE

1.1 SCOPE
This addresses the use of fiber reinforced polymer (FRP) composite sheet pile.

1.2 REFERENCES
AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) TEST IDENTIFICATION:

ASTM D3039 Tensile Properties of Plastics
ASTM D790 Flexural Properties of Unreinforced and Reinforced Plastics

1.3 TERMINOLOGY
Fiber Reinforced Polymer (FRP) – A thermoset polymer matrix reinforced with a fiber or other material with a sufficient aspect ratio (length to thickness) to provide a discernable reinforcing function in one or more directions.

1.4 SUBMITTALS
The manufacturer shall submit to the contractor three (3) copies of their most recent product brochure for the FRP sheet pile product covered by this specification.

The submitted FRP sheet pile shall be manufactured in accordance with the requirements of this specification and shall be a standard commercial product. Additional or better features which are not specifically prohibited by this specification, but which are a part of manufacturer's standard commercial product, shall be included in the FRP sheet pile being furnished. A standard commercial product is one that has been sold or is currently offered for sale on the commercial market through advertisements or manufacturer's catalogs or brochures, and represents the latest production model.

1.5 QUALITY ASSURANCE
The manufacturer shall have in place a Quality Assurance Program that will ensure the FRP sheet pile is in conformance the intent of this specification. Each delivered section of FRP sheet pile shall be examined by an inspector of purchaser's designation for compliance with the appropriate requirements of this specification. This inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more major defects preventing or lessening maximum efficiency shall constitute cause for rejection.

2.1 MATERIALS
Polymer (resin) – The resin for the FRP sheet pile shall be either polyester or vinyl ester. Resin shall
contain U.V. stabilizers to provide sufficient resistance to ultra violet light degradation. No other resins will be accepted for use on this project.

Reinforcement – The glass reinforcement shall be in the form of continuous roving, woven roving or stitched fabrics, and surface matting. The finished FRP sheet pile product shall meet the minimum section properties shown in Table I.

General Configuration – The FRP sheet pile shall be Z-shaped with a ball and socket interlock and meet the dimensional tolerances shown in Table II. The FRP sheet pile shall be gray in color unless otherwise stated in this specification document.

2.2 MANUFACTURING PROCESS

FRP sheet pile shall be manufactured using the pultrusion process. Pultrusion is defined as the continuous processing of raw materials by pulling resin-rich reinforcements through a heated steel die to form profiles of constant cross section of continuous length.

2.3 PROPERTIES

Table I – Section Properties

Property	Minimum Value
Modulus of Elasticity	3,000 ksi
Moment of Inertia	37.15 in^4/ft
Section Modulus	10.25 in^3/ft
Cross Sectional Area	4.03 in^2/ft

Table II – Dimensions/Tolerances and Weight

Specification	Value
Width / (tolerance)*	18.0” (+/- 0.10”)
Depth / (tolerance)	7.25” (+/-
Thickness / (tolerance)	0.250” (+/-
Weight (per lineal foot)	4.54 lbs/ft

* Measured from center of interlock to center of interlock

2.4 SHIPPING, STORAGE AND HANDLING

FRP sheet pile shall be shipped and stored in such a manner as to minimize scratching and damage. FRP
sheet pile can be moved using traditional lifting and handling methods.

2.5 INSTALLATION

Installation shall be in accordance with manufacturer’s guidelines as noted in the installation guide.

2.5.1 FRP sheet pile shall be installed using traditional driving methods including vibratory hammers, impact hammers or water jets. Contractor should contact manufacturer for specific hammer recommendations.

2.5.2 Cutting and Drilling – FRP sheet pile can be cut using carbide edged masonary blades and drilled with carbide or cobalt tipped bits.

2.5.2 Repairability – If damaged, the FRP sheet pile may be repaired as per the manufacturer's recommendations.

2.5.3 Bolts, Hardware, Wales, Tiebacks & Caps – As specified by project engineer and shown on plans.

2.5.4 Workmanship, Finish, and Appearance – FRP sheet pile shall be furnished in accordance with this specification shall be an acceptable match to approved samples in color and surface appearance. The product shall be free of defects that adversely affect performance or appearance.

3.1 METHOD OF MEASUREMENT

The quantity of FRP sheet pile to be paid for under the work specified will be the number of square feet installed in accordance with the plans and this specification.

4.1 BASIS OF PAYMENT

The unit price bid per square feet of FRP sheet pile shall include all costs for material, labor, equipment, fasteners and any other items required for completing the work including storage costs, disposal of unused materials and transportation costs.

Item No.91:
Cement Lodhiya work:

For this work, cement lodhiyca is to be carried out with mixture prepared in C.M. 1:1 at the placed as per the instructions of engineer-in-charge. Curing for the work is to be done for five days.

The rate shall be for a unit of one running meter.

Item No.92, 93 and 97:
Double coat oil paint on wall surface with remove all dirt & dust with first hand linced oil
And
Enamel painting on door/window, iron door, iron grill or woodwork two coat with base Coat as directed by EIC/ consultant.
And
Applying of lacker oil paint with compression on wall, wood work, fabrication work, statue etc. with all material and labours

1.0.Materials :

1.1. The ready mixed paint, brushing, wood primer pink shall confirm to I. S.

3536-1966 (Latest edition).

2.0. Workmanship :

2.1. Preparation of Surfaces :

2.2.1. All wood work shall be dry and free from any foreign matter incidental to building operations. Nails shall be punched well below the surface to provide a firm key for stopping. Mouldings shall be carefully smoothened with abrasive paper and projecting fibres shall be removed. Flat portion shall be smoothened off with abrasive paper used across the grain prior to staining and with the grain prior to staining or if the wood is to be left in its natural colour, wood work which is to be stained may be smoothened to scraping instead of by glass papering if so required.

2.2.2. Any knots, resinous or stricaks or blueish sap wood that are not large enough to justify cutting out shall be treated with two coats of pure shellac knotting applied thinly and extended about 25 mm. beyond the actual area requiring treatment.

2.2. Application of primer :

2.2.1. The relevant specifications of item No. 19.12 (A) shall be followed for application of primer.

1.0. Materials : The enamel paint shall confirm to M-44 B.

2.0 Workmanship :

2.1. General:

2.1.1. The materials required for work of painting work shall be obtained directly from approved manufacturers or approved dealer and brought to the site in maker's drums, kegs etc. with seal unbroken.

2 1.2. All materials not in actual use, shall be kept properly protected, lids of containers shall be kept closed and surface of paint in open or partially open containers covered with a thin layer of turpentine to prevent formation of skin. The materials which have become stale or flat due to improper and long storage shall not be used. The paint shall be stirred thoroughly in its container before pouring into small containers. While applying also the paint shall be continuously stirred in smaller container. No left over paint shall be put back into stock tins. When not in use, the containers shall be kept properly closed.

2.1.3. If for any seasons, thinning is necessary, the brand of thinner recommended by the manufacturer shall be used.

2.1.4. The surface to be painted shall be thoroughly cleaned am.' dusted. All rust, dirt and grease shall be thoroughly removed before painting is started. No painting on exterior or other exposed parts of the work shall be carried out in wet, damp or otherwise unfavourable weather and all the surfaces shall be thoroughly dry before painting work is started.

2.2. Application:

2.2.1. Brushing operations arc to be adjusted to the spreading capacity advised by the manufacture of particular paint. The paint shall be applied

evenly and smoothly by means of crossing and laying off. The crossing and laying off consists of covering the area over with paint, brushing the surface hard for the first lime over and then brushing alternately in opposite directions two or three times and then finally brushing lightly in direction at right angles to the same. In this process, no brush marks shall be left after the laying off is finished. The full process of crossing and laying off will constitute one coat.

2.2.2. Each coat shall be allowed to dry completely and lightly rubbed with very fine grade of sand paper and loose particles brushed off before next coat is applied. Each coat shall vary slightly in shade and shall be got approved from Engineer-incharge before next coat is started.

2.2.3. Each coat except the last cost shall be lightly rubbed down with sand paper of fine pumice stone and cleaned of dust before the next coat is applied. No hair marks from the brush or clogging of paint puddles in the corners of panels angles of mouldings etc. shall be left on the work.

2.2.4. Special care shall be taken while painting over bolts, nuts, rivets, overlaps etc. Approved best quality brushes shall be used.

3.0. Mode of measurements & payment:

3.1. The relevant specifications of item shall be followed for mode of measurements and payment. The rate is excluding priming coat.

3.2. The rate shall be for a unit of one sq. metre.

Item No.94, 95 and 154:
Applying 10 to 15 cm wide traffic stripes with road marking paint with double coat on bitumen or cement road
And
Applying 25 to 30 cm wide traffic stripes with road marking paint with double coat on bitumen or cement road
And
Thermoplast painting work avg. 2.5 mm thick on Paver Roads or CC road size 10-50 cm width including material & labour

1.0 Hot Applied Thermoplastic Road Marking

1.1 General :

(i) The work under this section consists of marking traffic stripes using a thermoplastic compound meeting the requirements specified herein.

(ii) The thermoplastic compound shall be screeded /extruded on to the pavement surface in a molten state by suitable machine capable of controlled preparation and laying with surface application of glass beads at a specific rate. Upon cooling to ambient pavement temperature, it shall produce an adherent pavement marking of specified thickness and width and capable of resisting deformation by traffic,

(iii) The colour of the compound shall be white or yellow (IS colour No. 556) as directed by the Engineer-in-charge.

2.0 Thermoplastic Material

2.0 General: The thermoplastic material shall be homogeneously composed of aggregate, pigment, resins and glass reflectorizing beads. Approved brands are Asian, Burger, Automark and Kataline.

2.1 Requirements :

(i) Composition :

The pigment, beads, and aggregate shall be uniformly dispersed in the resin. The material shall be free from all skins, dirt and foreign objects and shall comply with requirements indicated in Table No.1.

TABLE No.1 PROPORTIONS OF CONSTITUENTS OF MARKING MATERIAL (Percentage by weight)

Component	White	Yellow
Binder	18.0 min.	18.0 min.
Glass Beads	30-40	30-40
Titanium Dioxide	10.0 min.	—
Calcium Carbonate and Inert Fillers	42.0 max.	See Note
Yellow Pigments	—	

Note : Amount of yellow pigment, calcium carbonate and inert fillers shall be at the option of the manufacturer, provided all other requirements of this Specification are met

(ii) Properties:

The properties of thermoplastic material, when tested in accordance with ASTM D36/BS-3 262-(Part 1), shall be as below:

a. Luminance:
   White : Daylight luminance at 45 dcgrees-65 per cent min. as per AASHTO M 249
   Yellow: Daylight luminance at 45 degrees-45 per cent min. as per AASHTO M 249
b. Drying time:
   When applied at a temperature specified by the manufacturer and to the required thickness, the material shall set LO bear traffic in not more than 15 minutes.
c. Skid resistance : not less than 45 as per BS 6044.
d. Cracking resistance at low temperature :
   The material shall show i-o cracks on application to concrete blocks.
e. Softening point : 102.5 ± 9,5° C as per ASTM D 36.
f. How resistance: Not more than 25 per cent as per AASHTO M 249.
g. Yellowness index (for white thermoplastic paint): not more than 0.12 as per AASHTO M 249

(iii) Storage life: The material shall meet the requirements of these Specifications for a period of one year. The thermoplastic material must also melt uniformly with no evidence of skins or unmelted panicles for the one year storage period.

Any material not meeting the above requirements shall be replaced by the manufacturer/ supplier/Contractor.

(iv) Reflectorisation:

Shall be achieved by incorporation of beads, the grading and other properties of the beads shall be as specified in Clause 3.

(v) Marking: Each container of the thermoplastic material shall be clearly and indelibly marked with the following information:
1. The name, trade mark or other means of identification of manufacturer
2. Batch number
3. Date of manufacture
4. Colour (white or yellow)
5. Maximum application temperature and maximum safe heating temperature.

(vi) Sampling and testing: The thermoplastic material shall be sampled and tested in accordance with the appropriate ASTM/BS method. The Contractor shall furnish to the Employer a copy of certified test reports from the manufacturers of the thermoplastic material showing results of all tests specified herein and shall certify that the material meets all requirements of this Specification,

3.0 Reflectorising glass beads

3.1. General : This Specification covers two types of glass beads to be used for the production of refectories pavement markings.

Type 1 beads are those which are a constituent of the basic thermoplastic compound vide Table-1 and Type 2 beads are those which are to be sprayed on the surface vide Clause 3.

3.2. The glass beads shall be transparent, colourless and free from milkiness, dark particles and excessive air inclusions.

These shall conform to the requirements spelt out in Clause 3

3.3. Specific requirements

A. Gradation: The glass beads shall meet the gradation requirements for the two types as given in Table-2.

Table-2 GRADATION REQUIREMENTS FOR GLASS BEADS

Sieve Size	Per cent retained	
	Type 1	Type 2
1.18 mm	0 to 3	
850 micron	5 to 20	0 to 05
600 –do-	--	5 to 20
425 –do-	65 to 95	--
300 –do-	--	30 to 75
ISO –do-	0 to 10	10 to 30
below 180 micron	--	0 to 15

B. Roundness: The glass beads shall have a minimum of 70 per cent true spheres.

C. Refractive index: The glass beads shall have a minimum refractive index of 1.50.

D. Free flowing properties : The glass beads shall be free of hard lumps and clusters and shall dispense readily under any conditions suitable for paint striping. They shall pass the free flow-test.

3.4. Test methods: The specific requirements shall be tested with the following methods:

(i) Free-flow test- Spread 100 grams of beads evenly in a 100 mm diameter glass dish.
Place the dish in a 250 mm inside diameter desiccator which is filled within 25 mm of the lop of a desiccator plate with sulphuric acid water solution (specific gravity 1.10). Cover the desiccator and let it stand for 4 hours at 20 to 29 degree C. Remove sample from desiccator, transfer beads to a pan aid inspect for lumps or clusters. Then pour beads into a clean, dry glass funnel having a 100 mm stern and 6 mm orifice. If necessary, initiate flow by lightly tapping the funnel. The glass spheres shall be essentially free of lumps and clusters and shall flow freely through the funnel.

(ii) The requirements of gradation, roundness and refractive index of glass beads and the amount of glass beads in the compound shall be tested as per B3 6088 and BS 3262 (Part I).

(iii) The Contractor shall furnish h to the Employer a copy of certified test reports from the manufacturer of glass beads obtained from a reputed laboratory showing results of all tests specified herein mid shall certify that the material meets all requirement of this Specification. However, if so required, these tests may be carried out as directed by the Engineer.

4. Application properties of thermoplastic material

4.1. The thermoplastic material shall readily get screeded/extruded at temperatures specified by the manufacturers for respective method of application to produce a tine of specified thickness which shall be continuous and uniform in shape having clear and sharp edges.

4.2. The material upon heating to application temperatures, shall not exude fumes, which are toxic, obnoxious or injurious to persons or property.

5. Preparation:

(i) The material shall be melted in accordance with the manufacturer's instructions in a healer filled with a mechanical stirrer to give a smooth consistency to the thermoplastic material lo avoid local overheating. The temperature of the mass shall be within the range specified by the manufacturer, and shall on no account be allowed lo exceed the maximum temperature stated by the manufacturer. The molten material should be used as expeditiously as possible and for thermoplastic material which has natural binders or is otherwise sensitive lo prolonged heating, the material shall not be maintained in a molten condition for more than 4 hours.

(ii) After transfer lo the laying equipment, the material shall be maintained within the temperature range specified by the manufacturer for achieving the desired consistency for laying.

6. Properties of finished road marking :

(a) The stripe shall not be slippery when wet.

(b) The marking shall not lift from the pavement in freezing weather.
(c) After application and proper drying, the stripe shall show no appreciable deformation or discolouration under traffic and under road temperatures upto 60°C.
(d) The marking shall not deteriorate by contact with sodium chloride, calcium chloride or oil drippings from traffic.
(e) The stripe or marking shall maintain its original dimensions and position. Cold ductility of the material shall be such as to permit normal movement with the road surface without chopping or cracking.
(f) The colour of yellow marking shall conform to IS Colour No. 356 as given in IS:164.

7. Reflectorised Paint:
Reflectorised paint, if used, shall conform to the Specification by the manufacturers and approved by the Engineer. Reflectorising glass beads for reflectorising paints where used shall conform to the requirement of Clause 3.

8 Application

8.1. Marking shall be done by machine. For locations where painting cannot be done by machine, approved manual methods shall be used with prior approval of the Engineer. The Contractor shall maintain control over traffic while painting operations are in progress so as to cause minimum inconvenience to traffic compatible with protecting the workmen.

8.2. The thermoplastic material shall be applied hot either by screeding or extrusion process. After transfer to the laying apparatus, the material shall be laid at a temperature within the range specified by the manufacturer for the particular method of laying being used. The paint shall be applied using a screed or extrusion machine.

8.3. The pavement temperature shall not be less than 10°C during application. All surfaces to be marked shall be thoroughly cleaned of all dust, dirt, grease, oil and all other foreign matter before application of the paint.
The material, when formed into traffic stripes, must be readily renewable by placing an overlay of new material directly over an old line of compatible material. Such new material shall so bond itself to the old line that no splitting or separation takes place.
Thermoplastic paint shall be applied in intermittent or continuous lines of uniform thickness of at least 2.5 mm unless specified otherwise. Where arrows or letters are to be provided, thermoplastic compound may be hand-sprayed. In addition to the beads included in the material, a further quantity of glass beads of Type 2, conforming to the above noted Specification shall be sprayed uniformly into a mono-layer on to the hot paint line in quick succession of the paint spraying operation. The glass beads shall be applied at the rate of 250 grams per square metre area.

8.4. The minimum thickness specified is exclusive of surface applied glass beads. The method of thickness measurement shall be in accordance with Appendices B and C of BS - 3262 (Part 3).

8.5. The finished lines shall be free from ruggedncss on sides and ends and be parallel to the general alignment of the carriageway. The upper surface of the lines shall be level, uniform and free from streaks

Special Note:

1 Contractor Shall have to Submit the manufacture test certificate of retro reflective sheet before Starting the work at no Extra cost

2 Contractor Shall have to Submit the test report of retro reflective sheet from Govt. approved Laboratory testing of sheeting at no extra cost before producing First R.A bill and then after on end when asked by RMC. The contractor shall not be paid extra for same.

3 Contractor shall have to submit the filled form as mentioned below in Soft (Signed & Scanned) and two hard copies

USAGE CONFORMANCE CERTIFICATE

CLIENT NAME _____

CONVERTER NAME _____

CONTRACTOR NAME _____

WORK ORDER DETAILS _____

Details of the bollard fixing work is carried out using Name of Manufacturer

Sr. No.	Type of work with location	Size	Qty	Remarks

Certified that the bollard fixing work have been manufactured using Brand Name of (According to ASTM D 4956-09 TYPE XI) and are covered by the Warranty No.....Dated..... which will be expired on dated.....

Name of Manufacturer Name of Converter

Authorized Signatory Authorized Signatory

9. Measurements for Payment

9.1. The painted markings shall be measured in sq. metres of actual area marked (excluding the gaps, if any).

10. Rate:

The contract unit rate for road markings shall be payment in full compensation for furnishing all labour, material, tools, equipment, including all incidental costs necessary for carrying out the work at the site conforming to these specifications complete as per the approved drawing(s) or as directed by the Engineer and all other incidental costs necessary to compensate to complete the work to these specifications.

Special requirement for Hot Applied Thermoplastic Marking and Audible Vibratory Profile Marking Application on Road

1. The applicator should be either Manufacturer or authorized by the original manufacturer of the material. The applicator should submit such authorization certificate to the authority for the approval before commencing the work.

2. The manufacturer should be ISO certified organization and the copy of the certificate should be submitted to the authority.

3. Performance criteria:
   Material should be confirming to MoRTH specification and test certificate should be submitted as per the IRC 35-2015 for the reflectivity and luminance test time to time.

4. The applicator should organize onsite testing for the reflectivity performance with reflectometer initially at 7 (seven) days and afterwards at interval of every 12 months. The performance should meet IRC 35-2015 criteria.

5. The applicator should submit in original warranty for satisfactory in field performance as laid down in IRC 35-2015. The warranty should be in original and jointly signed by the original manufacturer and authorized applicator.

Item no.96 and 98:
Painting work as per instruction, deign after applying sinthetic enemal paint in background
And
Making of wall pictures

Materials:
The enamel paint shall satisfy in general requirements in specifications of oil paints. Enamel paint shall confirm to I S Latest edition.

Workmanship:
The materials required for work of painting work shall be obtained directly from approved manufacturer or approved dealer and brought to the site in maker's drum, bags etc. with seal unbroken.

All materials not in actual use shall be kept properly protected, lids of containers shall be kept closed and surface of paint in open or partially open containers covered with a thin layer of turpentine to prevent formation of skin. The materials which have become state or flat due to improper and long storage shall not be used. The paint shall be stirred thoroughly in its container before pouring into small containers. While applying also, the paint shall be continuously stirred in smaller container. No left over paint shall be put back into store tins. When not in use, the containers shall be kept properly closed.

If for any reasons, thinning is necessary, the brand of thinner recommended by the manufacturer shall be used.

The surface to be painted shall be thoroughly cleaned and dusted. All rust, dirt and grease shall be thoroughly removed before painting is started. No painting on exterior or other exposed parts of the work shall be carried out in wet, damp or otherwise unfavourable weather and all the surfaces shall be thoroughly dry before painting work is started.

Application of paint:
Brushing operations are to be adjusted to the spreading capacity advised by the manufacturer of particular paint. The paint shall be applied evenly and smoothly by means of crossing and laying off. the crossing and laying of consists of covering the area over with paint, brushing the surface hard for the first time over and then brushing alternately in opposite directions two or three times and then finally brushing lightly in a direction at right angels to the same. In this process, no brush marks shall be left after the laying off is finished. The full process of crossing and laying of will constitute one coat.

Each coat shall be allowed to dry completely and lightly rubbed with very fine grade of san paper and loose particles brushed off before next coat is applied. Each coat shall vary slightly in shade and shall be got approved from the engineer-in-charge before next coat is started.

Each coat except the last coat shall be lightly rubbed down with sand paper of fine pumice stone and cleared of dust before the next coat is applied. No hair marks from the brush or clogging of paint puddles in the corners of panels, angles of moulding etc. shall be left on the work.

Special care shall be taken while painting over bolts, nuts, rivets, overlaps etc. Approved best quality brushes shall be used.

Mode of measurement and payment:
The new steel and other metal surface shall be measured under this item.
All the work shall be measured net in the decimal system as executed subject to the following limits unless otherwise stated hereinafter.

a) Dimensions shall be measured to the nearest 0.01 meter.
b) Areas shall be worked out to the nearest 0.01 meter.

No deductions shall be made for openings not exceeding 0.5 sq.m. each and no addition shall be made for painting to beddings, moulding, edges, jambs, soffits, sills etc of such opening.

In case of fabricated structural steel and iron work, priming coat of paint shall be included with fabrication. In case of trusses, if measured is sq.m compound griders, stanchions, lattices, girder and similar work, actual are shall be measured and no extra shall be paid for painting on bolts heads, nuts, washers etc. No addition shall be made to the weight calculated for the purpose of measurements of steel and iron works for paint applied on shop or at site.

The different surfaces shall be grouped into one general item, areas of uneven surfaces being converted into equivalent plain areas in accordance with the table given as per Annexure-II for payment.

The rate is including priming coat.

The rate shall be for a unit of one square meter.

Item No.99:
S.S. railling S.S. pipe 304 grade with all fixture & fastening etc. complete.

Stainless steel railing should be laid commencing from one end and proceed towards the other end. The railing can be placed to different levels or patterns as directed by Engineer in Charge. With the help of gauges, the joint width specification should be checked in the first few running meters, where it should be ensured that the railing alignment is correct. To start with, full railing section should be used; only subsequently, cutting and in filling at edges be permitted. Under no Circumstances should the railing be forced or hammered into the bedding at the stage of lying. For cutting railing, hydraulic or mechanical block cutters, or power saws are used. Cut units of any shape and size less than required should not be used. Supporting brackets made out of S.S sections fixing with anchor fastener only. 15mm thick toughened glass of approved brand, shall be fixed with approved quality & design of film on one side of toughen glass as per the direction of Engineer in charge. The balusters shall be fixed in steps of stair / C.C block masonry at 1500 mm center to center in line & level. Hand rail of 38 mm diameter having 1.5mm wall thickness shall be jointed with baluster by appropriate accessories required of instructed make or as equivalent approved by Engineer-in-charge only. The entire work shall not be executed in loose fashion. If after erection railing found to be damaged due to erection or due to any type of negligence of the agency, the same shall be replaced without any extra cost.

Mode of measurement & payment:
The rate for railing with frame shall include the cost of materials & labour involved to finish the work.

The dimension of the railing shall be measured clear size of in closed position of railing between the two outer edges of the frame.

The payment shall be made on completion of work.

The unit rate for the item shall be for a unit of one Running meter.

Item No.100:
Chain Link Net - 2.6 mm thick wire on framing angle 40/40/5 mm support, patti 25/6 mm thick at 60 cm interval & vertical main support angle, 50/50/5 mm with CC 1:2:4 foundation 30×40×45cm size at 2.5 to 3.0 cm interval with double coat oil paint.

3.00 mm thick galvanized crimped wire mesh chequered in required height and in span as per instruction by fixing 30x30x12 G angle by preparing the span and 25x6 mm thick steel strip should be fixed at 0.50 m distance vertically in this span and the angle of 50x50x5 mm should be erected at the distance of 2.50 to 3.0 mt in trench of 30x40x45 cm and the prepared span should be fixed with nut, bolt etc and erected in line level. Finally, red led coat shall have to be applied with two coats of oil paint color as per instruction.

The rate shall be for a unit of one Square Meter.

Item No.101 to 103, 161, 162:
Manhole 1.20m/0.90m size 1.20m deep with excavation cement concrete 1:2:4 brick masonry 1:6 0.30mm thick, foundation cement plaster 1:3, benching 50mm thick, IPS 1:2:4, top 15cm thick CC copping 1:2:4 with quaring finishing (without cover plate)
And
Manhole 0.90m/0.60m size 1.20m deep with excavation cement concrete 1:2:4 brick masonry 1:6 0.30mm thick, foundation cement plaster 1:3, benching 50mm thick, IPS 1:2:4, top 15cm thick CC copping1:2:4 with quaring finishing (without cover plate)
And
Manhole 0.60m/0.60m size 1.20m deep with excavation cement concrete 1:2:4 brick masonry 1:6 0.30mm thick, foundation cement plaster 1:3, benching 50mm thick, IPS 1:2:4, top 15cm thick CC copping 1:2:4 with quaring finishing (without cover plate)
And
Drainage manhole should be done according to design given with ratio are at the bottom it should be C C 1:3:6 with brick mansonry 1:4 cum plaster 1:3 cm coping 1:1:2 and also benching around it with 1:2:4 should be done with finishing, curing, manhole frame cover and also with PVC step. (excluding excavation or suplly of frame cover) Type ---A--- :
Round : Up to 1.50 m depth * inside dia. 1200 mm (for drainage lines from 150 mm to 500 mm dia.) (Menhole type - A up to 1.00 meter depth)
And
Drainage manhole should be done according to design given with ratio are at the bottom it should be C C 1:3:6 with brick mansonry 1:4 cum plaster 1:3 cm coping 1:1:2 and also benching around it

with 1:2:4 should be done with finishing, curing, manhole frame cover and also with PVC step. (excluding excavation or suplly of frame cover) Type --- B --- : Round : for 1.50 to 4.00 m. depth and inside dia. 1500 mm (for drainage lines from 150 mm to 600 mm dia.) (up to 1.50 meter depth)

The said drainage manhole as per drainage type design is to carried out in brick masonry in CM 1:4 and CC in foundation in 1:3:6 including bedding, benching in 1:2:4 and the inside plaster work in niru finishing in CM 1:3 as per drainage drawing is to be carried out whereas the outer plaster in CM 1:3 is to be done with necessary fixing of HDPE reinforced plastic steps of size 385 x 165 x 0.25 mm as per given type design is to be done. Precast RCC manhole frame and cover is to be done 1:1.5:3 by filling cop ing and fixing work. The work shall be such that there shall not be no leakage in the manhole, in which, the rate for excavation shall be paid separately which is not included the prescribed rate. The frame and cover shall be provided by RMC Store and same shall have to be transported from Store to Site at the cost of contractor and fixing work is to be carried out accordingly, for which, the rate for only fixing work shall be paid.

The rate for manhole shall be for one number in which, the rate for frame and cover shall be paid separately where for additional depth, the rate shall be paid on one running meter basis as shown in Schedule of this tender.

THE MANHOLE AND DEPTH OF MANHOLES :-
The manholes on the sewers shall be constructed in the form and of the dimensions shown in the Drawing. The depth of the manholes shall be measured from the top of cover to the invert level of the manhole.

The manholes shall be constructed at places shown on the drawings or whatever directed by the Engineer. Type designs for these manholes are shown on the drawings but the actual type and dimensions shall in each case be determined by the Engineer as the circumstances may require. (Refer drawing No. R.M.C.- DRN - PHASE-III - 01 to 09)

CONSTRUCTION OF BRICK MASONRY MANHOLES :
The brick masonry shall be constructed as per the type design shown in the drawing enclosed. The various types of manholes to be adopted as per the requirement have been indicated in the L-section and sewer layout drawing in general. The manhole will be fitted with R.C.C. pre-cast medium or heavy duty manhole frame and cover as the case may be. The brick masonary manhole shall be plastered from inside and outside as shown in the drawing and as shown CM proportion and thickness.

FLOORS AND 0.80 ID CHANNEL PIPES :
The floor shall consist of cement concrete. Concrete of R.C. 0.80 ID channel pipes of the required size and curves shall be laid and bedded in cement on the concrete base to the same lines and fail as sewers unless otherwise directed. Both sides of the channel pipes shall be trenched up in concrete

and rendered in cement mortar 20 mm thick and formed to a slope of not less than 1 in 12 to the channel.

STEPS :
Where the depth of the invert exceeds 0.90 M below the surface of the ground, HDPE reinforced steps of approved pattern shall be provided as per type design shown in manhole drawings.

RATE OF MANHOLES :
The rate for construction of manhole to be quoted in the bill of quantities shall include complete masonry, structure, concrete cap, plastering with cement from inside and outside, bottom concrete or channels including providing and fixing of HDPE reinforced steps and fixing of R.C.C. manhole frame & covers complete as per type design drawing and cutting the pipes flush with the inside plaster of the wall. The manholes will be paid per numbers up to the minimum depth shown in the type design and for depth beyond the specified minimum depth for a particular type of manhole, extra will be paid per running meter depth. The rates includes dewatering during all stages of construction.

The brick masonry will be paid per number excluding excavation but including masonry, bottom concrete, plastering, benching channel fixing of RCC frame and covers. (Refer R.M.C. DRG for H.C.1, H.C.2)

The rate for Item No.101 to 103, 161 and 162 shall be for a unit of one number.

Item No.104 and 105:
RCC precast cover with supply, fitting, fixing with complete as per specification 10ton size 700/700/90mm.
And
RCC precast cover with jali supply, fitting, fixing with complete as per specification 10ton size 1000/1000/90mm

Precast RCC Square Frame and cover of 10 Tonne capacity of approved quality shall be brought. Manhole cover and frame shall be fixed in line level as per the instructions of Engineer-in-charge. The jail shall also have to be provided and necessary fitting and fixing work shall have to be carried as per requirement of engineer-in-charge.

The rate shall be for a unit of one number of frame+cover.

Item No.106 to 111:
Supply & Fixing of 4/6/8/12/15/18mm Thick Plywood of standard Brands viz. Averest / Dura / Kitplay / Century etc.

The plywood for general purpose shall conform I.S. latest edition.

Plywood is made by cementing together thin boards or sheets of wood into panels. There are always an odd number of layers, 3, 5, 7, 9 ply etc. The plies are placed so that grain of each layer is at right angle to the grain in the adjacent layer.

The chief advantages of plywood over a single board of the same thickness is the more uniform strength of the plywood, along the length and width of the plywood and greater ,resistance, to cracking and splitting with change in moisture content.

Usually synthetic resins are used for gluing, phenolic resions are usually cured in a hot press which compresses and simultaneously heats the plies between hot plates which maintain a temperature of 90 degree C to 140 degree and a pressure of 11 to 14 Kg/Sq. Cm. on the wood. The time of heating may be anything from 2 to 60 minutes depending upon thickness.

When water glue are used the wood absorbs so much water that the finished plywood must be dried carefully When synthetic resigs are used as adhesive the finished plywood must be exposed to an atmosphere of controlled humidity until the proper amount of moisture has been absorbed.

According to I.S. Latest edition, the plywood far general purpose shall be of the grades namely BWR; WWR and CWR, depending upon the adhesives used for bonding the veneers, and it will be further classified into six type namely AA, AB, AC, BB, BC and CC, based on the quality of the two faces, each face being moisture content not less than 8 percent and riot more than 16 percent.

Thickness of plywood boards

Board	Thickness	Board	Thickness	Board	Thickness	Board	Thickness
3 ply	3 mm	3 ply	5 mm	3 ply	9 mm	3 ply	16 mm
	4 mm		6 mm		13 mm		19 mm
	5 mm		8 mm		16 mm		19 mm
	6 mm		9 mm		13 mm		25 mm

The whole work shal have to be carried out as per the requirement of the item and as per the instructions of engineer in charge to his complete satisfaction.

The rate shall be for a unit of one Square Meter basis.

Item No.112:
Supply & Fixing of Laminates 1mm of Approved Quality

The Laminates 1mm of Approved Quality shall have to fixing with all the required material of approved quality as per the requirement and instructions of engineer in charge.

The whole work is to be carried out by providing all above and other necessary materials as may be required to complete the item as per requirement and instructions of engineer in charge to his satisfaction.

The rate will be paid for a unit of one square meter basis.

Item No.113:
Heavy Duty Type Hydrolic Door Closer Supply With Fixing As Per Require

Supply and fixing of heavy duty hydrolyc door closer to be done in existing door as per the instructions by engineer-in-charge with material of approved quality and size as may be required with all relevant for this item and as per the instructions of engineer in charge.

The rate will be paid for a unit of one Dozen basis.

Item No.114:
Making Table of wooden with sunmica sheet on both side with including all fittings & labour

The wooden table shall have to prepared by providing all the required material of approved quality as per the requirement and instructions of engineer in charge. The size of the table shall be 1.37 X 0.75 X 0.75. The plywood requirement and other details for making the table is as under:
Plywood of 18 mm of approved quality and water proof ISI Mark:56.0 Sq.Mt.
Plywood of 12 mm of approved quality and water proof ISI Mark:24.0 Sq.Mt.
Plywood of 6 mm of approved quality and water proof ISI Mark:32.00 Sq.Mt.

Sunmica 1 mm of approved quality 8'X4' size sheet 2 Nos.

Wooden Dhoka for foot rest and front potion of box for placing the Key-Board

Wooden Bidding patti as per requirement of 1" x 0.25" of 2" x 0.25" Steel Sliding channel of approved quality and make for drawers : 3 Nos.

Necessary Locks of approved quality : 3 Nos.

S S Handle as per instructions : 3 Nos.
Hinges of approved quality and size : 2 Nos.
Fevicol : 2 Kg
Nails, Screw, Magnet, Agrotape etc. as per requirement

Rickshaw Trip for bringing of materials - 1 Trip
Applying Oil Paint, Polishing, Astar, etc. for 1 Table including material and labour.

The whole work for preparation of table is to be carried out by providing all above and other necessary materials as may be required to complete the

item as per requirement and instructions of engineer in charge to his satisfaction.

The rate will be paid for a unit of one square meter basis.

Item No.115:
Wooden Partition work with wooden frame (both side plywood with sanmica sheet) (with material supply and labour work)

Item No.117:
Making main door with both side laminated 35 mm flush door including required 8 mm toughned glass, door lock, handle, hinges etc. completed as per engineer in charge instruction and design given by consultant

Providing and fixing 28 mm thick single shutter door with flush depressed panel design with core material PU foam done in situ & sandwich panel of 4 mm thick plywood & moulded in wooden blocks for fixtures. FRP thickness to be 1.50 mm to 2.00 mm including providing and fixing FRP moulded section frame of section size 100 mm x 50 mm chamfered type with FRP thickness of 2.00 mm and core of rigid polyurethene foam having density 32 Kg/ cmt to 36 Kg/cmt., compressive strength 3.5 Kg./sqcm to 4.5 Kg./sqcm. and fire retardant grade, PU foam shall be done situ with Canadian Ponderoza wooden blocks for fixtures. In built holdfast arrangement to use fasteners for fixing with masonry or R.C.C. The whole section of frame and shutter shall be waterproof, acid / alkali resistant & well coat colour. the frame and shutter shall be fixed with all necessary stainless steel fixtures and fastenings etc. complete as per direction of engineer
in charge.

Materials:-
Frame materials shall be of fire extinguishing grade FRP skin having section 100 mm x 50 mm chamfered type with thickness of 1.50 mm to 2.00 mm and core material shall be fire extinguishing grade rigid polyurethane foam having density 32 Kg/ cu.cm to 36 Kg/ cu.cm, flexural strength 1.8 Kg / Sqcm to 2.00 Kg / Sqcm and compressive strength
3.5 Kg / Sqcm to 4.5 Kg / Sqcm. Whole frame shall be water proof, weather proof, termite proof and mild acid / alkali resistance. P.U foam shall be done in situ with plantation wooden pieces embedded inside for holding fixtures and stiffening. Frame shall be straight in line, level and having three joint-less pieces. Frame shall be fixed in masonry / R.C.C with Mild Steel hold fast or with 115 mm long screws as hold fast with sleeve in position and finished in colour cement. 28 mm thick shutter in depressed panel design shall be having 1.5 mm to 2.0 mm thickness fire extinguishing grade FRP skin, sand-witch panel of 4 mm thick plywood and embedded wooden pieces for stiffening as well as holding hinges and fixture, all molded into a one piece shutter. Core material shall be injected fire extinguishing grade rigid polyurethane foam done in situ having density 32 Kg / Cucm to 36 Kg / Cucm compressive strength 1.8 Kg / Sqcm to 2.00 Kg / Sqcm, flexural strength 3.5 Kg / Sqcm to 4.5 Kg / Sqcm. Whole shutter shall be water proof, weather proof, termite proof and mild acid/alkali resistance. 28 mm

thick depressed panel FRP shutter shall be joint-less. It shall be straight and smooth and of standard shape finished in gel coat. All necessary fixture and fastening shall be fixed where wooden pieces are provided.

Workmanship:
Frame shall be fixed in masonry/R.C.C member. Shutter shall be fixed in true line; level and proper manner having 2.0 to 3.0 ply i.e. air space for smooth and easy working. Pull handles, Door stopper, Door stopper, bearing hinges & S.S self tapping Philips cross head special screws conforming to anti corrosive high grade AISI 304 stainless steel of standard make or as equivalent approved by Engineer-in-charge conforming to anti corrosive high grade AISI 304 stainless steel only, & Tower bolt of the make Orbit or as equivalent approved by Engineer-in-charge conforming to standards of ORBIT & anti corrosive high grade AISI 304 stainless steel only.
All fixtures and fastenings of standard make shall conform to AISI 304 Grade Stainless Steel.

The following table presents main elements (forming the Chemical composition) of AISI 316 Grade Stainless Steel.

- It can withstand the corrosion caused by atmospheric / environmental or major chemical reactions.
- It can resist high temperatures without going under any deformity which makes it highly recommended for fire safety doors in any building.
- It shall have remarkable creep strength and Rupture strength.
- It shall be repelled the Bacteria & shall be made higher degree of hygiene.
- It shall be of natural finish, it shall not required regular cleaning or maintenance making it most suitable for public places.
- It shall tolerate forceful and intense use.
- Specially developed fixing stud and grubs shall be used to ensure accurate fitting of elements and eliminates shaking of elements.

Fixtures & Fastenings:
Following fixtures and fastening shall be used for single shutter. All fixtures and fastening of the make shall be of anti corrosive high grade AISI 304 stainless steel in Glossy & satin combination finish only. Fixtures and fastening of standard make shall be fixed by skill person only.

The rate shall include anti corrosive high grade AISI 304 stainless pull handle, hinges, door stopper in Glossy & satin combination finish of the standard make including fixing with S.S self tapping Philips cross head special screws and Stainless steel tower bolt of the make Orbit. The size and number of hinges shall be as per table given above± 1.50 mm tolerance will be allowed in thickness of shutter and ± 1.20 to 2.00 mm for size of frame.

Mode of measurements & payment:
The rate for shutter includes cost of anti corrosive high grade AISI 304 stainless pull handle, Door stopper, hinges, S.S self tapping Philips cross head special screws in Glossy & satin combination finish of standard make, tower bolt of the make orbit. The dimensions of the door shall be measured clear size of the opening made for fixing of door with frame.

The rate shall be for a unit of one sq. metre.

Item No.121:
White porcelain wash basin 560/410mm indian make C.I. bracket with fitting chromium platted topes 25cm plastic waste pipe and 12mm pillar cock with comp.

1.0: Materials :

1.1. The white glazed earthenware wash basin shall be 560 mm. x 410 mm. of 1st quality and make as approved by the Engineer-in-charge. The wash basin shall conform to M-59.

2.0 Workmanship :

2.1 The wash basin shall be fixed on the wall as and where directed. The wash basin shall be supported on a pair of R.S. or C.I. brackets fixed in C.M.1:3. (1 cement : 3 sand). The bracket shall conform to I.S. : latest edition. The wall plaster on the rear shall be cut to rest the top edge of the wash basin. After fixing the basin, plaster shall be made good and surface finished to match with the existing one. :

2.2 The bracket shall be painted white with ready-mixed paint.

2.3. The C.I. brass trap and union shall be connected to 32 mm. dia. waste pipewhich shall be suitably bent towards the wall and which shall discharge into an open drain leading to a gully trap. or direct in to the gully-trap on the ground floor and shall be connected to a waste pipe through a floor trap on the upper floors. C.P. brass trap and union may not be provided where the surface drain or a floor trap is placed directly under the basin and the waste is discharged intovertically.

2.4. The height of the front edgeof the wash basin from the floor level shall be 80 cms.

2.5. The necessary inlet, outlet connections and fittings such as pillar cocks; CP Grass waste trap waste pipe, stop cock, chain wish rubber plug etc. shall be fixed.

2.6. The payment of fittings shall be made separately under separate items.

3.0: Mode of measurements & payment

3.1. The rate includes cost of all labour, materials, tools and plant etc. required for satisfactory completion of this item as specified in workmanship.

3.2. The rate shall be for a unit of One number.

Item No.122:

White porcelain Kitchen Sink size 60/450/200 mm with supply and fitting

1.0: Materials:

1.1. The white glazed earthenware sink shall be 60/450/200 mm. of 1st quality and make as approved by the Engineer-in-charge. The wash basin shall conform to M-59.

2.0. Workmanship:

2.1. The sink shall be fixed on the wall as and where directed. The wash basin shall be supported on a pair of R.S. or C.I. brackets fixed in C.M.1:3. (1 cement : 3 sand). The bracket shall conform to I.S. : latest edition. The wall plaster on the rear shall be cut to rest the top edge of the wash basin. After fixing the basin, plaster shall be made good and surface finished to match with the existing one. :

2.2. The bracket shall be painted white with ready-mixed paint.

2.3. The C.I. brass trap and union shall be connected to 32 mm. dia. waste pipe which shall be suitably bent towards the wall and which shall discharge into an open drain leading to a gully trap. or direct in to the gully-trap on the ground floor and shall be connected to a waste pipe through a floor trap on the upper floors. C.P. brass trap and union may not be provided where the surface drain or a floor trap is placed directly under the basin and the waste is discharged into vertically.

2.4. The height of the front edge of the wash basin from the floor level shall be 80 cms.

2.5. The necessary inlet, outlet connections and fittings such as pillar cocks; CP Grass waste trap waste pipe, stop cock, chain wish rubber plug etc. shall be fixed.

2.6. The payment of fittings shall be made separately under separate items.

3.0: Mode of measurements & payment

3.1. The rate includes cost of all labour, materials, tools and plant etc. required for satisfactory completion of this item as specified in workmanship.

3.2. The rate shall be for aunit of One number.

Item No.123:

Providing and fixing water closet squatting pan (Indian type W.C. Pan) size 580 mm including "P" trape (Earth work, bed concrete, foot - rests measured and paid for separately) Vitreous china, Long pattern white colour.

1.0 Materials:

1.1. Water closet squatting pan (Indian type W.C. Pan) shall conform to M-62. Cement mortar shall conform to M-11

2.0. Workmanship

2.1. The pan shall be sunk into the floor and embedded in a cushion of average 15 cm. cement concrete 1 : 5 : 10 (1 cement: 5 fine sand: 10 graded stone aggregate or brick aggregate 40 mm. nominal size) or as specified. This concrete shall be left 115 mm. below the top level of the pan so as to allow for flooring and its bed concrete. The floor should be suitably sloped so that the waste water is drained into the pan. The pan shall be provided with 100 mm. 'P' or 'S' trap as specified in the item No. 23.113 with approximately 50 mm. seal. The joints between the pan and the trap shall be made leak-proof with cement mortar 1 : 1 (1 cement: 1 fine sand).

3.0. Mode of measurements & payment

3.1. The rate shall include the cost of all materials and labours involved in the operations described under workmanship.

3.2. The rate shall be for a unit of One number.

Item No.124:
Flushing Valve Brass Chromium Platted push cock or handle type with flushing supply and fixing

Providing, supplying and fixing of flush valve of 25 mm dia, brass chrome plated push cock or handle type with flushing of approved quality and make including necessary fittings, fixing as directed by the engineer-in-charge etc complete.

The rate for this work will be paid per Number basis.

Item No.125 and 126:
Supply & Fixing of 75 mm / 100 mm PVC crowel

The contractor shall have to supply PVC fittings vz. Bends, tees, coupler, crowel, etc. of required dia size as per the requirement and of approved quality by the engineer in charge. Subsequently the fixing of the same shall have to be carried out with all required material etc. and complete the whole work as per the requirement and to the satisfaction of engineer in charge.

The rate shall be for a unit of One number basis.

Item No.127:
White Glazed P trape with fixing

The trap shall be provided of size 100 mm of type "P" with approximately 50 mm. seal. The joints between the pan and the trap shall be made leak-proof with cement mortar 1:1 (1 Cement: 1 Fine Sand).

The rate shall be paid for a unit of number basis.

Item No.128 and 129:
European type w/c with sit, cover fixing with comp. standard quality

And
European type w/c with sit, cover fixing charge

MATERIALS

Orissa type water closet:
The specification of Orissa type white glazed water closet of first quality shall conform to IS: latest edition and relevant specification of Indian type water closet except that pan will be with the integral squatting pan of size 580 x 440 mm with raised footrest.

WORKMANSHIP
The pan shall be sunk into the floor and embedded in a cushion of average 15 cm cement 1:5:10 (1 Cement: 5 Fine Sand: 10 Graded stone aggregate 40 mm. nominal size) or as specified. This concrete shall be left 115 mm below the top level of the pan so as to allow for flooring and its bed concrete. The floor should be suitably stopped so that the waste water is drained into the pan. The pan shall be provided with 100 mm 'P' or 'S' traps as specified in with approximately 50 mm seal. The joints in the pan and the trap shall be made leak-proof with cement mortar 1:1 (1 Cement: 1 Fine Sand).

The rate shall be paid for a unit of number basis.

Item No.130:
Plastic Waste Pipe supply fixing for Wash Basin

A typical plastic waste pipe, made from unplasticized polyvinyl chloride (UPVC), is specified by its nominal outside diameter (DN) 40 in millimeters. It should adhere to relevant standards like IS 13592.

Key points about plastic waste pipe specifications:
Material: Primarily UPVC (unplasticized polyvinyl chloride) due to its durability and resistance to chemicals.
Size designation: Nominal outside diameter (DN) in millimeters.
Joint type: Usually solvent-weld or rubber ring fit.
Pressure class: Indicated by a pressure rating in kg/cm2, determining the pipe's ability to withstand water pressure.
Relevant standard: In India, IS 13592 specifies requirements for UPVC pipes used in soil and waste discharge systems.

The rate shall be paid for a unit of number basis.

Item No.131:
Chini gully trap approved quality supply with fitting and C.I. jali required size with fitting

The gully trap shall conform to IS: latest edition. It shall be sound, free from defects such as fire cracks or hair cracks. The glaze of the traps shall be free

from crazing. They shall give a sharp clear note when struck with light hammer. There shall be no broken blisters.

Each gully trap shall have one C.I. grating of square size correspodning to the dimensions, of inlet of gully trap. It will also have a water tight C.I. cover with frame inside dimension 300 mm x 300 mm. The cover with frame inside dimensions 300 mm x 300 mm the cover weighing not less than 4.53 kg and the frame not less than 2.72 kg. The grating cover and frame shall be of sound and good casting and shall have truly square machined seating faces.

The rate shall be paid for a unit of number basis.

Item No.132:
White Porcelain Urinal with required plastic waste pipe fitting and fixing Providing and fixing urinal of approved quality including connecting the urinal with waste pipe, trap etc. complete : white earthen ware flat back or corner type size 430 mm. x 260 mm. x 350 mm

1.0 Materials :

1.1 The white earthenware flat pack or corner type urinal of size 430 mm. 260 mm. x 350 mm. shall conform to M-64.

2.0 Workmanship:

2.1 The urinals shall be fixed in position by using wooden plugs and screws and shall be at a height 65 cms. from the floor level to the top of the lip or urinal, unless otherwise directed. The wooden plugs shall be 50 mm. x 50 mm. at base lapping to 38 mm. x 38 mm. at top and 50 mm. in length shall be fixed in wall in cement mortar 1 : 3 (1 cement : 3 coarse sand).

The urinal shall be connected to 32 mm. dia. galvanized mild steel waste pipe which shall discharge in the channel or floor trap. The connection between the urinal and flush or waste pipe shall be made by means of putty or white lead mixed with chopped hemp.

3.0 Mode of measurements & payment :

3.1 The rate includes cost of all labour, materials, tools and plants etc. required for satisfactory completion of this item.

3.2 The rate shall be for a unit of one number.

Item No.133:
Providing & fixing PVC Nahni trap of 7.6 cm complete

Providing and fixing U-PVC 3.5" thick of prince/supreme/jain make nanhi trap at all floor levels, of the following nominal diameter of self cleaning design with C.I. screwed down or hinged grating including cost of cutting and making good the walls and floors 100 mm. inlet and 50 mm outlet etc. complete.

1.0 MATERIALS

1.1 The UPVC nahni trap shall conform to M-68-A.

2.0 WORKMANSHIP

2.1 The nahni trap with 100 mm.dia. inlet and 50 mm.dia. outlet shall be fixed as per drawings or as directed.

2.2 The nahni trap shall be jointed with PVC pipe, 75 mm.dia. with jointing materials as per manufacturer's instruction.

3.0 MODE OF MEASUREMENTS & PAYMENTS

3.1 The rate includes cost of all labour, materials, tools and plants etc. required for satisfactory completion of this item including lead jointing and testing.

3.2 The rate shall be for a unit of one number.

1.0 MATERIAL

1.0 Nahni trap

1.1. Nahni Trap shall be of PVC material and shall be sound and free from porosity or any defects which affect serviceability. The thickness of the base shall not be less then 6.5 mm. The surface shall be smooth and free from sraze, chips and other flaws or any other kind of defect which affect serviceability. The size of Nahni trap shall be specified and shall be of self cleaning design.

1.2 The Nahni trap shall be of quality approved by Engineer in charge and shall generally confirm to the relevant Indian standard

1.3 The Nahni trap provided shall be with deep seal minimum 50 mm expect at places where trap with deep seal cannot be accommodated. The cover shall be PVC perforated cover shall be provided on the trap of appropriate size as approved by Engineer in charge.

1.4 The Nahni trap supplied on site shall be in good condition without any damages in it and the surface shall be bright and smooth without any scratch etc.

2.0. WORKMANSHIP FITTING & FIXING

2.1. When the Nahni trap are to be Fitted, the ends shall be carefully filed out so that no obstruction to bore in offered. The Nahni trap shall be fitted with pipes carefully in such a manner as will not result in slackness of joints when the two pieces are screwed together

2.2 In jointing the Nahni trap the inside of the socket. The end shall then be tightly fixed in the socket, when Nahni trap is feted with a pipe wrench Care shall be taken that all items are free from dust, dirt and rust during fixing Burr from the joints shall be removed after fixing. After fixing, the open ends of the Nahni trap shall be temporarily plugged to prevent excess of water soil or any other foreign matter.

TESTING OF JOINTS

After fitting, the Nahni traps shall be inspected under working conditions of pressure and flow. Any joints found liken shall be redone, and all leaking Nahni traps shall be removed and replaced without extra cost.

The Nahni traps shall be tested in sections as the work laying proceeds, veeping the joints exposed for inspection during the testing.

3.0 MODE OF MEASUREMENT & PAYMENT :

3.1. The unit rate of Nahni trap shall include the cost of all materials, tools and plant required for fitting, the same to specified position as per drawings, and as directed by Engineer in charge finishing structure, etc, and all other incidental expenses for producing item of Nahni trap work to complete the structure or its components as shown on the drawings, and as directed by Engineer in charge and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

The rate of Nahni traps shall include the cost of all labour, materials, G I fittings as required, tools and plant scaffolding and all incidental expenses as described herein above.

3.2. The Nahni trap shall be measured for its **Number**, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one Number.

3.3. The payment will be made on number basis of the finished work.

Item No.134:
Supply & Fixing of White Porcelain Ladies Urinal

MATERIALS

The specification of white glazed water closet of first quality shall conform to IS: latest edition and relevant specification of Indian type water closet except that pan will be with the integral squatting pan of size 580 x 440 mm with raised footrest.

WORKMANSHIP

The pan shall be sunk into the floor and embedded in a cushion of average 15 cm cement 1:5:10 (1 Cement: 5 Fine Sand: 10 Graded stone aggregate 40 mm. nominal size) or as specified. This concrete shall be left 115 mm below the top level of the pan so as to allow for flooring and its bed concrete. The floor should be suitably stopped so that the waste water is drained into the pan. The pan shall be provided with 100 mm 'P' or 'S' traps as specified in with approximately 50 mm seal. The joints in the pan and the trap shall be made leak-proof with cement mortar 1:1 (1 Cement: 1 Fine Sand).

The rate shall be paid for a unit of number basis.

Item No.135:
Chromium Platted Brass Screw Down Cock 20 mm dia. fitting with fixing

The chromium plated Brass Cock Screw down bolt type of 15 mm dia is to be provided and all the necessary fitting and fixing with required material as per the instructions of engineer in charge is to be carried out and complete accordingly.

The rate shall be for a unit of one number.

Item No.136 and 137:
Trusted brass cock, stop cock etc. 20mm and 15 mm dia Screw down bolt type fitting with fixing.

The trusted brass Cock stop cock bolt type of 20/15 mm dia is to be provided and all the necessary fitting and fixing with required material as per the instructions of engineer in charge is to be carried out and complete accordingly.

The rate shall be for a unit of one number.

Item No.138:
Brass toper cock 20mm dia. fitting with fixing.

The Brass toper cock of 20 mm dia is to be provided and all the necessary fitting and fixing with required material as per the instructions of engineer in charge is to be carried out and complete accordingly.

The rate shall be for a unit of one number.

Item No.139 to 144:
Fixing of Brass wheel valve etc. 15 / 20 / 25 mm dia:

The ISI Marked brass wheel valve of size 15 mm / 20 mm / 25 mm dia shall have to fitted as per instructions of engineer-in-charge.

The rate for this work will paid per Number basis.

Item No.145:
Aluminiam round pipe 12mm dia. fitting with fixing.

The aluminum round pipe of 12 mm dia of required length shall be supplied and fitting work is to be carried out as per the instructions of engineer-in-charge and complete the work as per the instructions as per requirement.

The rate shall be for a unit of running meter basis.

Item No.146:
Aluminiam paper holder 15mm dia. fitting with

The aluminum paper holder of 12 mm dia shall be supplied and fitting work is to be carried out as per the instructions of engineer-in-charge and complete the work as per the instructions as per requirement.

The rate shall be for a unit of one number basis.

Item No.147:
Providing and fixing 400 mm X 300mm bevelled edge mirror with bracket and fixing & fitting etc complete.

Mirror shall be of iron and shall be sound and free from porosity or any defects which affect serviceability. The thickness of the base metal shall not be less then 6.5 mm. The surface shall be smooth and free from sraze. chips and other flaws or any other kind of defect which affect serviceability. The size of Mirror shall be specified and shall be of self cleaning design.

The Mirror shall be of quality approved by Engineer in charge and shall generally conform to the relevant Indian standard

The Mirror provide shall be with fitted on wall of glazed tiled surface of wall by drilling holes duly plugged by wooden gutties by appropriate size of screws as approved by Engineer in charge.

The Necessary fittings like, screws etc, shall be of best quality and makes as approved by the Engineer-in-charge.

WORKMANSHIP Fitting

When the Mirror are to be Fitted, the surface of wall or tiles shall not be damaged. The Mirror shall be fitted on walls carefully by drilling holes in surface of walls or tiled surface of wall carefully while fitting of sockets

MODE OF MEASUREMENT & PAYMENT:

The unit rate of Mirror shall include the cost of all materials, tools and plant required for fitting, the same to specified position as per drawings, and as directed by Engineer in charge finishing structure, etc, and all other incidental expenses for producing item of Mirror work to complete the structure or its components as shown on the drawings, and as directed by Engineer in charge and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

The rate of Mirrors shall include the cost of all labour, materials, fittings as required, tools and plant scaffolding and all incidental expenses as described herein above.

The Mirror shall be measured for its Number, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one Number.

The payment will be made on number basis of the finished work.

Item No.148:
Automatic flushing cock with flushing pipe fitting and fixing

A flushing cock with ISI marked with required pipe and fittings shall have to supplied and fitted as per instructions of engineer-in-charge.

The rate for this work will paid per Number basis.

Item No.149, 150 and 151:
Providing and fixing sign board of size 2.50 x 1.15mt.
And
Supplying and fixing 3mm thick acrelic sheet street sign board of size 12" x 18" etc. complete.
And
Supply and fixing Sign board of size 4' x 2'-6" - double side with one pole (welded two channel of size 75 x 40 x 4 mm), framing 35 x 35 x 5mm. C.R.C. sheet 16 gauge, with radium back ground and letters etc. complete.

Acrylic Sheet must confirm to IS:14753 or latest edition. Acrylic sheet shall be of 6 mm thickness and of required size. It should be light in weight. It shall be white in colour. It shall be extremely resistant to sunlight, weather and temperatures.

It shall not show any significant yellowing or change in physical properties or loss of light transmission over a longer period of use. The sheet shall be impact resistant also.

Work includes necessary fittings, fixing at the place as directed by the engineer-in-charge etc. complete.

The rate for this work will be paid per number of board basis.

Item No.152:
Supply of Steel characters for RMC buildings

Providing, supplying and fixing of steel characters of approved quality including necessary fittings, fixing as directed by the engineer-in-charge etc complete.

The rate for this work will be paid per square inch basis.

Item No.153:
Painting work of Road divider stone 0.75 mtr height with primer and two coat of oil paint

In this work the color work to road divider blocks except flooring including top the portion outside the road (from ground) is to be carried out with the oil paint of approved quality. The shade of various colors shall be used as approved by

the engineer-in-charge. The work is to be carried out as per the instructions of engineer-in-charge.

For this color work, first of all primer is to be applied to old road divider blocks thereafter one coat is to be applied for whole work and shall have to be got checked from the engineer-in-charge and thereafter only the second coat is to be applied. The liquid between the two colors shall be done with due care and in line level.

The rate for this work shall be for running meter basis.

Item No.155:
Supplying and fixing 10mm toughened glass (including cost of necessary fitting, as per instruction of engineer in charge etc. complete

The plain toughened glass for door-window with necessary fittings is to be carried out including oil paint with fixing of plain glass complete. The whole work is to be carried out as per requirement and up to satisfaction of engineer in charge.

The rate shall be for a unit of one square meter.

Item No.156:
Supply & fixing Granite Tackti with Required carving & fixing it with Cement at Specified Place Etc Complete

The work of supply and fixing of one side polished granite of 18 mm thick shall have carried out as required by engineer in charge. The workmanship, under layer, mixing of materials, laying, grinding and curing etc. shall also be carried out and complete the whole work as per the instructions of engineer in charge.

The payment will be made on square meter basis.

Item No.157:
Supply & Fixing of 3-4 mm thick color glass framing with 12.00 mm Rolly-Kolly or Lapi, pin, etc. fitting complete

The work is to be carried out with supply and fixing of Supply & Fixing of 3-4 mm thick color glass with framing. The whole work of this item is to be carried out and completed as per the instructions of engineer in charge.

The rate shall be for a unit of one square meter basis

Item No.160:
Wooden art ralling including TMT steel, G.I. wire 12gauge and 20 gauge,colour, chemical roff, white cement putti etc. complete.

The work is to be carried out as per the instructions of engineer-in-charge.

The payment will be made for each square meter of wooden art done.

Item No.163:
Inspection chamber with inside dimension 300 mm x 300 mm x 450 mm depth with Cast Iron Air Tight Frame Cover Supplying & Fixing etc. Complete

Providing and constructing inspection chamber as per the type design in brick masonry in C:M 1:3 and outside plastering in C:M 1:3 necessary coping in RCC M200 fixing CI steps and fixing manhole frame and covers over manholes etc. complete, providing and fixing safety chain wherever necessary as per the stipulations in the type design complete.

The rate for this work will be paid per chamber.

Item No.164 to 169:
Providing and fixing to wall ceiling and floor 6 kgs/Sq. CM. workings pressure polythene pipes of the following outside diameter, low density complete with special flange compression type fittings wall clips etc. including making good the wall/ceiling and floor – 50 mm / 63 mm / 70 mm / 90 mm / 110 mm / 140 mm

1.0. Material

1.1. The low density polythene pipe of specified diameter with 6 Kg/Sq. cm. working pressure shall conform to IS. latest edition. The specials and fittings required shall be of best quality.

2.0. Workmanship

2.1. The PVC. pipes of specified diameter shall be fixed as directed: Due to thermal expansion of rigid PVC pipes, due allowance shall be made particularly in over ground pipe lines for any change in length of pipe line which may occur during installation or when pipe line is in service:

2.2. Above ground installation of rigid PVC; pipe should be undertaken after preparations are observed for their protection against direct sun rays and mechanical damage.

2.3. The rigid PVC. pipe lines should not be kept exposed above ground when it passes through public places, railway lines, road side and foot paths.

2.4. PVC.pipes shall be supported at the following intervals:
- 20 mm. dia. 500 mm. - 25 mm. dia. 750 mm. - 32 mm. dia 900 mm:

2.5. Close support spacing shall be provided if recommended by the manufacture.

2.6. The guide lines indicated by the manufacturer regarding handling, transportation, storing, laying and jointing of pipes shall be kept in view during execution.

2.7. PVC pipes shall be fixed on wall with wooden plugs and suitable plastic clamps.

2.8. Jointing the pipes:

2.8.1. The pipes and sockets shall be accurately cut. The ends of the pipes and fittings should be absolutely free from dirt and dust. The outside surface of the pipes and the inside of the fittings shall then be roughened with emery paper, and then solvent cement joint. Since solvent, cement is aggressive to PVC care must be taken to avoid applying excessive cement to the inside of pipe sockets as any surplus cement cannot be wiped off after jointing. Empty solvent cement tins, brushes, rags, or paper unpregnated with cement should not be buried in the trenches. They should be gathered not left scattered about, as they can prove to be a hazard to animals, which may chew them.

2.8.2. If any manufacturer recommends its own methods of jointing the same shall be adopted after necessary approval from the Engineer-in-charge.

2.9. Laying pipes in Trenches:

2.9.1. The pipes shall be laid over uniform relatively soft fine grained soil found to be free of presence of hard objects such as large flints, rocky projections; large tree roots etc. The width of the trenches shall be minimum width required for working.

2.9.2. The pipes laid underground shall not be less than one meter from the ground level. The pipe shall be positioned in the trenches so as to avoid any induced stressed due to deflection. Any deviation required shall be obtained by using proper type of rubber ring joints.

3.0. Mode of measurements and payment

3.1. The description of each item shall, unless otherwise stated, be held to include where necessary, conveyance, and delivery, handling, unloading, storing, fabrication, hoisting, all labour for finishing to required shape and size, setting, fitting in position, straight, cutting and waste, return of packings etc.

3.2. The length shall be measured on running meter basis of finished work. The length shall be taken along the centre line of the ,pipe and fittings. The pipes fixed to walls, ceiling; floors etc. shall be measured and paid under this item.

3.3. All the work shall be measured in decimal system as fixed in its place, subject to tolerance given below unless otherwise stated. .

(i) Dimension shall be measured to the nearest 0.01 metre.

(ii) Area shall be worked out to the nearest 0.01 sq.meter

3.4 All measurements of cutting shall unless otherwise stated be held to include the consequent waste.

3.5. In case of fitting of unequal bore, the largest bore shall be measured for the test.

3.6. Testing of pipe lines, fittings, and joints include for providing all plant and appliances necessary for obtaining access to the work to be tested and carrying out the tests.

3.7. The rate includes galvanized steel tubing with screwed socket joints, together with all fittings (such as bends, sockets, springs, elbows, tees, crosses, short pieces, clamps and plugs unions etc.) and fixing complete with clamping wall- hooks, wooden plugs etc. and also cutting, screwing and waste and for making forged (or handmade) bends on piping as required. Connector shall be inserted, where required or directed. The rate also includes cutting through walls, floors etc. and their making good and painting exposed threads with anticorrosive paint as above and testing. Where tubes are to be fixed to wail, ceiling and flooring, the rate shall not include painting of pipes, providing sleeves and sand filling under floor for which separate payment shall be made.

3.8. The rate shall be for a unit of One running meter.

Item No.170 to 181:
Providing and fixing PVC fittings 6 Kg / sq.cm. viz. coupler bend, elba, tee, etc. of approved brand and quality - – 15 / 20 / 25 / 32 / 40 / 50 / 65 mm dia

The contractor shall have to supply PVC fittings vz. Bends, tees, coupler, etc.of required dia size as per the requirement and of approved quality by the engineer in charge. Subsequently the fixing of the same shall have to be carried out with all required material etc. and complete the whole work as per the requirement and to the satisfaction of engineer in charge.

The rate shall be for a unit of One number basis.

Item No.182 to 187:
Providing and fixing to wall ceiling and floor 4 to 6 kgs/Sq. CM. workings pressure polythene pipes of the following outside diameter. low density complete with special flange compression type fittings wall clips etc. including making good the wall/ceiling and floor 50 mm / 60 mm / 75 mm / 90 mm / 110 mm / 140 mm

1.0. Material

1.1. The low density polythene pipe of specified diameter with 6 Kg/Sq. cm. working pressure shall conform to IS. latest edition. The specials and fittings required shall be of best quality.

2.0. Workmanship

2.1. The PVC. pipes of specified diameter shall be fixed as directed: Due to thermal expansion of rigid PVC pipes, due allowance shall be made particularly in over ground pipe lines for any change in length of pipe line which may occur during installation or when pipe line is in service:

2.2. Above ground installation of rigid PVC; pipe should be undertaken after preparations are observed for their protection against direct sun rays and mechanical damage.

2.3. The rigid PVC. pipe lines should not be kept exposed above ground when it passes through public places, railway lines, road side and foot paths.

2.4. PVC.pipes shall be supported at the following intervals:
- 20 mm. dia. 500 mm. - 25 mm. dia. 750 mm. - 32 mm. dia 900 mm:

2.5. Close support spacing shall be provided if recommended by the manufacture.

2.6. The guide lines indicated by the manufacturer regarding handling, transportation, storing, laying and jointing of pipes shall be kept in view during execution.

2.7. PVC pipes shall be fixed on wall with wooden plugs and suitable plastic clamps.

2.8. Jointing the pipes:

2.8.1. The pipes and sockets shall be accurately cut. The ends of the pipes and fittings should be absolutely free from dirt and dust. The outside surface of the pipes and the inside of the fittings shall then be roughened with emery paper, and then solvent cement joint. Since solvent, cement is aggressive to PVC care must be taken to avoid applying excessive cement to the inside of pipe sockets as any surplus cement cannot be wiped off after jointing. Empty solvent cement tins, brushes, rags, or paper unpregnated with cement should not be buried in the trenches. They should be gathered not left scattered about, as they can prove to be a hazard to animals, which may chew them.

2.8.2. If any manufacturer recommends its own methods of jointing the same shall be adopted after necessary approval from the Engineer-in-charge.

2.9. Laying pipes in Trenches:

2.9.1. The pipes shall be laid over uniform relatively soft fine grained soil found to be free of presence of hard objects such as large flints, rocky projections; large tree roots etc. The width of the trenches shall be minimum width required for working.

2.9.2. The pipes laid underground shall not be less than one meter from the ground level. The pipe shall be positioned in the trenches so as to avoid any induced stressed due to deflection. Any deviation required shall be obtained by using proper type of rubber ring joints.

3.0. Mode of measurements and payment

3.1. The description of each item shall, unless otherwise stated, be held to include where necessary, conveyance, and delivery, handling, unloading, storing, fabrication, hoisting, all labour for finishing to required shape and size, setting, fitting in position, straight, cutting and waste, return of packings etc.

3.2. The length shall be measured on running meter basis of finished work. The length shall be taken along the centre line of the ,pipe and fittings. The pipes fixed to walls, ceiling; floors etc. shall be measured and paid under this item.

3.3. All the work shall be measured in decimal system as fixed in its place, subject to tolerance given below unless otherwise stated. .

(i) Dimension shall be measured to the nearest 0.01 metre.

(ii) Area shall be worked out to the nearest 0.01 sq.meter

3.4 All measurements of cutting shall unless otherwise stated be held to include the consequent waste.

3.5. In case of fitting of unequal bore, the largest bore shall be measured for the test.

3.6. Testing of pipe lines, fittings, and joints include for providing all plant and appliances necessary for obtaining access to the work to be tested and carrying out the tests.

3.7. The rate includes galvanized steel tubing with screwed socket joints, together with all fittings (such as bends, sockets, springs, elbows, tees, crosses, short pieces, clamps and plugs unions etc.) and fixing complete with clamping wall- hooks, wooden plugs etc. and also cutting, screwing and waste and for making forged (or handmade) bends on piping as required. Connector shall be inserted, where required or directed. The rate also includes cutting through walls, floors etc. and their making good and painting exposed threads with anticorrosive paint as above and testing. Where tubes are to be fixed to wail, ceiling and flooring, the rate shall not include painting of pipes, providing sleeves and sand filling under floor for which separate payment shall be made.

3.8. The rate shall be for a unit of One running meter.

Item No.188 to 193:
Fixing of Gun metal full way wheel valve etc. 15 / 20 / 25 / 40 / 50 / 80 mm dia:

The ISI Marked Gun metal full way wheel valve of size 15 mm / 20 mm / 25 mm / 40 mm / 50 mm / 80 mm dia shall have to fitted as per instructions of engineer-in-charge.

The rate for this work will paid per Number basis.

Item No.194 to 198:
CI Ball Valve with handle. Threaded or flanged CI Body & Chromium plated steel ball of approved Quality & Brand – 15 mm Ø / 25 mm Ø / 50 mm Ø / 65 mm Ø / 80 mm Ø

CI Ball Valve with handle, threaded or flanged CI Body & Chromium plated steel ball of ISI marked and approved quality of size 15 mm / 20 mm / 25 mm / 50 mm / 65 mm / 80 mm dia shall have to fitted as per instructions of engineer-in-charge.

The rate for this work will paid per Number basis.

Item No.199, 200 and 201:
Providing and fixing Overhead Water Tanks "Sintex" or equivalent of 1000 / 2000 / 5000 Liters capacity with all necessary plumbing fittings etc. comp. as directed by Engineer-in-charge.

MATERIALS AND WORKMANSHIP :

Overhead water tanks "Sintex" or equivalent of cylindrical vertical tanks with closed top with of self-supported type having approved grade of polyethylene, molded to seamless and suitable for potable water tank of capacity as mentioned in Schedule-B as per company's dimensions provided with G.I. fittings of size 25mm Dia for inlet, outlet, overflow and scour connections and float valves etc. complete placed with all fittings fixing as directed by engineer in charge.

The rate for this work will be paid per number basis.

Item No.202 to 208:

Providing laying and jointing in true line and level U.P.V.C. Pipe (SCHEDULE-80) for cold water including fittings of make PRINCE / SUPREME / ASTRAL / FINOLEX as approved by Engineer In Charge. Pipe shall be fixed on the wall with the help of clamp at every two meter C/C or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent. including cost of all materials – 15 / 20 / 25 / 32 / 40 / 50 / 65 mm dia

1. AIM AND FIELD OF APPLICATION

- This specification has the aim to regulate the modalities of delivery and testing of UPVC pipes. for conduction of water and food- fluids under pressure, conforming to Dlgs 06/04/2004 n. 174 " regulation . concerning materials and objects which can be used within fixed plants of purification, treatment, conduction, and distribution of water used for human consumption".

2. STANDARDS OF REFERENCE

- UNI EN 1452 pipes systems of plastic material for conduction – unplastified Polyvinyl- chloride – UPVC.

3. REQUIREMENT PRESCRIBED

- RAW MATERIAL The blend has mainly to be made of PVC (polyvinyl-chloride) with the sole addition of not toxic fluidification material and stabilizers, inert charges and other additives in quantities necessary to extrusion and to give a guarantee of stability of the characteristics of the polymer both during the working process and the life of the product.
- The blend used for the production of pipes, either in granules or powder, must not be used for any other utilization or working process than the required for the production of pipes.

The use of the following materials is not admitted:

- plastifiers and/or mineral charges which may alter the mechanical and hygienical characteristics of the pipe.
- PVC from regeneration of already used polymers, even if selected.

- The use of material having been extruded once, obtained from grinding of pipes and fittings, which had already been extruded, even if they have the characteristics which conform to this specification.
- The characteristics from PVC powder have to be conform to the requirements of UNI EN 1452-1 and satisfy the data indicated in the following table:

Characteristics	Requirements
K Value	65 ÷ 70
apparent specific weight	0,5 ÷0,6
Particle size measurement	> 250 mm 5% max. < 63 mm
Residual VCM (Vinylchloride -	<1 ppm (1mg/kg max.)
Volatile substances	≤ 0,3%

CARACTERISTICS OF U - PVC BLEND

- The characteristics of the blend in shape of a pipe, must correspond to the requirements of UNI EN 1452-1 and satisfy the following table

Characteristics	Requirements
M.R.S. (according to ISO/TR 9080) specifc weight unitary yeld point yield coefficient of elasticity coefficient of linear thermal expansion thermal conductivity	≥ 25 MPa 1,35÷1,46 g/cm3 ≥ 48 MPa < 10% > 3.000 MPa 0,06÷0,08 mm/m°C 0,13 kcal/mh°C

PIPES

- The pipes have to be produced with raw material (PVC blend) corresponding to the requirements as indicated in the previous table and as follows:

Colour	**Grey** considering that pipes may be exposed to sun- rays, a minimum fading of the colour on one part of the pipe must not compromise the quality of the pipe to be used and therefore may not be a reason of rejection of the same, on delivery. RAL 7011	**RAL 7011**
Aspect	the inside and outside surfaces of the pipes must be smooth, clean and without cavities, impurities and porosities or any other irregularity on the surfaces which might hinder their conformity to the norms of reference and these specifications. UNI EN 1452	**UNI EN 1452**

MECHANICAL AND PYSICAL CHARACTERISTICS

- The characteristics of the pipes must conform to the requirements of UNI EN 1452-2 and satisfy the requirements of the following table:

Characteristics	**Requirement**			**Methods**
shock resistance	T = 0°C - TIR < 10% conform to schedule 6 of UNI EN 1452-2			UNI EN 1452-2 744
Resistance to interior pressure	No yeld during the test 20 °C / 1h / sigma= 42 Mpa 921 20 °C / 100h / sigma= 35 MPa 60 °C / 1000h / sigma= 12.5 MPa			UNI EN 921
Temperature of softering Vicat(VST)	≥ 80 °C	Conform to UNI EN 727		UNI EN 727
Longitudinal shrinkage	≤ 5% the pipe must non show delimitation, blister or breakage	Testing Temperature Time of immersion For : e ≤ 8 mm e > 8 mm	150 °C 15 min 30 min	UNI EN 743 Method A: Bath liquid
		Or		
		Testing Temperature Time of immersion e ≤ 8 mm e > 8 mm	150 °C 30 min 60 min	UNI EN 743 Method B: In air
Resistance to dichloromethane At a specified temperature	No attack in any part of the surface of the test piece	Testing Temperature Time of immersion	150 °C 30 min	UNI EN 580

CONNECTIONS SOCKET / GASKETS

- the connections are made by means of sockets with elastomeric gasket. Gaskets have not to be toxic at all according to the present norms for this subject (sanitary discipline) and conforming to norm UNI EN 681/1.
- The system of connection has to correspond to the requirements of UNI EN 1452-5 for every single class of pressure (PN) and has to be tested according to:
  a) EN ISO 13844 elastomeric gaskets for socket connections to be used with UPVC pipes – testing method for tightness of negative pressures;
  b) EN ISO 13845 elastomeric gaskets for socket connections to be used with UPVC pipes – testing method for tightness of internal pressure with angular deflection of the connection.

MINIMUM MARKING

the minimum marking on each meter of pipe must be indelible and show at least the following data:

- name of the producer and/or trade mark of the product
- number of the norm of the system (UNI EN 1452)
- quality mark of the product - raw material (U-PVC)

- outside diameter of the pipes x wall thickness
- nominal pressure (PN) and SDR and/or series (s …)
- day, month, year and shift of production
- number of the extrusion line
- date of production

GEOMETRICAL CHARACTERISTICS - DIMENSION OF PIPES

➢ Diameters, thickness and tolerances :

pipes have to be formed (SDR) as for seen by the National Introduction of UNI EN 1452 and have dimensions conforming to schedules 1,2,3 of Chapter 6 of UNI EN 1452-2 "geometrical characteristics".

Particularly in this discipline there is shown the prospectus including minimum wall thicknesses indicated in mm

Nominal outside diameter	**Nominal Wall thicknesses (minimum) (mm)**			
(MM)	PN 6 bar	PN 10 bar	PN 16 bar	PN 20 bar
20			1.5	1.9
25			1.9	2.3
32		1.6	2.4	2.9
40	1.5	1.9	3.0	3.7
50	1.6	2.4	3.7	4.6
63	2.0	3.0	4.7	5.8
75	2.3	3.6	5.6	6.8
90	2.8	4.3	6.7	8.2
110	2.7	4.2	6.6	8.1
125	3.1	4.8	7.4	9.2
140	3.5	5.4	8.3	10.3
160	4.0	6.2	9.5	11.8
180	4.4	6.9	10.7	13.3
200	4.9	7.7	11.9	14.7
225	5.5	8.6	13.4	16.6
Nominal outside diameter	**Nominal wall thickness (minimum) (mm)**			
(MM)	PN 6 bar	PN 10 bar	PN 16 bar	PN 20 bar
250	6.2	9.6	14.8	18.4
280	6.9	10.7	16.6	20.6
315	7.7	12.1	18.7	23.2
355	8.7	13.6	21.1	26.1
400	9.8	15.3	23.7	29.4
450	1.0	17.2	26.7	33.1
500	12.3	19.1	29.7	36.8
630	15.4	24.1		
710	17.4	27.2		
800	19.6	30.6		
900	22.0			
1000	24.5			

Lengths

➢ pipes have to be delivered for all outside - diameters asked for in lengths of 6 meters

(socket included).

Ends of pipes

- the pipe has to have plain ends, sharply cut and must be perpendicular to the axis of the same pipe, having an outside chamfer of about 15°.

CONTROLS AND RESPONSABILITY

- The contractor reserves the right to himself and to the person he is going to uncharged to assist the tests and controls carried out to check if the requirements prescribed by the norms of production and by these specifications are fulfilled.
- The supplier, therefore, will do his best to favor the free access of the persons uncharged by the contractor to the production plants of the pipes in a moment whatever during the different phases of production and to the laboratories during the phases of control and testing, communicating within a reasonable period of time the beginning date of production of the pipes ordered. He will further give to the persons in charge, full liberty of actions to make the controls necessary, in line with the requirements of production.
- The contractor reserves himself the right to check by means of taking samples of pipes and/or of the the raw material, the correspondence of the same to the present specifications and to the supplier's declarations.
- It is understood that the presence of the persons uncharged, during the tests, will not be a substitute of the controls to be carried out by the seller, who is the only one responsible for the quality of the pipes he produces.
- The seller will bear any costs deriving from the delivery of pipes not conforming to the requirements of these specifications.

DOCUMENTS AND CERTIFICAZIONS OF QUALITY

- the supplier has to enclose to his offer:
- the certification of conformity of the Internal Quality System conforming to UNI EN ISO 9000, issued by an independ Institute or Company in conformity with UNI CEI EN 45012;
- a signed declaration regarding the use of vergin raw material (blend), which does not contain already worked material or substances which can damage the human body;
- a certificate of conformity of the product to norm UNI EN 1452 for pipes, issued by an independent Istitute, Body or Company, in conformtiy with UNI CEI EN 45011.

AFTER SALE ASSISTANCE

- If agreed upon , when the order had been made, the supplier has to guarantee as follows:
  - assistance by means of qualified technicians at the begin of work within the building yard in order to check the correct way of installation (recommendations according to UNI EN 1452-6 and ENV 1046).
  - Assistance of competent personnel regarding the procedures of testing the laying within the building yeard (in case of water conducts, for seen by the law according the the Ministerial Decree DM 12.12.85) of buried pipe-lines for fluids under pressure (execution according to method UNI EN 805, hydraulic test of conducts with a viscoelastic behavior).

HANDLING AND TRASPORT OF MATERIALS

- For the handling and transport of the pipes there have to be adopted all those procedures which are idoneous to make sure that the same reach at destination completely integral. A possible deterioration of the pipes, ascertained on delivery of the same, will turn out into a claim of defect material. The pieces claimed will remain at the disposal of the supplier. Possible repairing or controls will be at the supplier's charge. As for loading, transport, unloading and storing of the pipes and special pieces, reference will be made to the prescription of the Ministerial Decree (D. M.) 12.12.1985 (and successive modifications and integration) .

TRANSPORT OF PIPES

- When transporting pipes, the loading surface must not be rough. It is necessary to support pipes for their whole length, thus avoiding the possibility that pipes get damaged due to vibration. In order to fix the load, straps of hemp, nylon or similar material can be used, taking care that the pipes will not get damaged.

LOADING; UNLOADING AND HANDLING

- if loading and unloading of a means of transport or, anyway the handling of the material is done by means of a crane or the arm of an excavator, pipes have to be lifted in the center by an equalizing rocker arm of at least 3 meters. If these works are done by hand, it has to be avoided to slide pipes on to the side boards of the mean of transport or, anyway, on hard and sharp objects. The person in charge of the building site has to check all working processes of unloading in order to be sure of their regularity. Each damaged product will be identified by writing '' not to be used'' and will be isolated in an extra area. The person in charge has to comunicate as soon as possible, the existence of a damaged product to the Contractor's Director of Work, who then will take the actions necessary, according his unobjectionable opinion. If a crane is used, there has to be an efficient system of communication between the worker inside the crane and the worker beside the mean of transport.

STORING OF PIPES

- the best solution for the storage of pipes would be to use wooden crates or crates of other materials, to be able to resist to the weight of the pallet put on top. The storage has to be carried out with great care and the pallets have to be aligned. The supporting surface of the pallets stored hs to be levelled, not to be rough and must not have stones with sharp edges. Every possible idoneous solution has to be adopted in order to avoid any interference with the local traffic, both Vehicles and pedestrians, and with any other already existing structure. The pipes have to stored in a way to avoid possible accidents due to an unforseen movement of the same.

CONSERVATION OF TH MATERIALS

- It is absolutely necessary to adopt measures , that in case of long term storage, pipes of UPVC and plastic fittings can be put inside, away from sun-rays, in order to avoid the risk of degradation of the polymers and the decay of their chemical, physical, and mechanical properties. Fittings may be packed in different ways according to their shape, dimensions and type

of transport. If they are delivered without packaging, it has to be taken care not to pile them up without method, thus avoiding a collision between the single pieces or between the fittings and other heavier materials. In any case they cannot be put near heating devices or exposed to direct sun-rays until they are used. Similar indications have to be followed for the conservation of lubricants.

MODALITY AND PROCEDURES OF LAYING IN SITE

- Tipologies of trenches : The type of trench required by the project based on the evaluation of loads, the type of soil and the organization of the building yard, has to be scrupulously carried out in the next phase of execution.. During the phase of execution it is therefore important to have a scrupulous correspondence between the project and its effective realization. In the table below there are some main typologies of trenches showing the relationship between the diameter of the pipes (D indicated in meters), the width of the trench at the level of the upper part of pipe (B in meters) and the height of filling on the upper part of the pipes (H in meters).

Type of Trench	**B(width of the**
Small Trench	≤ 3 D < H/2
Large Trench	3 < D < 10 < H/2
Embankment	≥ 10 D ≥ H/2

Small Trench

- this is the best way to lay a U-PVC pipes. The pipe does not have to bear all the load from above, as it transmits part of it to the surrounding soil depending on the deformation due to the deflection, the product is submitted to.

Large Trench

- the load the pipe has to bear will be more than the one it has to support in a small trench. For this reason this has to be considered during the planning. This hypothesis has to be born in mind in order to obtain a certain security when making the calculations of the dimensions.

Embankment (positive position)

- the upper part of the pipe is put on a natural level of the soil. If there is much load passing through, this typology has not to be adopted due to sinking of the soil in absence of excavations on the sides.

Terrapieno (negative position)

- The pipe is put at a lower level than the natural one of the soil. Due to friction, even if a very light one, between the filling material put on the embankment and the natural sides of the trench, the pipes can support slightly more load than those in the positive position, but in any case less than those laid in a small and large trench. Therefore, even this typology is not advisable.

Depth of the trench

- The depth of the pipes H (in meters) understood as distance between the soil and the upper part of the pipes must satisfy the most protective of the following requirements, where D is the outside diameter expressed in meters.

  $H \geq 1,0$

  $H \geq 1,5\ D$

Width of the trench

- This is determined by the laying depth and by the diameter of the pipe, as it has to allow the settlement of the bottom, the connection of the pipes and the movement of the workers. The minimum width of the soil B (in meters) is normally:
  $B = D + 0,5$ with $D \leq 0,4$ m
  $B = 2D$ with $D \geq 0,5$ m.

- On the other side, the inferior limit values have not to be exceeded very much as the efficiency of the trench is higher when the width is smaller.

Bottom of the trench

- The trenches have to be made without bumps or unevenness in order to establish a continuous support for the pipes. It is not advisable to use a bottom with a concrete bed or similar as this will make the structure rigid.
- When the trenches are open on heterogeneous soil, situated on hills or in the mountains, it is necessary to anchor in order to avoid possible sliding of the soil.
- If there might be an instability of the soil due to water within the trench, it is necessary to re-inforce the soil bottom by means of draining pipes under the canalization.
- Around these pipes has to be put a compact strata of gravel or other material suitable to this purpose.
- In other words, it is necessary to make sure that there won't be any possibility that the filling material could move due to ground water.

Laying Bed

- There has to be a stabil laying bed on an even level, for canalization of U-PVC pipes. It has to be free from pebbles, heap of stones and possible other materials. The laying bed must not be build before having a complete stabilization of the trench bottom. The material used in normal laying conditions is sand mixed with gravel of a maximum diameter of 20 mm. If the soil has slopes, it is advisable to avoid sand, giving preference to gravel or crushed stones without edges, cut to pieces of maximum 10/15 mm. The material has then to be accurately compacted and has to achieve a thickness of minimum (10 + 1/10 D) cm.

Norms of compacting and quality control

- As U-PVC pipes are flexible, the uniformity of the surrounding soil is basically for a correct construction of a carrying structure, because the soil, deformed by the pipes, reacts in a way to give a help in supporting the load. In order to assure stability and integrity of he pipes laid, within the time, it is pointed out that the contractor has to take a great care regarding the laying of the pipe bed, the support and the first covering of U-PVC and has to apply scrupulously the present norms.
- The degree of compacting of the material, which forms the supports, has a determining influence on the value of diametric deformations (x /D) of the pipes. This value, which must not exceed the limits permitted, can be deduced by the formula of Spangler,

$$X = \frac{0,125 \cdot Q}{E. (s/D)3 + 0,0915 \cdot E 1}$$

with:

Q = total external load on the pipe [kg/m];
E = modulus of elasticity of the pipe[kg/m2];
s = thickness of the pipe [m];
D = diameter of the pipe [m];
E1 = modulus of elasticity of the soil [kg/m2].

Particularly E1 depends on the factor of compacting α ' according to the relation:

$$E1 = \frac{9.104.}{(H+4), a}$$

where H [m] is the height of filling measured from the upper side of the pipe.

Furthermore α ' is connected to the Proctor index as indicated in the following table:

Proctor Test	a'
95%	1,0
90%	1,5
85%	1,52
80%	1,53
75%	1,54

- The Proctor index defines normally the degree of compacting of the soil. For U-PVC pipes a Proctor index of at least 90% has to be considered. The achievement of the value required for the Proctor index has to be verified by means of appropriate tests and respective certifications, the number of which is fixed during the planning.
- The above-mentioned tests, defined as tests of compaction and determination of the characteristics of density of materials, must be carried out with the standard method AASHO with 4 points of the curve density/content of water. In order to obtain the density required methods of compacting are used (by hand with flat presses or with light mechanical apparata).

Laying of the pipe

- before laying the pipes, they have to be checked one by one in order to discover possible defects; the end part and the socket of the pipes have ot be integral. The pipes and fittings must be put on the laying bed in a way to have a continuous contract with the bed.
- The niches, excavated before, for the accommodation of the sockets (even if the dimension of the socket is minimum, it is normal to for see a niche in correspondence of its support), if necessary, have to be accurately filled in order to avoid possible empty spaces under the sockets.

Procedure of filling

- The filling of a trench and generally of the excavation, is fundamental for the laying. As we ar dealing with UPVC pipes, the uniformity of the soil is absolutely necessary in order to have a perfect construction of the carrying structure, as the soil reacts in a way, giving a contribution to support the given load. The material already used for the construction of the bed is put around the pipe and solidated by hand in order to form successive strata of

20 cm. up to half height of the pipe. It has to be taken care that there won't remain any empty spaces under the pipes and that the strata L1 of the filling material between the pipe and the wall will be continuous and compact.

- The second strata of filling L 2, reaches the upper part of the pipe. Its compactness has to be carried out with maximum care. The third strata L3 reaches 15 cm over the upper part of the pipe. Compactness has to be only at the sides of the pipes, never vertically on the same.
- The solidation of filling around the pipe must be uniform and reach 90% of the optimal value determined by the modified Proctor test. The support with turfy, muddy, clayly, or frozen soil is not allowed as this kind of soil cannot be solidated as it contains too much water.
- Further filling is made (strata L4 and L5) by material obtained from excavation. This material is cleaned from elements having a bigger diameter than 10 cm and from vegetal and animal fragments. The filling has to be made for the following strata up to 20 cm. It has to be compacted and eventually watered for a thickness of 1 m (measured from the upper part of the pipe), so that the density of the soil, once solidated, reaches 90% of the optimal value determined by the modified Proctor test. The bigger material (stones of a diameter > 2 cm) must not exceed the limit of 30%. At last there has to be a free space for the last strata of vegetal soil.

Special laying conditions

- If there is a ground water table, it has to be ascertained that this table does not cause any movement of the filling material surrounding the pipe. The surrounding soil has therefore to be solidated by means of draining, operating under the level of excavation, and thus avoiding every possible instability of the laying soil and brickworks.
- If during the work, for limited distances, there will appear some harder laying conditions than those for seen by the project (enlargements of walls, landslides etc) works of protection have to be carried out in order to come back to laying conditions as described. There must be extra-walls of heaps of stones or concrete in order to reduce the length of the section of excavation or there must be adopted other solutions authorized by the Direction of Work.
- In case, for technical reasons the height H of recovering is in some points lower than the minimum prescribed, it is necessary to absorb vertical loads by using appropriate protection devices (rigid diaphragms of protection and distribution of the loads, to be put above the last compact strata of material), following the imput of the Direction of Work.

- In case of crossing railways, it is possible to:
  - For see a steel covered protective pipe (casing)
  - Lay pipes in a tunnel of re-in forced concrete

ESECUTIONS OF CONNECTIONS

- Connections are made, respecting the indications given in the following, both for pipes and special pieces. An accurate cleaning of the parts to be joint is for seen making sure that they are integral. The gasket has to be inserted (if not already inserted during production) in it seat, situated in the internal side of the socket. Successive steps are:

- Lubrification of the external surface of the end of the pipe (plain ended side of the pipe) and the internal surfact of the socket, using an appropriate lubricant (grease of silicone-oil, Vaseline, soapy water, etc.) Avoid the use of mineral oils or greases which may damage the gasket.
- Insert the head of the pipe until the end of the socket and do not force further. The perfect execution of this working process depends only on a precise alignment of the pipes and on an accurate lubrification.

Item No.209 to 236:
Providing and fixing uPVC fittings viz. coupler bend, elba, tee, cross, etc. of Schedule-80 of any approved brand and quality – 15 / 20 / 25 / 32 / 40 / 50 / 65 mm dia

The contractor shall have to supply UPVC fittings vz. Bends, tees, coupler, etc.of required dia size as per the requirement and of approved quality by the engineer in charge. Subsequently the fixing of the same shall have to be carried out with all required material etc. and complete the whole work as per the requirement and to the satisfaction of engineer in charge.

The rate shall be for a unit of One number basis.

Item No.237:
De-watering work for excavation of trench during Job work / repairing etc. with diesel engine Pump set (3 to 5 HP) with suction delivery pipe including proper disposal of water by Contractor, fuel transportation, adm. of pump set etc. all overheads (including all material, spare-parts etc. for de-watering) and temporary O&M, transportation etc. complete (For the Cpacity above 5 HP pump 40 Rs./ Hp per hour for additional capacity would be paid separately)

If the work to be carried out is in an area with stagnant water, and in the opinion of the Engineer it is feasible to remove it, the same shall be removed, by bailing out or pumping, as directed by the Engineer and the area of the embankment foundation shall be kept dry. Care shall be taken to discharge the drained water so as not to cause damage to the works, crops or any other property. Due to any negligence on the part of the Contractor, if any such damage is caused, it shall be the sole responsibility of the Contractor to repair/restore it to original condition or compensate the damage at his own cost. If the embankment is to be constructed under water, Clause 305.4.6 shall apply.

The rate for this item will be paid on hourly basis.

Item No.238 to 240:
Laying of PVC / UPVC Pipe line - 15 to 75 mm dia with special as per site condition with required jointing solution including hydraulic testing as directed by engineer-in-charge
And
Laying of PVC / UPVC Pipe line - 90 to 125 mm dia with special as per site condition with required jointing solution including hydraulic testing as directed by engineer-in-charge

And

Laying of PVC / UPVC Pipe line - 140 to 180 mm dia with special as per site condition with required jointing solution including hydraulic testing as directed by engineer-in-charge

Fixing and Jointing

Pipes shall be either fixed on face of wall or embedded in masonry as specified.

Plain pipes shall be secured to the walls at all joints with PVC pipe clips by means of 50 x 50x 50 mm hard wood plugs, screwed with MS Screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand). The clips shall be kept about 25mm clear off finished face of wall, so as to facilitate cleaning of pipes.

Pipes shall be fixed perfectly vertical or to the lines as directed. The pipes shall be fitted to fittings with seal ring conforming to IS : 5382 allowing 10mm gap for thermal expansion.

Installation in Wall/Concrete:

The walls/concrete slots should allow for a stress free installation. Pipes and fittings to be inserted into the slots without a cement base, have to be applied first with a thin coat of PVC solvent cement followed by sprinkling of dry sand (medium size) and then allowed to dry. The process gives a sound base for cement fixation. This process is repeated while joining PVC material to CI/AC materials.

Fittings :

Fittings used shall be of the same make as that of the PVC pipes and shall have a minimum wall thickness of 3.2mm. The fittings shall be supplied with proved socketted ends with square groves and provided with Rubber Gasket conforming to IS : 5382. The plain ends of the fittings should be chamfered. The fittings shall be joined with the help of Rubber lubricant.

Note : These pipes shall be used only in shaft or unexposed location to avoid damage to these pipes due to willful act.

Method of Measurement And Payment

The measurement shall be recorded in running meter of pipe length laid along the centerline of axis of pipeline including tees, enlarges, reducers and bends, correct up to 0.01 m length. No payment shall be made for overlaps etc. The payment shall be made after completion of whole made item as mentioned in price bid on Running Meter basis and 15% shall be withheld for satisfactory hydraulic testing.

The rate includes cost of all materials, tools, plants and labour involved in satisfactory completion of work as specified above.

The rate shall be for a unit of one Rmt of actual work done.

Item No.249:
Selection-1 burmuda grass supply as required cricket ground and instructed and selected by engineer-in-charge

The grass has to be supplied as per requirement for cricket ground and shall have to be got approved from the engineer in charge thereby planting shall also have to be carried out to the satisfaction of engineer in charge.

The rate will be paid for a unit of square meter basis.

Item No.253 and 254:
HDPE Pipe PN-6 & PE-80 with ISI 4984 mark. Material Density is 946.4 Kg / M3. Wall thickness as per IS-4984. For 63 mm. (Weight-0.734 Kg)
And
HDPE Pipe PN-6 & PE-80 with ISI 4984 mark. Material Density is 946.4 Kg / M3. Wall thickness as per IS-4984. For 75 mm. (Weight-1.041 Kg)

HDPE PIPE
The item shall be covering manufacturing, supplying, and delivery of HDPE pipes having pressure rating PN-10 & material grade PE – 80 / PE – 100 bearing IS 4984/1995 and its latest version or amendments. The HDPE pipes shall be supply in standard length or as per owner's requirements.

Standard**:**
The HDPE pipes is to be procured, supplied under the scope of this item and which shall be meet the requirement of pressure rating of PN 6 / PN 10 and material grade PE-80 / PE-100 in accordance and confirming to IS:4984/1995 or its latest version or amendments with IS certification mark.

Temperature Variation:
All the pipes to be supplied and delivered shall be subject to weather condition like sun, dust, rain, wind as available in the state of Rajasthan. They shall also be subject to carry and convey drinking water under available temperature condition ranging from 4 Deg. Centigrade to 40 Deg. Centigrade.

Marking:
The method of marking to all the pipes to be used under the scope of contract shall ensure that all the information as mentioned in clause 10 of IS: 4984/1995 and/or its latest amendments. The marking will remain legible even after transportation, storage in open space etc. In general the legible and indelible marking upon the pipes shall indicate the following:

a) Manufacturer's name or trade mark.
b) Grade of material.
c) Class of pipes and pressure rating.
d) Nominal diameter.
e) Lot number / Batch number of manufacturer.
f) ISI certification Mark.

Any other important matter that the manufacturer of purchaser deems fit to be inscibed.

Push fit joints shall be used for joining of pipes. These fittings shall carry the necessary international approvals for leak proof jointing.

100 % virgin material shall allowed no rework is to be used for the production of pipes.

Inspection of joints:
The visual inspection of each joint should be done to ensure correct bead formation. Weld joint should be checked for axial alignment of welded pipes.

The rate for this item shall be running meter.

Item No.262:
Providing 25 mm thick premolded asphalt filler joints as per drawing and as directed by engineer in charge and filling the top 25 mm with hot poured elastometric type or cold polysulphide type joint sealant of approved quality etc. complete (As per MoRTH Sec. 602)

The work is to be carried out as per MoRTH Specification Clause No.602.

The payment for this item will be made on Square Meter basis.

Item No.264:
Supply and laying of Agregate (12-18 mm)

The aggregate shall be obtained from quarries approved by the **CITY ENGINEER** prior to collection. It shall be of approved quality with all leads and lift. It shall be obtained from hard tough, sound, durable, aggregate of close texture as is locally available and reasonably free from decay and weathering pieces of the aggregate shall be angular and roughly cubical in shape and round. Elongated or flaky material shall be rejected. The size of Field metal shall be 12 mm to 18 mm and shall be hand broken.

The payment shall be in cubic meter basis without deduction for voids. The rate also includes labour cost of level, Surveying and soft and hard copy of cross section and longitudinal section for measuring quantity supplied by contractor.

The rate includes cost of collection, conveyance to the site with all lead and lift and filling the boxes including all labours, tools, equipment and other incidental expenses. The rates to be quoted are inclusive of all such tools, duties, fees, royalties, taxes etc.

It shall not be spread without permission of the engineer-in-charge. It should be spreaded under careful supervision by trained collies. The required quantity of material stacks at the site. It shall be screened and rubbish,

dust, grass shall be removed and spread evenly on the prepared surface in grade and camber by using camber boards so as to ensure that the surface is true to cambers and grade. At least two camber board shall be in use at site. The surface shall be brought to required camber shall be checked at every 50 ft. (15 m) by means of templates of while the necessary of the camber in between shall be tested by strings and corrected as required to ensure that the material is spread to required thickness. At the time of rolling all surfaces irregularities, hollows, depression, humps etc shall be set right. The rate for this item shall be paid on cubic meter basis includes all the above operations with all lead and lifts.

The rate shall be for a unit of one cubic meter.

Item No.265:
RCC precast frame with supply, fitting, fixing with complete as per specification 5 ton size 700/550/60mm

Precast RCC Square Frame and cover of 5 Tonne capacity of approved quality shall be brought. Manhole cover and frame shall be fixed in line level as per the instructions of Engineer-in-charge. The jaili shall also have to be provided and necessary fitting and fixing work shall have to be carried as per requirement of engineer-in-charge.

The rate shall be for a unit of one number of frame+cover.

Item No.266:
Providing and fixing Biometric Face authentication Door Access Control System - 2000 Users including software development :- Door Access Biometric device Face+Card+PIN, 100 Access Control Users Perpetual License for COSEC CENTRA (Consider 2000 Users), 100 Platform Users on COSEC CENTRA PLATFORM (Consider 2000 Users), Matrix License Dongle, Door EM Lock 600 LBS, Door Lock L/U/Z Bracket, Cosec PAthDCFE (If Required), Exit Switch Push Button with Back Box, 2Core x 1Sqmm Cable, PVC Pipe and accessories - At actual requirement, Installation, Testing and Commissioning Service etc complete

SITC shall be done for the access control operation by automated biometric face control including provision of software, hardware and training to the staff appointed for the operation purpose. The system shall be as per the specified item description and shall be approved by the engineer in charge before installation. After approval, it will installed at the specified locations including all lead, lift and labour complete as per the instructions of engineer in charge.

Mode of Measurement: Measurement shall be done as per the number of access control installations made.

Add. Asst. Engineer	Dy. Executive Engineer	ADDL. CITY ENGINEER
R. M. C.	R. M. C.	Rajkot Muni. Corporation

Signature of Contractor with Seal

LISTOFAPPROVED MAKE(CivilWork)					
NO.	SPACE	PARTICULAR	COMP		
1	Ready mixed Concrete		Lafarge/Bhanu/ultra tech/RJ/Krishna		
2	Ordinary Portland Cement (Minimum 53 Grade)		UltraTech /Birla/ ACC /Ambuja/Hathi/Sanghi		
3	Flush doors		BIS approved brand (ISI Mark)		
4	FRP Doors		Fibrevent, Techno skills or Equivalent (or as approved by Engineer Incharge)		
5	PVC Doors with Frame		ISI and approved by Engineer Incharge		
6	Hydraulic floor Spring/ Door		Everite, Garnish, Hardwyn		
7	White Cement		JK White	Birla white	Nihon White
8	Reinforcement/Structural Steel (Each LOT shall accompany manufacturer's Test Certificate)		(TMT BARS Fe-500) Gallent/ET/ASR/Friend or BIS approved manufacturers		
9	Dining, Drawing, Bed Room, Kitchen, Toilet/Bath/Wash etc,	Vitrified/ Ceramic /Glaze Tiles/Wall Tiles/ Parking Floor Tiles	Somani/Nitco/Kajaria/RAK/Jhonson/Simpolo/Bell/Asian/ Euro/Vermora		
10	Toilet/Bath/Wash	PVC/UPVC pipes & Fittings	Astral/Supreme/Prince/finolex /Simco/Plumber With Clamp open type of outer side of Building		
11		Sanitary ware	Jaquar/cera/Hindware/Jhonson and any other standard brandh as approved by engineer-in-charge		
12	Teak Wood		Bulsar	C.P.Teak	
13	Inter locking Paver blocks		ISI Mark – Balaji,Regency,Supreme		
14	Plywood Products Commercial Block Board Commercial PlyTeak Ply		ISI Mark as approved by engineer-in-charge		
15	Glass/Float/Sheet		Saint Gobain	Modi/HNG	Asahi
16		Laminates	Neolux/Formica/Sunmica/Merino or as per IS		
17	Aluminum sections		Jindal	Indal	Banco

A) The contractor shall produce samples of the materials for approval of the RMC/PMC. The materials of the makes out of the above as approved by the RMC/PMC shall be used on the work. RMC/PMC member has not bide to give any reason for rejection of any brand from the above list and its decision will be consider as final.

B) In respect of materials for which approved makes are not specified above, these will be of makes to be decided by the RMC / PMC.
C) Contractor can use for any material of equivalent make of the above specified company after taking prior permission of RMC/PMC.

The agency has to use item/material mentioned in the list above. In no case other item/material shall be allowed except those mentioned in the list unless and until the unavailability of the above said item/material noticed that too, prior approved of RMC/PMC

APPROVED MAKES OF PLUMBING

Sr.	Item	Approved Make
1	SWR PVC PIPE & FITTINGS 6 KG CM²; FITTINGS: 6 KG CM² ECO. DRAIN PIPE & FITTINGS	FINOLEX / SUPREME/PRINCE / ASTRAL
2	GULLY TRAP	GIRCO /SONIA/ SUPREME/ ASTRAL/SUPERTECH/RAJHANSH
3	STONE WARE PIPES FOR INTERNAL UNDER GROUND DRAIN PIPE	GIRCO /SONIA/ SUPREME/ ASTRAL/SUPERTECH/RAJHANSH
4	RCC HUME PIPES EXTERNAL MAIN UNDER GROUND PIPE	INDIAN HUME PIPE / PRANALI
5	C.I. PIPE & FITTINGS	NICO OR EQ.
6	PPR PIPES & PPR FITTINGS	FINOLEX / SUPREME/PRINCE / ASTRAL
7	M.S/G.I. PIPES FOR WATER SUPPLY	TATA / JINDAL/ SWASTIK
8	ASTM/CPVC PIPE & FITTINGS FOR WATER SUPPLY	FINOLEX / SUPREME/PRINCE / ASTRAL
9	COMPOSITE PLUMBING PIPE & COMPOSITE FITTINGS	KITEC OR EQ.
10	G.I. PIPES FITTINGS WATER SUPPLY	DRP-M / R-BRAND / ZOLOTO
11	GI TO GI JOINTS	CHAMPION / EQUIVALENT
12	SOLVENT CEMENT	SUPREME / KISSAN / FINOLEX
13	DCV / NRV	ZOLOTO/SPIREX/AUDCO/ADVANCE
14	TAR	SHALIBIND / TIKIBOND-BS
15	SELF PRIMING SEWAGE PUMPS / SUMP OR STORM DRAIN PUMPS	KIRLOSKAR /HBD / GRUNDFOS / LOWARA / KSB / KBL
16	VALVES	KIRLOSKAR /AUDCO/ZOLOTO / R.B. / KBL / KSB
17	PUMPS	KIRLOSKAR / GRUNDFOSS/LUBI / KSB
18	STARTER	SIEMENS / L&T/C&S/INDOASIAN
19	PRESSURE GAUGE	BELLS / H GURU
20	CABLES	POLYCAB / FINOLEX / HAVELLS
21	CP FIXTURES	JAQUAR / KOHLAR
22	DEWATERING PUMPS	GROUNDFOSS/KIRLOSKAR/ KSB
23	SANITARY FIXTURES	CERA / HINDWARE
24	HOT WATER INSULATION	LLOYDS / EQUIVALENT
25	BELLOWS	BELLOW FLEX / PRICISION / DHRUV / B.D. ENGR.
26	WATER TREATMENT PLANT	ION EXCHANGE /POWER H20 / THERMAX
27	SOLAR SYSTEM	SOALARHEART/RACOLD/TATA-BP/SUNRAY
28	ELECTRIC GEYSER	A-O SMITH/ RACOLD/SPHERHOT

LIST OF APPROVED MAKE FOR FIRE SAFETY WORK

Sr.	ITEM	APPROVED MAKE
1	PIPES	TATA / JINDAL / SURYA / ASIAN
2	VALVES BUTTERFLY / NRV	LP / KARTAR / SANT / ZOLOTO / SBJ(AAAG)
3	AIR RELEASE VALVE	JAINSON / SANT / ZOLOTO/ SBJ(AAAG)
4	SLUICE VALVE	SANT / ZOLOTO / LP / KARTAR/ SBJ(AAAG)
5	BALL VALVE	SANT / ZOLOTO / JAINSON/ SBJ(AAAG)
6	FIRE HYDRANTS	SAFEX / SBJ(AAAG) / PADMINI / NEWAGE / SUKAN
7	FIRE HOSE REEL	SAFEX / SBJ(AAAG) / PADMINI / NEWAGE / SUKAN
8	FIRE HOSE, COUPLING BRANCH PIPE, NOZZLES, FIRE BRIGADE INLET	SAFEX / SBJ(AAAG) / PADMINI / NEWAGE / SUKAN
9	RRL HOSE	TORRENT / SBJ(AAAG) / PADMINI / NEWAGE
10	HOSE BOX	SBJ(AAAG) / VIJAY / ASOPALAV
11	PUMPS	KIRLOSKAR / M & P / PRIMA/LUBI
12	DIESEL ENGINE	KOEL / GREAVES /KIRLOSKER
14	BATTERY	EXIDE / AMCO
15	PRESSURE SWITCHES	SWITZER / INFOSS / DENFOSS
16	PRESSURE GAUGE	H GURU / FIEBIG
17	FLOW SWITCHES	DANFOSS/SYSTEM SENSOR (HONEYWELL) / SWITZER / INDFOSS
18	COATING & WRAPPING	IWL / STP/ PIPEKOTE
19	FIRE PANEL	PRIMA / SEEMA ELECTRIC / CPRI APPROVED
20	MCB / MCCBS	SIEMENS / C&S / SCHNEIDER / L&T/ HAVELLS
21	SWITCHGEAR / SFUs	SIEMENS / C&S / SCHNEIDER / L&T/ HAVELLS
22	FRLS CABLES / WIRE	RR KABLE / FINOLEX / POLYCAB / ALLCAB/ HAVELLS
23	FRLS WIRES	KEI / FINOLEX / POLYCAB / HAVELLS /ALLCAB
24	FIRE EXTINGUISHERS	SAFETY FIRST/MINIMEX/FIRE FIGHT / FIRE QUIT
25	STRAINERS	SANT / ZOLOTO / NORMAX/ KARTAR
26	SPRINKLERS	TYCO / HD FIRE / SAFEX / AQUA
27	PAINTING	BERGER /ASIAN / SHALIMAR

LIST OF MATERIALS OF APPROVED BRAND / MANUFACTURER (ONLY FIRST QUALITY TO BE USED (ELECTRICAL WORKS)

SR.	ITEM	STANDARDMAKE
1	LT PANEL	CPRI/ERDAAPPROVED PANEL BUILDER. 70KASHORT CIRCUIT WITH STHAND STRENGTH.ACCESSORIESAS PERMENTION EDINMAKELIST.
2	DISTRIBUTIONBOARDS	LEGRAND/HAVELLS/SUPER / C&S / INDOASIAN / L&T
3	MEDIUMVOLTAGECABLE	FINOLEX/ ALLCAB/KEI/HAVELLS
4	CABLETRAY(ALLTYPE)	PROFAB/PRECISION/THINKTRECK /UNIVERSAL/INDIANA/KEW
5	LTSWITCHGEAR(ALLRANGE)	ABB/ L&T / C&S / LEGRAND / INDOASIAN
6	LTMCCB	LEGRAND/HAVELLS/SUPER / C&S / INDOASIAN / L&T
7	LTMCB,ELCB	LEGRAND/HAVELLS/SUPER / C&S / INDOASIAN / L&T
8	LTSFU	LEGRAND/HAVELLS/SUPER / C&S / INDOASIAN / L&T
9	LTCONTACTORS	LEGRAND/HAVELLS/SUPER / C&S / INDOASIAN / L&T
10	CHANGEOVERSWITCH	LEGRAND/HAVELLS/SUPER / C&S / INDOASIAN / L&T
11	STARTER (STAR-DELTA / DOL)	C&S / L&T / CROMPTON / GELCO
12	SUBMERCIBLE MOTOR/ MONOBLOCK PUMP SET	CROMPTON / PRIMA / KIRLOSKAR / LUBI / KSB
13	LOADMANAGER	ENERCON/SCHNEIDER/ELMEASURE / L& T
14	DWC PIPE	GEMINI / ABHAY POLYPLAST / SUMITRA
15	LUGS	DOWELL'S/3D/JAINSON/COMET/HMI /(ISI MARKED)
16	CABLEGLAND	JAINSON/3D/COMET/HMI(ISIMARKED)
17	PVCCONDUITSANDACCESSORIES	PRECISION/ BLP/ANCHOR / ASTRAL
18	CASINGCAPING	PRECISION/ BLP/ANCHOR / ASTRAL
19	MODULARSWITCHES,SOCKETS &OTHER ACCESSORIES	LEGRAND / HAVELLS / GREAT WHITE / ANCHOR / C&S / MK / GM / INDOASIAN
20	PVCTAPE	STEELGRIP / ANCHOR
21	PVCJUNCTIONBOX	SINTEX/CLIPSAL / EPP
22	WIRESFORINTERNALWIRING	FINOLEX/ ALLCAB/KEI/HAVELLS / WINFLEX
23	COAXIALTVCABLE	DELTON/NATIONAL/HAVELLS/ FINOLEX
24	LED LIGHTFIXTURES	PHILIPS / HAVELLS / C&S / CROMPTON / BAJAJ
25	CEILINGFAN/EXHAUSTFAN	CROMPTON/ USHA / HAVELLS/ ORIENTASPERMODEL SPECIFIEDINBOQ
26	LIGHTININGPROTECTION & EARTHING	VASUDHA / ASHLOK / GREEN WIRE
27	DG SET	KIRLOSKAR / GREAVESPOWER / CUMMINS

SR.	ITEM	STANDARDMAKE
28	DG SET AMF PANEL	AS PER THE DG SET SUPPLIER.(SWITCH GEAR AS PER MAKE LIST.)
29	DG SYNC PANEL	L&T / ABB / AJAY ENTERPRICES
30	LIFT	OTIS / EXPRESS / TRIO / ORBIS / OMEGA
31	SOLARSYSTEM	TATAPOWER / ZYTECH / SUNRAY / WAARI
32	OCTAGONAL POLE	BAJAJ / TRANSRAIL / MARUTI / UTKARSH
33	WATERCOOLER	VOLTAS/USHA/BLUESTAR
34	AVIATION LIGHT	C&S / BAJAJ / AVAIDS
35	BATTERY CHARGER	MAXPOWER / MICRO POWER
36	SYNCH RELAY	WOODWARD / DEIF
37	CT	RECO / ASMOR
38	LOAD MANAGER	L&T / SCHNIDER
39	CONTROL WIRING	LAPP / RR KABLE

Special Note:

1. Client have right to check the challans of supplier.
2. The MC Band MCBDBs must be of same make.
3. Approve all the make of material from Client / Consultant / PMC before execution.
4. The Client/ Consultant / PMC reserve the right to select the manufacture or approved make from the above list. Any make not mentioned in the above lists must be approved from Client / Consultant before execution.
5. All the material should be ISI and as per standards mentioned in specifications and BOQ.
6. In case of shortage of material or un-time delivery or change in model take prior approval from client / consultant

Notes:

a) The contractor shall produce samples of the materials for approval of the EIC(ENGINEER IN CHARGE). The materials of the makes out of the above as approved by the EIC shall be used on the work. EIC member has not bide to give any reason for rejection of any brand from the above list and its decision will be consider as final.

b) In respect of materials for which approved makes are not specified above, these will be of makes to be decided by the RMC / PMC.

c) Contractor can use for any material of equivalent make of the above specified company after taking prior permission of RMC/PMC.

D. ADDITIONAL CONDITIONS

D. ADDITIONAL CONDITIONS:

1. The contractor shall have to provide his own level instrument for this work.

2. The safety of the traffic and surrounding properties is the prime important factor. As it is the renovation work in existing residential and commercial area the fencing, lighting, covering etc., requires to be provided as per clause 1.1.15. and as per the site requirement. Sign Board shall have to be provided at required locations, so that there will not be any fatal accident.

3. In case of any ambiguity found in inspections / drawings, specifications, etc, the decision of engineer-in-charge shall be final and binding to the contractor.

4. Rates quoted in Bill of Quantities to cover everything necessary for complete Execution of work :

   The rates quoted will be held to cover everything necessary of the due and complete execution of the work according to the drawings and the several conditions and the stipulations of the contract, including specification, or the evident intent and meaning of all or either of them or according to customary usage and for the periodical and final inspection and test and proof of the work in every respect and for measuring, numbering or weighing the same including setting out and laying or fixing in position and the provision of all materials,

   Power, tool rammers, beaters, labour, tackle platforms with impervious lapped joints for scaffolding ranging rods, straight edges, centering and boxes, wedges, moulds, templates, post straight rails, boning-staves, measuring rods, page boards, shores, barriers, fencing, lighting, pumping apparatus, temporary arrangements of passage of traffic, access to premises and continuance of drainage, water supply and lighting (if interrupted by the work) lard temporary sheds and buildings nahanis roofed in or otherwise haulage, painting, varnishing, polishing, establishments for efficient supervision and watching arrangements for the efficient protection of life and property and all requisite plant, implements and appliances every kind, except only such matter and things as it may be distinctly stated here in are to be supplied by the contractors. A rate for anyone description of work is to be held to include such items of other classes of and for these on separate specific charge will be admitted. The contractors shall keep every portion of the work clear of accumulation from time to time and shall leave every portion of the work clean, clear, perfect and at the

conclusion of whole, providing at their own cost all such material implement appliances and labour as the Engineer may require to prove if it is to be so.

5. The contractors are particularly directed to observe from the Articles of Agreement and the specifications, what is to be included in their rates for the several portions of the work and also under what conditions payments are to be made.

6. The contractor shall have to avail P F Code as per the prevailing Circular of Government for the employees on work. The process for preparation of bill will be taken up only after submission of the Challan for the amount of P.F. deposited every month for the employees on work, which will binding to the contractor. The required documents shall have to be submitted every month by the contractor to the competent authority.

7. The contractor shall have to get registered under ESI (Employer's State Insurance) Act and obtain ESI Registration number if the number of workers are 10 Nos. or more. Also, the agency shall have to give all the benefits to the workers as available under the ESI Act. The agency should follow all the rules and regulations of ESI Act as per prevailing norms.

8. This office Circular bearing No.RMC/C/329 dated 22-12-2012 and Order No.RMC/C/132 dated 10-06-2013 are uploaded separately as a part of tender document. The Contractors/Consultants quoting their rates shall have to read, implement, and submit the same duly signed along with the documents to be submitted during physical submission.

9. In reference to the above Circular and Order cited para above, the Contractors/Consultant who have quoted their rates for this work will be called in person for verification of original documents. The date and time for verification of original documents will be as prescribed in the tender document.

10. After issuance of work order for this tender, if the work falls under any kind of dispute then Rajkot Municipal Corporation reserves the right to terminate the contract for this work awarded to the contractor or execute part work. The decision of Rajkot Municipal Corporation in this regard will be final and binding to the contractor.

11. Till the Completion Certificate is issued by Rajkot Municipal Corporation, the agency will be the sole responsible for security of material and structure at site.

12. The quantities given in the Schedules are provisional. The Rajkot Municipal Corporation reserves the right to increase or decrease the quantity of work or totally omit any item work and the contractor shall not be entitled to claim any extras or damages on these grounds & he is bound to execute the work as per the instruction of the Engineer-in-charge. Rajkot Municipal Corporation will not entertain any dispute in this regard.

13. It is further clarified that Performance Guarantee (SD) for extra work will also be recovered @ 10% from the bill of extra work i.e. works beyond tender amount.

14. The bidder must understand clearly that the prices quoted are for the totally works or the part of the total works quoted for and include all costs due to materials, labour, equipments, supervision, other services, royalties, taxes, duties, etc., and to include all extra to cover the cost. No claim for additional payment beyond the prices quoted will be entertained and the bidder will not be entitled subsequently to make any claim on any ground.

15. Qualified engineer must be deployed on site and at Plant. The details of qualified engineers are to be given to RMC at the time of bidding of this tender.

16. If any irregularities found during the work then penalty will be imposed by Engineer-in-charge or any higher officer. If any disputes arises regarding penalty imposed by Engineer-in-charge then decision of Municipal Commissioner will be final and binding to agency.

17. The time limit will remain same as mentioned in the tender document and the work is to be completed accordingly.

18. Tender of such Contractor not having registration in appropriate Class and Category, will be treated as non-responsive. In case of any conflicting provisions between registration of appropriate category and Pre-qualification criteria, the later shall govern the process of bid evaluation.

19. The agency shall have to quote their rates only after visiting the site and looking to the site conditions.

20. DEFECTS: Date of completion for start of defect liability period for the entire work will be considered as the last date mentioned in the completion of work recorded in Measurement Book. The contractor shall be required to make good all the damages/ defects identified and conveyed to him, during the entire defect liability period. The

method and time limit of rectification will be decided by the Engineer in charge. If the contractor fails to carry out rectification as per the instructions, the same will be carried out at his cost and the cost will be recovered from the amount retained.

21. Joint venture shall not be allowed under this tender.

22. After the completion of work, at the interval of every three months, joint inspection must be done by the agency and RMC staff and then agency has to submit the report stating the condition of work to Rajkot Municipal Corporation. The final checking report stating the condition of work is also to be submitted by the agency before one month of the expiry of defect liability period to the competent authority.

23. The Royalty of each and every material, required to be paid is to be borne by the contractor.

24. Testing of each material as and when required by Rajkot Municipal Corporation, is to be carried out in Government approved laboratory by the contractor at his own cost. Schedule of testing of material will be as per R&B, State Government Manual and I S Code provision.

25. Necessary tests for material quality, soil tests etc. shall be carried out as per the instructions of engineer-in-charge by contractor at his own cost and reports to be submitted to the engineer-in-charge.

26. As this work is to be done in existing structure and also keeping in mind surrounding properties, all due precautions should be taken so that no damage occurs to any of the services like; water connection, drainage connection, water pipeline, drainage line or any other services. However, if any damage occurs to any of such service(s) then the contractor shall have to carry out necessary repairs immediately and satisfactorily, at his own cost.

27. Wherever the rolling with the road roller is not possible on metalling work and murrum work, the compaction with hand roller or by any other means at such places shall have to be carried out by the contractor satisfactorily as per instructions of engineer-in-charge.

28. The Contractor shall carry out modifications in the procedure of work, if found necessary, as directed by the Engineer during inspection. Works falling short of quality shall be rectified / redone by the Contractor at his own cost, and defective work shall also be removed from the site of works by the Contractor at his own cost.

29. Defective Materials: All materials which the Engineer / his representative has determined as not confirming to the requirements of the Contract shall be rejected whether in place or not; they shall be removed immediately from the site as directed. Materials, which have been subsequently corrected, shall not be used in the work unless approval is accorded in writing by the Engineer. Upon failure of the Contractor to comply with any order of the Engineer / his representative given under this clause, the Engineer-in-charge shall have authority to cause the removal of rejected material and to deduct the removal cost thereof from any payments due to the contractor.

30. The Defect Liability period for this work is 48 months. After completion of work, a report at the interval of every six months by way of joint inspection shall have to be submitted to the competent authority. The portion which is observed defective / damaged by normal cause during the joint inspection shall have to be repaired/rectified and necessary evidence along with photographs shall also have to be submitted to the competent authority.

31. The agency shall have to get interior done from the approved Architect / Engineer and also to get approved from engineer-in-charge. The agency shall have to get the approval within a period of 7 (Seevn) days.

32. The Plans got prepared by the agency shall have to be get the design done from the Structural Engineer, the cost of which also is to be borne by the agency.

33. The work order will be given only after getting the preliminary approval from Town Planning Department.

34. Providing and fixing of precast RCC slab and column shall have to be carried out in line and level.

35. For excavation of trench, use of JCB machine will not be permitted directly on the top surface of the road. After excavation up to minimum 1.00 mt. depth from road surface or existing ground level, same shall have to be carried out manually or by using Breaker and after locating underground services like; water supply pipeline, water connection lines, pipe gutters, telephone cables, electric cables etc., and thereafter upon taking the prior approval of the Engineer-In-Charge, the excavation can be carried out by using JCB machine.

36. Rajkot Municipal Corporation shall recommend to the competent authority to give Controlled Blasting License to the contractor for

carrying out excavation in hard rock. In case of blasting license not permissible from the competent authority in some places then excavation is to be done by using wedges and hammers, chiseling, breakers, pneumatic tools, etc. Also in case where blasting license is permitted but even then if there is no possibility of carrying out the blasting for whatsoever reason, the excavation is to be done by using Wedges and hammers, chiseling, breakers, pneumatic tools etc. No extra payment shall be made for excavation to be carried out in any of the above mentioned both the situations.

37. Excavation in soft rock and hard rock shall have to be carried out only by Chiseling, Breaker (pneumatic tools) etc., as far as possible. If excavation is not possible in terms of above and if excavation is required to be carried out with the help of blasting then the same shall have to be carried out only after taking prior approval and necessary license for blasting from the competent authority.

38. In case of excavation not possible manually or by chiseling in certain place(s) as well as if blasting is also not possible due to various reasons i.e. to avoid damage to nearby water pipeline, pipe gutter, telephone cables / Duct, Raw houses / week buildings / narrow street etc., then the excavation by blasting will not be permitted. Under these circumstances, excavation shall have to be carried out only by Breaker (pneumatic tools) as per the instructions of the Engineer-In-Charge. No extra payment will be made for such type of excavation done by using Breaker. The rate for excavation shall be paid as per the rate of related item mentioned in Schedule-B.

39. Regarding the width of excavation, as (a) it is difficult to carry out the vertical trench excavation, (b) possibility of sliding the soil, and (c) uneven excavation trench width in case of blasting. In this connection, for every 1.5 mt lift if there is less width up to 5 cm at the bottom then the top width of excavated trench, it shall be considered as per the specified trench width or actual trench width carried out at the ground level by the contractor whichever is less. If excavation is carried out more than the specified width then the payment will be made only for the specified width of excavation.

40. After entering into an agreement, the agency shall have to finalize the agency for supply of the material like Precast RCC slab and column and the name of manufacturer / supplier should immediately be informed to Rajkot Municipal Corporation so that Rajkot Municipal Corporation can also expedite the manufacturer / supplier for the material. If necessary, Rajkot Municipal Corporation will visit and inspect the factory. During the inspection, if Rajkot Municipal Corporation is not satisfied then the contractor shall have

to procure the material from other manufacturer(s).

41. During construction activity, proper care must be taken for labor safety and all the provisions of the labor laws must be followed by the contractor.

42. The G.A. Drawings and other Drawings as provided at present with the tender document are indicative, however, there is possibility of any change or modification in the said drawing and as such the contractor shall have to carry out the work accordingly at the approved rates without any extra cost.

43. The contracting Agency then has to prepare bar bending schedule as per Structural Drawings and submit it to RMC after then RMC shall permit to work to start. Structure design is in the scope of work of contractor and its cost is to be borne by the contractor. The structure designer should be RMC license holder. The proof check of the structure design should be done by one of the structure designers, as suggested by RMC. (If the structure designer is suggested by RMC, then the proof check is not needed.) Bar Bending Schedule, register shall be maintained on site with the details of cut length of bar. The certificate for same shall be denoted in Pour Card.

44. Contract Agency has to provide a Site Office Room, a separate Laboratory included with necessary lab instruments for slump test, sieve analysis, etc. whatever suggested by Site Engineer in charge on site premises. There shall be provision of minimum 24 cube mould of 15 x 15 x 15 cm size and 12 mould of 7.5 x 7.5 x 7.5 cm. There shall be a provision of necessary stationary & Furniture. The periodical calibration of instruments like weigh batch Plant, Electronic Balance etc. shall be carried out as per instruction of Engineer in Charge. Without satisfactory report for the same the work may not be continued.

45. The Mix Design of Cement Concrete shall be revised submitted with respect to changes in Materials like Cement, Sand, Aggregate

46. The Final Completion Drawings shall be submitted in hard copy and as Auto Cad format by Agency. If the same is not submitted, the permanent deposit 0.25 % of Final Bill amount will be deducted from Final bill.

47. After the drawings for the proposed work are finalized by RMC, the agency has to submit the same to qualified & experienced structure engineer.

48. The agency has to submit the approved & signed copies of structure

design 3 sets to Rajkot Municipal Corporation

49. Additional alternation changes during the work shall has to be incorporated in the structure drawing & shall be re submitted to Rajkot Municipal Corporation accordingly.

50. The contracting Agency then has to prepare bar bending schedule, submit it to Rajkot Municipal Corporation. & After checking the bar bending schedule, then Rajkot Municipal Corporation shall permit to work to start.

51. Approval to the samples of various materials given by the Engineer-in-charge shall not absolve the contractor from the responsibility of replacing defective material brought on site of materials used in the work found defective at a later date. The contractor shall have no claim to any payment of compensation whatsoever on account of any such materials being rejected by the Engineer-in-charge.

52. The agency has to facilitate the Town Planning department in all respective terms and has to provide all the required items as instructed by a surveyor of Town planning Dept. The items which are required for demarcation are colors, Tags, Nails, labors and agency will also be responsible for cleaning of the plot without any extra cost.

53. The agency has to create the passage/access to the plot where the work is supposed to start. If in case the access to plot is restricted by any farming land, then the agency has to take a proper arrangement for passage and whatever the cost occurred in the construction of the passage, the agency has to pay the cost of its own.

54. The compound wall has to be constructed with the proper guidance by the Engineer- in- charge, such as if the land has difference in the level (irregular topography), then the agency has to construct the compound wall in the step pattern form.

55. The top of the precast wall will be either in Semi-circular or triangular whichever instructed by the Engineer-in-charge. The Measurement of the Semi-circular or triangular item of the precast wall will be taken from the middle of the section of the item.

56. If in case the Semi-circular or triangular item of the precast wall will not be fixed, then the agency has to keep the top section of precast pole empty, without any curtailment in the height of the pole. But the measurement will be counted only for the constructed slabs.

57. In the precast wall, either the cement mortar in the ratio of 1:1 or Standard chemical mortar to be filled in Groove i.e. the area between two precast slabs and the area between the slabs and pole, whichever instructed by the Engineer- in- charge.

58. The restoration work for the excavation done is to be carried out immediately as per the instructions of engineer in charge. The excess material shall have to be disposed with no extra cost at the site specified by engineer-in-charge.

The word "Arbitration" or "Arbitration Clause" wherever mentioned in this tender document, is now to be treated as "Deleted". In this context, an Order bearing No.RMC/Legal/1858 dated 18-02-2017 of Legal Department of Rajkot Municipal Corporation is uploaded separately along with this tender, which Order, will hereafter be referred and taken into consideration for Arbitration related purpose for the tenders of Rajkot Municipal Corporation.

ADDL. CITY ENGINEER
Rajkot Municipal Corporation

Signature of Contractor with Seal

Rajkot Municipal Corporation

:: SPECIAL CONDITIONS ::

1. The Royalty of each and every material, required to be paid is to be borne by the contractor.

2. Testing of each material as and when required by Rajkot Municipal Corporation, is to be carried out by the contractor at his own cost. Schedule of testing of material will be as per R&B, State Government Manual and I S Code provision.

3. The whole work shall be executed by qualified Site Engineer. The required L- Section and Cross section is to be prepared by contractor at his own cost. The work should be done by levelling instrument. The Drawings shall be submitted accordingly in advance before starting the work. No extra payment will be made for the above work. Contractor has to submit Bill form with hard copy and soft copy of cross section and L-section of work completed. No bill will be accepted without above drawings.

4. Necessary tests for material quality, Paving Blocks, soil tests etc. shall be carried out as per the instructions of engineer-in-charge by contractor at his own cost and reports to be submitted to the engineer-in-charge.

5. The contractor shall have to get registered under ESI (Employer's State Insurance) Act and obtain ESI Registration number if the number of workers are 10 Nos. or more. Also, the agency shall have to give all the benefits to the workers as available under the ESI Act. The agency should follow all the rules and regulations of ESI Act as per prevailing norms.

6. The testing of metal and the design as per IRC shall have to be carried out by the contractor at his own cost.

7. Structure design is to be prepared by contractor and after approval of engineer-in-charge the work can be started.

8. Agency intending to carry out excavation will be able to carry out excavation / digging only after prior intimation through "Call before U Dig" mobile application.

ADDL. CITY ENGINEER
Rajkot Municipal Corporation

Signature of Contractor with Seal

PART-III
BILL OF QUANTITIES
(Attached in Separate Folder)

BID FORM(WITH PRICE)

CONTRACT No: RMC/ENGG/CZ/24-25/61

Bidders are required to fill up all blank spaces in this Bid Form

The Commissioner
Rajkot Municipal Corporation
Dr. Ambedkar Bhavan
Dhebar Road
Rajkot

Dear Sir,

SUB : DEVELOPMENT OF SPORTS COMPLEX AT PARDI ROAD IN WARD NO. 17

1. Having visited the site and examined the Bid Documents, Drawings, Conditions of Contract, Specifications, Schedules, Annexures, Preamble to Price Schedules, Price Schedules etc. including Addenda/Amendments to the above, for the execution of the above Contract, we the undersigned offer to carry out as given in Conditions of Contract and in conformity with the Drawings, Conditions of Contract, Specifications, Preamble to Price Schedules, Price Schedules, Annexures, Bidding Documents, including Addenda Nos._____(insert numbers) for _____%age (in figure) _____ (in words) below / above than the rates given in Price Schedule.

2. I / We agree that

   (a) if we fail to provide required facilities to the Employer's representative or any other person/agency by the employer to perform on his behalf for carrying out the inspection and testing of materials and workmanship

   OR

   (b) if we incorporate into the Works, materials before they are tested and approved by the Engineer’s representative

   OR

   (c) if we fail to deliver raw water of required quantity according to the conditions/stipulations of the Contract, the Engineer will be at liberty to take any action including termination of Contract and impose at his absolute discretion any penalties, and/or reject the work.

3. We undertake, if our Bid is accepted, to complete and deliver the Works in accordance with the Contract within **18 Months** of construction period from the date of Work Order issued to us by you.
4. We agree to abide by this Bid for a period of 120 days from the date of opening of technical bid and it shall remain binding upon us and may be accepted at any time before the expiry of that period.
5. In the event of our Bid being accepted, we agree to enter into a formal Contract Agreement with you incorporating the conditions of Contract thereto annexed but until such agreement is prepared this Bid together with your written acceptance thereof shall constitute a binding Contract between us.
6. We agree, if our Bid is accepted, to furnish Performance Bond/Security in the forms and of value specified in the Conditions of Contract of a sum equivalent to 5% of the Contract price for due performance of the Contract.
7. We have independently considered the amounts of liquidated damages shown in Appendix to Bid and agree that they represent a fair estimate of the damages likely to be suffered by you in the event of the Work not being completed by us in time.
8. We understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this_____day of_____ 20__.

_____
(Signature)

Company Seal

_____
(Name of the person)

_____ _____
(Name of firm) (In the capacity of)
Duly authorised to sign Bid for
and on behalf of
(Fill in block capitals)

_____
_____
_____

Witness
Signature _____
Name _____
Address _____
_____

PREAMBLE TO PRICE SCHEDULES

Note on Schedule:

The bid is percentage rate bid for **DEVELOPMENT OF SPORTS COMPLEX AT PARDI ROAD IN WARD NO. 17.**

1. The bid is percentage rate bid.

2. The rates and prices shall be submitted in the formats given in the online Price Schedules. Rates and prices received in any other formats will be rejected and the Bids will be disqualified.

3. It will be entirely at the discretion of the Employer to accept or reject the bidder's proposal, without giving any reasons whatsoever.

4. In Price Schedule, bidder shall quote his percentage Equal/Above/Below for items listed in the schedule. Prices quoted in Schedule only will be considered for price evaluation & shall form a part of the Contract Agreement.

5. The Only Price Schedule will be considered for financial evaluation of the bid with the successful bidder.

6. The bidder shall be deemed to have allowed in his price for provision, maintenance and final removal of all temporary works of whatsoever nature required for construction including temporary bunds, diverting water, pumping, dewatering etc. for the proper execution of works. The rates shall also be deemed to include any works and setting out that may be required to be carried out for laying out of all the works involved.

7. Where there is a discrepancy between the unit rates and the amount entered, the latter shall govern.

8. The Price Schedules are to be read in conjunction with the Conditions of Contract, the Specifications and other sections of these bid documents and these documents are to be taken as mutually explanatory of one another.

9. Prices quoted by the bidder shall be firm for the entire period of Contract without any escalation.

10. The bidder shall interpret the data furnished and carry out any additional survey work, or investigative work required at his own cost.

11. The prices quoted shall also include the cost of materials utilized for testing.

12. The bidder should acquaint himself with the site conditions including the access to Worksite. The successful bidder shall have to make suitable access to worksites at his own cost. These accesses will be used by the other contractors working for RMC.

13. The material shall be inspected Departmentally, the cost of which, if any, is to be borne by contractor.

14. **Bidder has to quote their rates without GST** and including other taxes. The invoice should be submitted by contractor showing the breakup of GST in the bill. GST will be paid extra at the prevailing rate at the time of execution.

    The contractor shall have to purchase the material required for this tender work, only from the supplier having registered GST Number. RMC will not be responsible to pay any amount towards GST if the material is purchased from the unregistered supplier not having GST Number.

15. In case of extra item work if quoted and approved tender price is above Percentage Rate then no above percentage rate will be given, only the rates as per S.O.R. will be paid for such extra item. But, if the quoted and approved tender price is below percentage rate then that below percentage rate will be considered for paying of any extra item.

16. The whole work is to be done under the supervision of RMC.

17. The rates and prices shall be submitted in the formats given in the enclosed Price Schedules. Rates and prices received in any other formats will be rejected and the Bids will be disqualified.

18. It will be entirely at the discretion of the Employer to accept or reject the bidder's proposal, without giving any reasons whatsoever.

19. In Price Schedule, bidder shall quote his percentage Equal/Above/Below for items listed in the schedule. Prices quoted in Schedule only will be considered for price evaluation & shall form a part of the Contract Agreement.

20. Only Price Schedule will be considered for financial evaluation of the bid with the successful bidder.

21. The Price Schedules are to be read in conjunction with the Conditions of Contract, the Specifications and other sections of these bid documents and these documents are to be taken as mutually explanatory of one another.

22. Prices quoted by the bidder shall be firm for the entire period of Contract without any escalation.

23. The bidder shall interpret the data furnished and carry out any additional survey work, or investigation work required at his own cost.

24. The prices quoted shall also include the cost of materials utilized for testing.

25. The bidder should acquaint himself with the site conditions including the access to Worksite. The successful bidder shall have to make suitable access to worksites at his own cost. These accesses will be used by the other contractors working for RMC.

26. From each Running Account Bill, labour cess will be deducted as per norms.

27. In Every running bill 0.25% amount shall be retained as extra security deposit if Drawings of work done are not submitted by agency.

28. The quoted rates should be inclusive of all taxes and duties.

29. The prices shall have to be quoted firm & fix including all the taxes & duties without any statutory variation. RMC will not consider any statutory variation as well as the price rise in the market and if any, those shall be on account of contractor.

30. The work contract tax will be borne by the agency.

31. For this project works PMC (Project Manasgement Consultant) will be deployed by RMC. PMC of charges @ 1.25% of contract value for the same is to be borne by the agency, which will be deducted from the contractor's bill.

32. While considering experience of ongoing sewer/storm water pipeline works, part work completed in all respect will be considered for evaluation of bid. In this regard contractor shall be required to submit part completion certificate along with bid document from competent authority.

33. Use of ready mix concrete may be permitted if it fulfils tender specifications.

34. No extra item or extra width will be paid due to excavating method or type of machinery.

35. For any type of license regarding labour, etc. has to be achieved by agency.

36. This office Circular bearing No. RMC/C/329 dated 22-12-2012 and Order No. RMC/C/132 dated 10-06-2013 are uploaded in tender document.

37. In reference to the above Circular and Order cited at above, the Contractor firm who have quoted their rates for this work will be called in person for verification of original documents. The date and time for verification of original documents will be intimated to the Contractors.

38. If the progress of work is found slow then Extra security Deposit may be recovered from any running bill as decided by Engineer in charge up to maximum 5% amount of concerned R.A. Bill amount.

39. In case of Extra Item, No "**On**" %age i.e. +ve % age Rate will be given but if there is Down %age i.e, -ve % age Rate that will be applied to that rate of that Extra Item.

40. R&B and GSWWB items to be executed as per the works manual of respective government agency.

41. For this project, Structure engineer for design proof checking Consultant will be appointed by Rajkot Municipal Corporation and remittance of charges @ 0.50% of contract value for the same is to be borne by the agency, which will be deducted from the contractor's bill.

42. PGVCL LT/HT connection process to be done by contractor. Amount amount paid to PGVCL will be reimbursed to agency. All other charges for connection to be borne by agency.

ADDL. CITY ENGINEER
Rajkot Municipal Corporation

Signature of Contractor with Seal

Check List for submission of Documents	
Tender Fee submitted as per Tender	Yes / No
Tender Earnest Money Deposit submitted as per Tender	Yes / No
Registration documents submitted as per tender requirement	Yes / No
Financial Details:	
Turnover details submitted as per requirement	Yes / No
Working Capital as per requirement of tender is submitted	Yes / No
Valid Bank Solvency submitted	Yes / No
Validity of Bank Solvency	Date:
Experience Details:	
Details of Technical Staff and details of machineries submitted	Yes / No
Address proof submitted	Yes / No
Identity proof submitted	Yes / No
Fresh Declaration on Non-Judicial Stamp Paper regarding not black listed or Terminated or Debarred, is submitted	Yes / No
Professional Tax Receipt of current year	Yes / No

Note:
Over and above, the agency shall also have to submit all other necessary documents as may be required for pre-qualification, failing which, the agency will be treated as Non-responsive and will be DISQUALIFIED and also the online price bid of such agency will not be opened.

Signature of Contractor with seal

PRICE SCHEDULE

Rajkot Municipal Corporation
Price Schedule – B

Name of work:
DEVELOPMENT OF SPORTS COMPLEX AT PARDI ROAD IN WARD NO. 17

Part	Type of Work	Amount
A	Civil Work	186985600.00
B	Electric work	24062500.00
C	CCTV and Audio system	1,582,000.00
D	Fire work	3,980,000.00
E	AIR CONDITIONER SYSTEM	16,153,200.00
	Total...	232,763,300.00
	Say...	**23,27,63,300.00**
	GST @ 18%...	41,897,394.00
	Total...	274,660,694.00
	Say...	**27,46,60,700.00**

Add. Asst. Engineer
R. M. C.

Dy. Executive Engineer
R. M. C.

ADDL. CITY ENGINEER
Rajkot Muni. Corporation

I/We agree to carry out the above said work at _(to be quoted online)__% Equal / above / below on the tendered rates shown in Schedule.

Signature of Contractor with Seal

[A] Civil Work

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
1	Dismantelling of Super Structure and dispossing it in RMC area	CuM	70.00	313.00	21910.00
2	Dismantelling Cement concrete or RCC Disposing it in RMC area	CuM	57.00	410.00	23370.00
3	Dismantelling of existing pre cast RCC comound wall including usfull material should be transport upto 3KM lead of RMC warehouse or store.	SqM	1100.00	155.00	170500.00
4	Clearing and grubbing land including uprooting rank vegetation grass bushes,shrubs,sapling and trees girth up to 300 mm removal of stumps of trees cut earlier and disposal of unserviceable materials(D) By mechanical means in area of thorny jungle	Hec.	1.50	34451.77	51677.66
5	Excavation of Foundation in Soft Murrum, Soil or Sand from 0.0 mtr. to 1.50 mtr depth including dewatering with lifting and laying in RMC limit as instructed	CuM	6780.00	133.00	901740.00
6	Excavation of Foundation in Hard Murrum from 0.0 mtr. to 1.50 mtr depth including dewatering with lifting and laying in RMC limit as instructed	CuM	1710.00	141.00	241110.00
7	Excavation of Foundation in Hard Murrum from 1.51 mtr. to 3.0 mtr depth including dewatering with lifting and laying in RMC limit as instructed	CuM	1860.00	159.00	295740.00
8	Excavation of Foundation in Soft Rock from 1.51 mtr. to 3.0 mtr depth including dewatering with lifting and laying in RMC limit as instructed	CuM	430.00	343.00	147490.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
9	Excavation of Foundation in Hard Rock with Breaker / Blasting / Gann from 1.51 mtr. to 3.0 mtr depth including dewatering with lifting and laying in RMC limit as instructed	CuM	430.00	725.00	311750.00
10	Foundation filling with CC work in proportion of 1:3:6 using 1.5 cm to 2.0 cm aggregate including Raming, Curing etc.	CuM	445.00	3965.00	1764425.00
11	Foundation filling with CC work in proportion of 1:2:4 using 1.5 cm to 2.0 cm aggregate including Raming, Curing etc.	CuM	44.50	4626.00	205857.00
12	Rolling work with Roller 8-10 Ton capacity over metalling murrum or soling or single layer arriving proper compaction (with watering)	SqM	5000.00	9.00	45000.00
13	Removal of Excavated Stuff and laying within RMC limit as directed by Engineer-in-Charge	CuM	5150.00	171.00	880650.00
14	Fixing of CC Precast Road Divider stone 12" x 10" x 7" including required diggging, Cementing joints with material and labour (with backing)	No.s	850.00	102.00	86700.00
15	Construction of cement concrete kerb with top and bottom width 120 and 220mm respectively, 400mm high in M20 grade. Kerb stone laid with kerb laying machine (L-Section)	No.s	970.00	650.00	630500.00
16	Supply and fixing of K-HB Gray SL VWP 600*300*100mm with mimimum average 2.5Mpa bending strenth cement mortar bonding on joints in proportion 1:3 with curing etc. complete. Like equivalent of VYARA tiles pvt. Ltd and etc.	No.s	920.00	441.00	405720.00
17	Filling of Plinth in layers of 0.23 m thick including murrum and sprinkling of water, compaction etc. complete	CuM	7795.00	347.00	2704865.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
18	Filling of Plinth with using excavated usefull material partly and remaining murrum to be brought from out side in layer of 0.23 m thick including murrum and sprinkling of water, compaction etc. complete	CuM	8630.00	185.00	1596550.00
19	Rubble Stone filling with 33% Murrum in specified thickness with watering, compaction etc. complete	CuM	500.00	626.00	313000.00
20	Black cotton Soil filling	CuM	670.00	334.00	223780.00
21	Brick Masonry work in Cement:Mortar 1:6	CuM	2400.00	5761.00	13826400.00
22	Brick Masonry Partition Wall in Cement:Mortar 1:4 (3.5 to 4.5 inch thick)	SqM	410.00	564.00	231240.00
23	Groov cutting in Brick Masonary with required repairing in Cement Mortar with Chicken Mess including finishing etc. complete	R.Mt.	3060.00	113.00	345780.00
24	Cement Concrete Work for Copping in proportion of 1:2:4 including Foam Work, finishing, curing etc. complete	CuM	47.50	5087.00	241632.50
25	Supply and fixing of stainless steel benches	No	20.00	15000.00	300000.00
26	Supply and fixing of weather proof imported metal wood finish unbreakable benches	No	20.00	11021.00	220420.00
27	Texture plaster with material	SqM	1600.00	742.00	1187200.00
28	Birla or JK putti work on rough plaster (three times) with labour and material	SqM	18250.00	82.00	1496500.00
29	Bondvoll natura brick finish coating	SqM	300.00	788.00	236400.00
30	Water Proofing work in Water Tank on both the sides	SqM	230.00	151.00	34730.00
31	Cement Plaster Work 12mm average thick using Cement:Mortar in proportion of 1:3 rough cast (without Niru Finishing)	SqM	18250.00	207.00	3777750.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
32	Providing and Fixing 145 GSM Glass Fibre Net of approved made to R.C.C and masonary joints,electric and plumbing jari etc.before applying internal and external plastering work.	SqM	1530.00	51.00	78030.00
33	20mm thick Sand Face Cement Plaster Work in which 1 paster in proportion of 1:3 and 2nd plaster inteh proportion of 1:2 using Cement:Mortar with spong finishing etc. complete (Note: Before carringout Plaster work on RCC, required tipping work should be carried out as instructed)	SqM	9175.00	263.00	2413025.00
34	Colored Cement Plaster 1mm thick in proportion of 1:3 with Cement finishing	SqM	500.00	209.00	104500.00
35	Water Proof Cement Plaster 20 mm thick using Water Proofing Compound and in the ratio of 1:3 with necessary finishing	SqM	385.00	234.00	90090.00
36	Decorative Groove Work in Cement Plaster	R.Mt.	2000.00	41.00	82000.00
37	Plastic Imulsion Paint (Two coats) (Asian Paint, ICI, Dulux, Nerolac, Berger etc. of approved type) (with Prime Coat)	SqM	18250.00	145.00	2646250.00
38	Apex Color work on Outer side of Wall (Two coats) (with Base Coat)	SqM	9175.00	115.00	1055125.00
39	Cement Concrete flooring (IPS) 50 mm thick in proportion of 1:2:4 with a floating coat of neat cement, finishing, curing etc. complete	SqM	2150.00	338.00	726700.00
40	Supply, Fixing & Polishing of Kota Stone work thickness 20-25 mm to be fixed in Lime:Mortar 1:2 and liquid Cement and as instructed	SqM	755.00	913.00	689315.00
41	Supply & Fixing of Polished of Kota Stone of required size & thickness as instructed to fixed in Platform / CupBoard etc	SqM	145.00	858.00	124410.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
42	Supply & Fixing of Granite Stone (Telephone Black Color) on wall after rough cast Cement Plaster in proportion of 1:3 and fixing grainage in Cement Paste	SqM	600.00	2882.00	1729200.00
43	Supply, Fixing & Polishing for Granite Flooring work 18mm thick & 200 mm Base of Lime:Mortar in proportion of 1:2 (telephone black color)	SqM	450.00	2970.00	1336500.00
44	Supply & Fixing of Broken Glazed (China Mosaic) tiles size 5-6mm thick of different size and shade (approved crazy patern) in Cement Mortar 1:2 and joint filling with White Cement / ColouredCement including Ramping, Watering, Curing etc. complete	SqM	3710.00	306.00	1135260.00
45	Water Proofing Treatment on Terrace and Wall sides with smooth finishing including material-labour etc. complete	SqM	3710.00	121.00	448910.00
46	Supply & Fixing of SQ.8" / QUADRASTEINE PL - R RED DL CP 80mm with minimum average 400 Kg/cm2 Compressive strenth after beding of black stone poweder in line and cc on edge in propertion of 1:2:4 with curing etc, complete. Like equivalent of VYARA tiles PVT. LTD. and etc.	SqM	4050.00	1485.00	6014250.00
47	Supply & Fixing of Glazed tiles (1st Quality) of required size in Cement Roga and joints to be filled with white cement after 12mm rough plaster in proportion of 1:3	SqM	245.00	493.00	120785.00
48	Supply & fixing of Vitrified for skirting work (1st quality) width upto 10 cm	RMT	1825.00	96.00	175200.00
49	supply and fixing of vitrified tiles flooring work of size more than 0.60 x 0.60 mtr (1st quality)	SqM	5050.00	1082.00	5464100.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
50	Providing and fixing72/77mm - Maple Wooden flooring System (Indoor), The system consists of Pine Runner of 33/38mm X 63/68mm in length of 1.20 mt., laid at a distance of 310 center to center WOODEN FLOORING "ROBBINS"/ BWF- FIBA & MFMA "Approved' Providing and Installing 72/77mm Maple Wooden flooring System. (Indoor) The system consists of Pine Runner of 33/38mmmx 63/68mm in length of 3 to 4" , laid at a distance of 310 center to center, each runner would have " AERO FLOAT" shock cushion pad of 19 mm, each pad will be fixed at the center to center of 330mm on the runner and at the joint of the runner Finally Fixing with Cleats / Screws or Staples BWF accredited Maple Wood looring Boards of 20mm, 67 to 85mm of random length, tongue and grooved A Gap of a for concealed fastening minimum of 1.5mm will be left affter every 5' of the floorboardas a weeding joint and at the edges, a minimum gap of 18mm will be kept openfor expansion & Construction due to change in the climate Finally sanding the wooden flooring and application of "Matt Finish" sports polish which will consist of one coat of Sealer and One THE PRODUCT AND Gym Coat.SYSTEM WILL BE ACCREDITED AND CERTIFIED BY BADMINTON WORLD FEDERATION (BWF).	SqM	750.00	6200.00	4650000.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
51	Vinyle Flooring - 4.5mm- PVC PU SPORTS FLOORING: Providing and laying PVC Flooring of 4.5 mm thickness with a durable wear layer, reinforced fiberglass layer and closed cell foam backing. It's UV coating durable surface provides easy maintenance, excellent resistance and excellent dimensional stability. It's shock absorption protects the joints and muscles of the players and keeps safe from sports injuries. It's excellent power return and identical ball bounce in all areas increases athletes to increase their On-court performance. Roll Size : 1.8 mtr X 15 Mtr.	SqM	250.00	1614.00	403500.00
52	OUTDOOR PU SYSTEM :5 + 2 SYSTEM PU SYSTEM "BWF APPROVED" US/EUROPEAN MAKE Providing and installation of "PU" flooring Total System thickness : 5mm + 2mm Impermeable Good Scratch and abrasion resistance Shock Absorption - 51% Vertical Deformation - 2.7mm Thick Coefficient - 5 Resistance to rolling load - 1000N Ball Rebound - 102% Impact Resistance - 12Nm The PU system consists of application of Concrete Primer on the existing concrete surface, followed by Laying of 5mm thick compressed SBR MAT , adhered with PU adhesive , there on installation of seamless PU coating system of 2mm thickness consisting of One Primer Coat, followed with two sealer coats and finally finished with the top coat.	SqM	1350.00	5500.00	7425000.00
53	Mat Flooring - Providing and laying 40 mm thick Rubber Interlocking 1 x 1 meter Block Mat .	SqM	600.00	1900.00	1140000.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
54	Boxing Ring: SURFACE PREPARATION, Providing & Installing of the Boxing Floor 1 mtr from Finish Floor Level with allied civil Works, Providing & installing galvanised frame and easily removable swivel stools in the corners, Providing & Installing of the 1.5cm PE Foam for the Boxing Flooring, Providing and installing 21mm - TEAK Wooden flooring Etc Complete	SqM	50.50	47500.00	2398750.00
55	Providing & Installing of the 1.5cm PE Foam for the Boxing Flooring for Wrestling ring	SqM	170.00	5750.00	977500.00
56	Supply and instolation of Gymnastics equipment : EQUIPMENTS FOR MEN - Pommel horse, Rings, Vaulting table, Parallel bars : EQUIPMENTS FOR WOMEN : Vaulting table, Balance Beam, Uneven Bars, Floor etc	Job	1.00	650000.00	650000.00
57	Gymnastics floor : Providing and laying Rubber interlocking 1 x 1 meter block matt with300mm thickness .	SqM	145.00	14500.00	2102500.00
58	RCC work with varing coat, curring, rough finishing etc. complete in the proportion of M-20	CuM	175.75	5200.00	913900.00
59	CC work M-20 for RCC slab using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	11.25	6000.00	67500.00
60	CC work M25 for RCC slab using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	146.00	6150.00	897900.00
61	CC work M35 for RCC slab using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	900.00	6700.00	6030000.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
62	CC work M20 for RCC Bottom slabusing aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	615.00	5000.00	3075000.00
63	CC work M-20 for Column using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	82.00	6400.00	524800.00
64	CC work M-35 for Column using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	710.00	6900.00	4899000.00
65	CC work M-20 for Beam using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	5.80	6100.00	35380.00
66	CC work M-35 for Beam using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	658.00	6600.00	4342800.00
67	CC work M-25 for Coping using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	39.00	5550.00	216450.00
68	CC work M-25 for Chhajja using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	47.50	5950.00	282625.00
69	CC work M-25 for Partition, Parsdment, railling etc.using aggregateof size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	28.50	7150.00	203775.00
70	CC work M-25 for Lintelusing aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	69.00	6000.00	414000.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
71	CC work M-25 for Stair Case using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	66.00	6300.00	415800.00
72	CC work M-20 for RCC footing using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	89.00	5500.00	489500.00
73	CC work M-25 for RCC footing using aggregate of size 10-20 mm, centring, curing, finishing etc. complete (without reinforcement)	CuM	950.00	5620.00	5339000.00
74	construction of concrete road using tremix system with 20CM thick M-25 concrete mixing complast P 211 water reduction concrete admixture @ 100 M.L. per bag of cement with providing adn fixing and removing of "C" Channel having size 75 mm X 75 mm as per required level slop and thickness of concrete road floor leveling of placed concrete with surface vibrator finishing the surface with power floater and trowel light brooming on the surface as directed with proving expansion joint size 20X125 mm and filling the expansion joint having size 20 mm X20mm by using colpar 200 as per manufacturer specification with making of construction joint by cutting of joint of size 3mm X20mm by using of concrete cutter machine including curing etc. complete	CuM	445.00	6097.00	2713165.00
75	RCC work with varing coat, curring, rough finishing etc. complete in the proportion of 1:1.5:3	CuM	15.00	5196.00	77940.00
76	RCC work with varing coat, curring, rough finishing etc. complete in the proportion of 1:2:4	CuM	15.00	4653.00	69795.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
77	Labour work for making of holes in CC of size greater than 30 x 30 cm and upto depth of 15cm	No.s	400.00	231.00	92400.00
78	Supplying, Cutting, Bending, Binding and Hooking and binding with wire for RCC work Tor steel TMT round bar including all cost	Kg	398000.00	65.00	25870000.00
79	Providing & fixing 32mm thick teakwood panelled door with 125×63 mm teakwood frame, partly glazed with all neccesarry fixing and oil paint.(with necessary all fittings)	SqM	152.00	5964.00	906528.00
80	Providing & fixing FRP door.	SqM	78.00	4200.00	327600.00
81	18 guage collepsible gate with primer & double coat oil paint.	SqM	13.00	3137.00	40781.00
82	Providing & fixing approved quality & designed rolling shutters with necessary top cover, fittings, single coat red lead, double coat silver or oil paint (with bearing)	SqM	10.00	2376.00	23760.00
83	Aluminium section window work (with 3 track mosquito net) (jindal)(with necessary all fittings)	SqM	18.00	7061.00	127098.00
84	Three track Domal series alluminium section window including mosquito chainlink etc with all fittings	SqM	465.00	9783.00	4549095.00
85	Supplying and fixing 12mm toughned glass (including cost of necessary fitting, alluminium frame C type size 32x32mm with anodized coating and labour) etc. complete.	SqM	40.00	3571.00	142840.00
86	Making cupboard with 18mm plywood which 6mm ply back side, 0.8mm white lamination inner side, fixing approved quality sunmica, hinges, stoper etc. 18mm thick ply with both side lamination for selves. plywood brands - kitply, century, dura, everest.etc with ISI marked	SqM	275.00	8610.00	2367750.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
87	Providing & fixing plaster of parish false ceiling as per design & direction with (7.5××x 2.5××x 2.5)mm size pipe & chennal of galvenized sheets.	SqM	335.00	867.00	290445.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
88	Providing and fixing eco-friendly light weight calcium silicate false ceiling tiles having Tegular edge & 15 mm Thick Densified edges on the Tile Periphery for Extr Strength The Light weight calcium silicate ceiling tiles shall have , light reflection 85% non-ombustible as per B.S. 476 part IV, 100% humidity resistance and also having thermal conductivity0.043° w/m KC.for the best thermal Insulation . The Light weight calcium Silicate tile shall be of approved texture Fine issured/Spintone/Cosmos having NRC value of 0.5 & Globe having NRC value of 0.75 NRC or equivalent of size 595 X 595 mm to be laid on true horizontal level suspended inter locking metal grid of hot dipped galvanized steel sections (galvanizing @120 grams per sqm including both side) consisting of main 'T' runner suitably spaced at joints to get required length and size of 24X38mm made from 0.30 mm thick (minimum) sheet, 1200mm centre to centre, and cross 'T' of size 24X28mm made out of 0.33mm (Minimum) sheet spaced 1200mm along spaced between main 'T' at 600mm centre to centre to form agrid of 1200X600mm and secondary cross 'T' of length 600mm and size 24x28mm made of 0.30 mm thick (Minimum) sheet to be interlocked at middle of the 1200X600mm panel to form grid of size 600X600mm resting on periphery alls/partitions on a perimeter wall angle pre-coated steel of size (24X24X3000mm made of 0.40mm thick (minimum) sheet with the help of rawl plugs at 450mm centre to centre with 25mm long dry wall screws @ 230mm interval and laying 15mm thick Densified edges light weight	SqM	5900.00	1632.63	9632517.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
89	Iron purline & ridge with oil paint for ceiling work.	SqM	1165.00	1136.00	1323440.00
90	Supply & fixing FRP corugated sheet for ceiling work (plain/corugated) without iron work.	SqM	1165.00	599.00	697835.00
91	Cement, lodhiya work with neat cement slurry finishing.	R.Mt.	510.00	26.00	13260.00
92	Double coat oil paint on wall surface with remove all dirt & dust with first hand linced oil.	SqM	205.00	128.00	26240.00
93	Double coat enemal paint with primer coat	SqM	1450.00	137.00	198650.00
94	Applying 10 to 15 cm wide traffic stripes with road marking paint with double coat on bitumen or cement road.	R.Mt.	250.00	29.00	7250.00
95	Applying 25 to 30 cm wide traffic stripes with road marking paint with double coat on bitumen or cement road.	R.Mt.	250.00	52.00	13000.00
96	Painting work as per instruction, deign after applying sinthetic enemal paint in background	SqM	100.00	235.00	23500.00
97	Applying of lacker oil paint with compression on wall, wood work, fabrication work, statue etc. with all material and labours	SqM	230.00	2771.00	637330.00
98	Making of wall pictures	SqM	130.00	594.00	77220.00
99	S.S. railling S.S. pipe 304 grade with all fixture & fastening etc. complete.	R.Mt.	165.00	2132.00	351780.00
100	Chain Link Net - 2.6 mm thick wire on framing angle 40/40/5 mm support, patti 25/6 mm thick at 60 cm interval & vertical main support angle, 50/50/5 mm with CC 1:2:4 foundation 30×40×45cm size at 2.5 to 3.0 cm interval with double coat oil paint.	SqM	975.00	1797.00	1752075.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
101	Manhole 1.20m/0.90m size 1.20m deep with exavation cement concrete 1:2:4 brick meassonary 1:6 0.30mm thick, foundation cement plaster 1:3, benching 50mm thick, IPS 1:2:4, top 15cm thick CC copping 1:2:4 with quaring finishing (without cover plate)	No	10.00	7551.00	75510.00
102	Manhole 0.90m/0.60m size 1.20m deep with exavation cement concrete 1:2:4 brick meassonary 1:6 0.30mm thick, foundation cement plaster 1:3, benching 50mm thick, IPS 1:2:4, top 15cm thick CC copping 1:2:4 with quaring finishing (without cover plate)	No	8.00	5917.00	47336.00
103	Manhole 0.60m/0.60m size 1.20m deep with exavation cement concrete 1:2:4 brick meassonary 1:6 0.30mm thick, foundation cement plaster 1:3, benching 50mm thick, IPS 1:2:4, top 15cm thick CC copping 1:2:4 with quaring finishing (without cover plate)	No	15.00	5306.00	79590.00
104	RCC precast cover with supply, fitting, fixing with complete as per specification 10ton size 700/700/90mm.	No	15.00	1430.00	21450.00
105	RCC precast cover with supply, fitting, fixing with complete as per specification 10ton size 1000/1000/90mm.	No	8.00	1870.00	14960.00
106	Supply & Fixing of 4mm Thick Plywood of standard Brands viz. Averest / Dura / Kitplay / Century etc. of ISI marked	SqM	30.00	558.00	16740.00
107	Supply & Fixing of 6mm Thick Plywood of standard Brands viz. Averest / Dura / Kitplay / Century etc.of ISI marked	SqM	45.00	727.00	32715.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
108	Supply & Fixing of 8mm Thick Plywood of standard Brands viz. Averest / Dura / Kitplay / Century etc.of ISI marked	SqM	60.00	885.00	53100.00
109	Supply & Fixing of 12mm Thick Plywood of standard Brands viz. Averest / Dura / Kitplay / Century etc.of ISI marked	SqM	90.00	1196.00	107640.00
110	Supply & Fixing of 15mm Thick Plywood of standard Brands viz. Averest / Dura / Kitplay / Century etc.of ISI marked	SqM	60.00	1133.00	67980.00
111	Supply & Fixing of 18mm Thick Plywood of standard Brands viz. Averest / Dura / Kitplay / Century etc.of ISI marked	SqM	150.00	1655.00	248250.00
112	Supply & Fixing of Laminates 1mm of Approved Quality of ISI marked	SqM	300.00	1250.00	375000.00
113	Heavy Duty Type Hydrolic Door Closer Supply With Fixing As Per Require.	No	70.00	1004.00	70280.00
114	Making tabel 0.75mt. Height, 18mm approved playwood, 1mm laminates, required lock arrangment, sliding drawer, handel etc. fiting fixing complete	SqM	26.00	15542.00	404092.00
115	wooden partition work with wooden frame (both side plywood with sanmica sheet) (with material supply and labour work)	SqM	130.00	4875.00	633750.00
116	Laminated Door frame work	R.Mt.	160.00	2744.00	439040.00
117	Making main door with both side laminated 35 mm flush door including required 8 mm toughned glass, door lock, handle, hinges etc. completed as per engineer in charge instruction and design given by consultant	SqM	20.00	11319.00	226380.00
118	Iron round gate as per drawing with colour incuding all	Kg	1200.00	126.00	151200.00
119	Grill work for doors - windows etc. as per design on site with fitting & fixing.	Kg	275.00	109.00	29975.00
120	Iron work as per drawing and instruction including all	Kg	35500.00	109.00	3869500.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
121	White porselin wash bassin 560/410mm indian make c.i. bracket with fitting cromium platted topes 25cm plastic waste pipe and 12mm pillar cock with comp.	No.	16.00	1434.00	22944.00
122	White porselin Kitchen Sink size 60/450/200 mm with supply and fitting.	No.	7.00	2803.00	19621.00
123	Indian type white porselin w/c. 580mm size 14lt. flushing tank, pipe, p trape with supply and fixing	No.	4.00	3245.00	12980.00
124	Flushing Valve Brass Cromium Platted push cock or handle type with flushing supply and fixing	No.	35.00	811.00	28385.00
125	Supply & Fixing of 75 mm PVC crowel	No.	35.00	60.00	2100.00
126	Supply & Fixing of 100 mm PVC crowel	No.	35.00	78.00	2730.00
127	White Glazed P trape with fixing	No.	35.00	232.00	8120.00
128	Uropean type w/c with sit, cover fixing with comp. standard quality.	No.	35.00	1784.00	62440.00
129	Uropean type w/c with sit, cover fixing charge	No.	35.00	750.00	26250.00
130	Plastic Waste Pipe supply fixing for Wash Basin	No.	16.00	109.00	1744.00
131	Chini gully trape approved quality supply with fitting and C.I. jali requaire size with fitting.	No.	35.00	567.00	19845.00
132	White Porselin Urinal with require plastic waste pipe fitting and fixing.	No.	32.00	1558.00	49856.00
133	Nahni trape 7.6cm of PVC fitting and fixing	No.	38.00	258.00	9804.00
134	Supply & Fixing of White Porselin Laddice Urinal	No.	10.00	1301.00	13010.00
135	Chromium Platted Brass Screw Down Cock 20 mm dia. fitting with fixing.	No.	45.00	570.00	25650.00
136	Tusted brass cock, stop cock etc. 20mm dia fitting with fixing.	No.	40.00	309.00	12360.00
137	Tusted brass cock, stop cock etc. 15mm dia fitting with fixing.	No.	52.00	238.00	12376.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
138	Brass toper cock 20mm dia. fitting with fixing.	No.	32.00	238.00	7616.00
139	Brass wheel valve 15mm dia. fitting with fixxing.	No.	14.00	490.00	6860.00
140	Brass wheel valve 20mm dia. fitting with fixxing.	No.	6.00	514.00	3084.00
141	Brass wheel valve 25mm dia. fitting with fixxing.	No.	6.00	599.00	3594.00
142	Brass wheel valve 32mm dia. fitting with fixxing.	No.	6.00	623.00	3738.00
143	Brass wheel valve 40mm dia. fitting with fixxing.	No.	6.00	871.00	5226.00
144	Brass wheel valve 50mm dia. fitting with fixxing.	No.	8.00	1839.00	14712.00
145	Aluminiam round pipe 12mm dia. fitting with fixing.	R.Mt.	10.00	151.00	1510.00
146	Aluminiam paper holder 15mm dia. fitting with	Pair	45.00	42.00	1890.00
147	Mirror approved quality 40 x 30cm size bracket fitting with fixing	No.	20.00	445.00	8900.00
148	Automatic flushing cock with flushing pipe fitting and fixing.	No.	35.00	1289.00	45115.00
149	Providing and fixing sign board of size 2.50 x 1.15mt.	No.	5.00	18719.00	93595.00
150	Supplying and fixing 3mm thick acrelic sheet street sign board of size 12" x 18" etc. complete.	No.	10.00	1007.00	10070.00
151	Supply and fixing Sign board of size 4' x 2'-6" - double side with one pole (welded two chanel of size 75 x 40 x 4 mm), frameing 35 x 35 x 5mm. C.R.C. sheet 16 gauge, with radium back ground and letters etc. complete.	No.	10.00	16290.00	162900.00
152	Supply of Steel characters for RMC buildings	Sq.Inch	1260.00	79.00	99540.00
153	Painting work of Road divider stone 0.75 mtr height with primer and two coat of oil paint	SqM	380.00	136.00	51680.00
154	Thermoplast painting work avg. 2.5 mm thick on Paver Roads or CC road size 10-50 cm width including material & labour	SqM	92.50	451.00	41717.50
155	for Providing and Fixing of tuffen glass of 10mm thick with etc comp.	SqM	29.00	2210.00	64090.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
156	Supply & Fixing of Granite with required carving and fixing it with cement at specified place etc. complete	SqM	5.00	10258.00	51290.00
157	Supply & Fixing of 3-4 mm thick color glass framing with 12.00 mm Rolly-Kolly or Lapi, pin, etc. fitting complete	SqM	120.00	550.00	66000.00
158	Concrete mix design including (DLC)/ cement concrete mix design for Compressive Strength	No.	1.00	10000.00	10000.00
159	Concrete mix design including (DLC)/ cement concrete mix design for Flexural Strength	No.	1.00	12500.00	12500.00
160	Wooden art ralling including TMT steel, G.I. wire 12gauge and 20 gauge,colour, chemical roff, white cement putti etc. complete.	R.Mt.	20.00	3412.00	68240.00
161	Drainage manhole should be done according to design given with ratio are at the bottom it should be C C 1:3:6 with brick mansonry 1:4 cum plaster 1:3 cm coping 1:1:2 and also benching around it with 1:2:4 should be done with finishing, curing, manhole frame cover and also with PVC step. (excluding excavation or suplly of frame cover) Type ---A--- : Round : Up to 1.50 m depth * inside dia. 1200 mm (for drainage lines from 150 mm to 500 mm dia.) (Menhole type - A up to 1.00 meter depth)	No.	8.00	8084.00	64672.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
162	Drainage manhole should be done according to design given with ratio are at the bottom it should be C C 1:3:6 with brick mansonry 1:4 cum plaster 1:3 cm coping 1:1:2 and also benching around it with 1:2:4 should be done with finishing, curing, manhole frame cover and also with PVC step. (excluding excavation or suplly of frame cover) Type --- B --- : Round : for 1.50 to 4.00 m. depth and inside dia. 1500 mm (for drainage lines from 150 mm to 600 mm dia.) (up to 1.50 meter depth)	No.	8.00	16003.00	128024.00
163	Inspection chamber size of 0.30 X 0.30 m and depth of 0.45 m given as per design with air tight C.I frame - cover supply and fixing including brick masonry 1:6 cum. at base CC 1:3:6 benching coping 1:1:2 with plaster inside and outside with 1:3 ratio	No.	20.00	954.00	19080.00
164	Rigid P.V.C. Pipe ISI Marked of 6 kg/sq.cm. Pressure, required with coupler, only supplies work.for pipe of 50 m.m. outer dia	R.Mt.	150.00	53.00	7950.00
165	Rigid P.V.C. Pipe ISI Marked of 6 kg/sq.cm. Pressure, required with coupler, only supplies work.for pipe of 63 m.m. outer dia	R.Mt.	200.00	82.00	16400.00
166	Rigid P.V.C. Pipe ISI Marked of 6 kg/sq.cm. Pressure, required with coupler, only supplies work.for pipe of 75 m.m. outer dia	R.Mt.	500.00	120.00	60000.00
167	Rigid P.V.C. Pipe ISI Marked of 6 kg/sq.cm. Pressure, required with coupler, only supplies work.for pipe of 90 m.m. outer dia	R.Mt.	250.00	171.00	42750.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
168	Rigid P.V.C. Pipe ISI Marked of 6 kg/sq.cm. Pressure, required with coupler, only supplies work.for pipe of 110 m.m. outer dia	R.Mt.	750.00	250.00	187500.00
169	Rigid P.V.C. Pipe ISI Marked of 6 kg/sq.cm. Pressure, required with coupler, only supplies work.for pipe of 140 m.m. outer dia	R.Mt.	300.00	401.00	120300.00
170	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. For 50 m.m. outer dia. Of Coupler of the PVC pipe	No.	25.00	8.00	200.00
171	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. For 63 m.m. outer dia. Of Coupler of the PVC pipe	No.	35.00	16.00	560.00
172	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. For 75 m.m. outer dia. Of Coupler of the PVC pipe	No.	35.00	23.00	805.00
173	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. For 90 m.m. outer dia. Of Coupler of the PVC pipe	No.	25.00	40.00	1000.00
174	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. For 110 m.m. outer dia. Of Coupler of the PVC pipe	No.	110.00	60.00	6600.00
175	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. For 140 m.m. outer dia. Of Coupler of the PVC pipe	No.	60.00	113.00	6780.00
176	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. 50 m.m. outer dia. Of albo of the PVC pipe	No.	25.00	17.00	425.00
177	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. 63 m.m. outer dia. Of albo of the PVC pipe	No.	35.00	21.00	735.00
178	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. 75 m.m. outer dia. Of albo of the PVC pipe	No.	35.00	25.00	875.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
179	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. 90 m.m. outer dia. Of albo of the PVC pipe	No.	25.00	39.00	975.00
180	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. 110 m.m. outer dia. Of albo of the PVC pipe	No.	110.00	55.00	6050.00
181	PVC Fittings 6 kg/sq.cm pressure pipes. Only supply work. 140 m.m. outer dia. Of albo of the PVC pipe	No.	60.00	135.00	8100.00
182	Rigid PVC Pipe 4 to 6 kg/sq.cm pressure. With the necessary fittings of it. The required solvent to be joined with cement. (Only labour work). for pipe of 50 m.m. outer dia	R.Mt.	150.00	5.00	750.00
183	Rigid PVC Pipe 4 to 6 kg/sq.cm pressure. With the necessary fittings of it. The required solvent to be joined with cement. (Only labour work). for pipe of 60 m.m. outer dia	R.Mt.	200.00	6.00	1200.00
184	Rigid PVC Pipe 4 to 6 kg/sq.cm pressure. With the necessary fittings of it. The required solvent to be joined with cement. (Only labour work). for pipe of 75 m.m. outer dia	R.Mt.	500.00	7.00	3500.00
185	Rigid PVC Pipe 4 to 6 kg/sq.cm pressure. With the necessary fittings of it. The required solvent to be joined with cement. (Only labour work). for pipe of 90 m.m. outer dia	R.Mt.	250.00	9.00	2250.00
186	Rigid PVC Pipe 4 to 6 kg/sq.cm pressure. With the necessary fittings of it. The required solvent to be joined with cement. (Only labour work). for pipe of 110 m.m. outer dia	R.Mt.	750.00	12.00	9000.00
187	Rigid PVC Pipe 4 to 6 kg/sq.cm pressure. With the necessary fittings of it. The required solvent to be joined with cement. (Only labour work). for pipe of 140 m.m. outer dia	R.Mt.	300.00	15.00	4500.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
188	Gunmetal full way valve with ISI- 778 mark Of any ISI mark Approved Brand. For 15 mm Ø.	No.	5.00	412.00	2060.00
189	Gunmetal full way valve with ISI- 778 mark Of any ISI mark Approved Brand. For 20 mm Ø.	No.	5.00	550.00	2750.00
190	Gunmetal full way valve with ISI- 778 mark Of any ISI mark Approved Brand. For 25 mm Ø.	No.	5.00	833.00	4165.00
191	Gunmetal full way valve with ISI- 778 mark Of any ISI mark Approved Brand. For 40 mm Ø.	No.	5.00	1650.00	8250.00
192	Gunmetal full way valve with ISI- 778 mark Of any ISI mark Approved Brand. For 50 mm Ø.	No.	5.00	2575.00	12875.00
193	Gunmetal full way valve with ISI- 778 mark Of any ISI mark Approved Brand. For 80 mm Ø.	No.	5.00	6517.00	32585.00
194	CI Ball Valve with handle. Threaded or flanged CI Body & Chromium plated steel ball of approved Quality & Brand. For 15 mm Ø .	No.	2.00	195.00	390.00
195	CI Ball Valve with handle. Threaded or flanged CI Body & Chromium plated steel ball of approved Quality & Brand. For 25 mm Ø .	No.	2.00	390.00	780.00
196	CI Ball Valve with handle. Threaded or flanged CI Body & Chromium plated steel ball of approved Quality & Brand. For 50 mm Ø .	No.	2.00	460.00	920.00
197	CI Ball Valve with handle. Threaded or flanged CI Body & Chromium plated steel ball of approved Quality & Brand. For 65 mm Ø .	No.	2.00	735.00	1470.00
198	CI Ball Valve with handle. Threaded or flanged CI Body & Chromium plated steel ball of approved Quality & Brand. For 80 mm Ø .	No.	2.00	1150.00	2300.00
199	Water Storage Tank of HDPE material cylindrical Vertical Black with closed Top 'SINTEX' Brand. (1000 Liter Capacity).	No.	3.00	13396.00	40188.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
200	Water Storage Tank of HDPE material cylindrical Vertical Black with closed Top 'SINTEX' Brand. (2000 Liter Capacity).	No.	2.00	26792.00	53584.00
201	Water Storage Tank of HDPE material cylindrical Vertical Black with closed Top 'SINTEX' Brand. (5000 Liter Capacity).	No.	4.00	66980.00	267920.00
202	uPVC pipes of Shedule-80 of any standard approved brand & quality. For 15 mm Ø. (2.77 mm min. wall thickness)	R.Mt.	200.00	47.00	9400.00
203	uPVC pipes of Shedule-80 of any standard approved brand & quality. For 20 mm Ø. (2.77 mm min. wall thickness)	R.Mt.	200.00	64.00	12800.00
204	uPVC pipes of Shedule-80 of any standard approved brand & quality. For 25 mm Ø. (2.77 mm min. wall thickness)	R.Mt.	250.00	93.00	23250.00
205	uPVC pipes of Shedule-80 of any standard approved brand & quality. For 32 mm Ø. (2.77 mm min. wall thickness)	R.Mt.	250.00	128.00	32000.00
206	uPVC pipes of Shedule-80 of any standard approved brand & quality. For 40 mm Ø. (2.77 mm min. wall thickness)	R.Mt.	300.00	157.00	47100.00
207	uPVC pipes of Shedule-80 of any standard approved brand & quality. For 50 mm Ø. (2.77 mm min. wall thickness)	R.Mt.	425.00	215.00	91375.00
208	uPVC pipes of Shedule-80 of any standard approved brand & quality. For 65 mm Ø. (2.77 mm min. wall thickness)	R.Mt.	425.00	333.00	141525.00
209	uPVC Coupler for pipes of Shedule-80 of any standard approved brand & quality. For 15 mm Ø .	No.	50.00	7.00	350.00
210	uPVC Coupler for pipes of Shedule-80 of any standard approved brand & quality. For 20 mm Ø .	No.	40.00	8.00	320.00
211	uPVC Coupler for pipes of Shedule-80 of any standard approved brand & quality. For 25 mm Ø .	No.	40.00	12.00	480.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
212	uPVC Coupler for pipes of Shedule-80 of any standard approved brand & quality. For 32 mm Ø .	No.	40.00	18.00	720.00
213	uPVC Coupler for pipes of Shedule-80 of any standard approved brand & quality. For 40 mm Ø .	No.	50.00	25.00	1250.00
214	uPVC Coupler for pipes of Shedule-80 of any standard approved brand & quality. For 50 mm Ø .	No.	50.00	34.00	1700.00
215	uPVC Coupler for pipes of Shedule-80 of any standard approved brand & quality. For 65 mm Ø .	No.	50.00	78.00	3900.00
216	uPVC Bend of 90° Shedule-80 of ASTRAL, WATER FLO, FINOLEX, ASHIRVAD, POLYSIL OR any standard approved brand & quality. For 15 mm Ø.	No.	50.00	8.00	400.00
217	uPVC Bend of 90° Shedule-80 of ASTRAL, WATER FLO, FINOLEX, ASHIRVAD, POLYSIL OR any standard approved brand & quality. For 20 mm Ø.	No.	40.00	11.00	440.00
218	uPVC Bend of 90° Shedule-80 of ASTRAL, WATER FLO, FINOLEX, ASHIRVAD, POLYSIL OR any standard approved brand & quality. For 25 mm Ø.	No.	40.00	18.00	720.00
219	uPVC Bend of 90° Shedule-80 of ASTRAL, WATER FLO, FINOLEX, ASHIRVAD, POLYSIL OR any standard approved brand & quality. For 32 mm Ø.	No.	40.00	27.00	1080.00
220	uPVC Bend of 90° Shedule-80 of ASTRAL, WATER FLO, FINOLEX, ASHIRVAD, POLYSIL OR any standard approved brand & quality. For 40 mm Ø.	No.	50.00	35.00	1750.00
221	uPVC Bend of 90° Shedule-80 of ASTRAL, WATER FLO, FINOLEX, ASHIRVAD, POLYSIL OR any standard approved brand & quality. For 50 mm Ø.	No.	50.00	52.00	2600.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
222	uPVC Bend of 90° Shedule-80 of ASTRAL, WATER FLO, FINOLEX, ASHIRVAD, POLYSIL OR any standard approved brand & quality. For 65 mm Ø.	No.	50.00	128.00	6400.00
223	uPVC Tee of Shedule-80 of any standard approved brand & quality. For 15 mm Ø .	No.	50.00	10.00	500.00
224	uPVC Tee of Shedule-80 of any standard approved brand & quality. For 20 mm Ø .	No.	40.00	13.00	520.00
225	uPVC Tee of Shedule-80 of any standard approved brand & quality. For 25 mm Ø .	No.	40.00	23.00	920.00
226	uPVC Tee of Shedule-80 of any standard approved brand & quality. For 32 mm Ø .	No.	40.00	38.00	1520.00
227	uPVC Tee of Shedule-80 of any standard approved brand & quality. For 40 mm Ø .	No.	50.00	48.00	2400.00
228	uPVC Tee of Shedule-80 of any standard approved brand & quality. For 50 mm Ø .	No.	50.00	75.00	3750.00
229	uPVC Tee of Shedule-80 of any standard approved brand & quality. For 65 mm Ø .	No.	50.00	161.00	8050.00
230	uPVC Cross of Shedule-80 of any standard approved brand & quality. For 15 mm Ø .	No.	50.00	25.00	1250.00
231	uPVC Cross of Shedule-80 of any standard approved brand & quality. For 20 mm Ø .	No.	40.00	38.00	1520.00
232	uPVC Cross of Shedule-80 of any standard approved brand & quality. For 25 mm Ø .	No.	40.00	64.00	2560.00
233	uPVC Cross of Shedule-80 of any standard approved brand & quality. For 32 mm Ø .	No.	40.00	199.00	7960.00
234	uPVC Cross of Shedule-80 of any standard approved brand & quality. For 40 mm Ø .	No.	50.00	248.00	12400.00
235	uPVC Cross of Shedule-80 of any standard approved brand & quality. For 50 mm Ø .	No.	50.00	405.00	20250.00
236	uPVC Cross of Shedule-80 of any standard approved brand & quality. For 65 mm Ø .	No.	50.00	709.00	35450.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
237	De-watering work for excavation of trench during Job work / repairing etc. with diesel engine Pump set (3 to 5 HP) with suction delivery pipe including proper disposal of water by Contractor, fuel transportation, adm. of pump set etc. all overheads (including all material, spare-parts etc. for de-watering) and temporary O&M, transportation etc. complete (For the Cpacity above 5 HP pump 40 Rs./ Hp per hour for additional capacity would be paid seperately)	Hour	300.00	256	76800.00
238	Laying of PVC / UPVC Pipe line - 15 to 75 mm dia with special as per site condition with required jointing solution including hydraulic testing as directed by engineer-in-charge	R.Mt.	2050.00	11.00	22550.00
239	Laying of PVC / UPVC Pipe line - 90 to 125 mm dia with special as per site condition with required jointing solution including hydraulic testing as directed by engineer-in-charge	R.Mt.	1000.00	16.00	16000.00
240	Laying of PVC / UPVC Pipe line - 140 to 180 mm dia with special as per site condition with required jointing solution including hydraulic testing as directed by engineer-in-charge	R.Mt.	300.00	25.00	7500.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
241	Unbonded Post Tensioning Pre-stressed Concrete (PT) beam work. PT System of "SPORT COMPLEX WORD NO.-17 AT RAJKOT" Inclusive of Design, Preparing the drawings, Cutting the tendons as per workshop drawings, Transportation, Execution & Installing, Stressing the PT tendon with its accessories & components. PT Cable - 12.9mm diameter 7ply P.E Coated, H.T. Low relaxation pre-stressed concrete strand confirming to IS: 14268, Ultimate strength 1860N/mm2.	R.Mt.	20610.00	250.00	5152500.00
242	Extra for additional height of propping and centering where the height of propping and centering exceeds 4 .O M between supporting floor to ceiling including temporary brick or stone pillars for supporting as required. (iii) Height more than 4.0 M. and upto 5.0 M	SqM	5860.00	386.48	2264772.80
243	Extra for additional height of propping and centering where the height of propping and centering exceeds 4 .O M between supporting floor to ceiling including temporary brick or stone pillars for supporting as required. (iii) Height more than 6.0 M. and upto 7.0 M	SqM	1490.00	563.85	840136.50
244	Extra for Providing formwork with sheathing steel sheets so as to give a fair finish in (H) (2) Sides and soffits of Beams, Beam Haunchings cantilevers Girders, Bressumers and Lintels exceeding 1 M. in Depth.	SqM	1170.00	94.02	110003.40
245	ALCO panel work for Elevation	SqM	265.93	3500.00	930750.00
246	Glass panel work for Elevation	SqM	730.00	4325.00	3157250.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
247	Natural or Artificial stone clading for exterior elevation wall	SqM	530.00	3225.00	1709250.00
248	Providing and fixing CNC Cut 3.5MM thick MS plate as per desing and size given by Consulting Architect incharge.	SqM	98.01	4400.00	431250.00
249	Selection - 1 Barmuda Grass carpating for football ground and plantation	Sq.Ft	31000.00	39.00	1209000.00
250	60 Lit. capacity Water cooler for drinking water arrangement - SS-304 Body - Blue star or equivalent brand	No.	2.00	55000.00	110000.00
251	Drilling of bore 165mm hole by DTH ring (a) 0 to 150mtr.	RMT	150.00	211.50	31725.00
252	Drilling of bore 165mm hole by DTH ring (a) 151 to 200mtr.	RMT	100.00	261.50	26150.00
253	HDPE Pipe PN-6 & PE-80 with ISI 4984 mark, Material Density is 946.4 Kg / M3, Wall thickness as per IS-4984. For 63 mm. (Weight-0.734 Kg)	RMT	250.00	208.00	52000.00
254	HDPE Pipe PN-6 & PE-80 with ISI 4984 mark, Material Density is 946.4 Kg / M3, Wall thickness as per IS-4984. For 75 mm. (Weight-1.041 Kg)	RMT	250.00	296.00	74000.00
255	V6 - 7.5HP - 3 phase Submersible pump set with required all material PVC pipe and fittings, starter, etc complete	No.	1.00	51700.00	51700.00
256	V6 - 5HP - 3 phase Submersible pump set with required all material like PVC pipe and fittings, starter, etc complete	No.	1.00	37140.00	37140.00
257	3HP - 3 phase open well Submersible pump set with required all material like PVC pipe and fittings, starter, etc complete	No.	1.00	21600.00	21600.00
258	2HP - 1 phase open well Submersible pump set with required all material like PVC pipe and fittings, starter, etc complete	No.	1.00	16580.00	16580.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
259	Supplying & erecting XLPE(IS:7098)(I)-88 ISI unarmoured copper cable 1.1 KV grade to be erected as directed of following size. (F) 3 core 4 Sq. mm	RMT	500.00	185.00	92500.00
260	Supplying & erecting XLPE(IS:7098)(I)-88 ISI unarmoured copper cable 1.1 KV grade to be erected as directed of following size. (E) 3 core 2.5 Sq. mm	RMT	250.00	135.00	33750.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
261	Anti-Termite System:Providing and laying of permanent piping technology anti-termite treatment before flooring work by installing LLDP (Low linear density polyethylene) tube of 8 mm O.D. & 6.4 mm 1.D. with inbuilt pressure compensation chip every 30 cm interval in the tube, having working pressure of 2 Kg/cm2 and release rate of 1.9 Itr/hour fixed by P-clips and nails. The LLDP pipe shall be installed at the entire periphery of the building and at internal network of building at a depth of 20 to 200 mm under floor at every 2 to 3 mtr. c/c distance (adjusted as per building layout) & Ends of loop pass through a PVC elbow of minimum 32 mm ID at junction box of wall and floor level, entering into a steel reinforced grooved flexible pipe of minimum 22 mm ID leading into junction box and the loops shall terminate in junction boxes & test every junction during injecting chemicals for termite control treatment. The anti termite chemical Imidacloprid 30.5% SC mix as per IS-6313 (part III) shall be injected by the pressure pump diluted with water @ 10.5 ml/5 ltr of water at the rate of 2 Kg/sq.cm @ 5 Ltr/SMT. The contractor shall submit approved line plan for piping system and junction boxes dully approved by Engineer-in-Charge with bond of 5 year warranty.(II)Anti Termite chemical injected area (Chemical injecting incl. labour cost)	SqM	4700.00	133.00	625100.00
262	Pre-moulded Joint filler 25mm thick for expansion joint	SqM	42.00	570.00	23940.00
263	Providing and fixing 75mm MS hollow pipe	Kg	690.00	120.00	82800.00

Sr. No.	Item Description	Unit	Qty.	Rate	Estimated Cost
264	Supply and laying of Agregate (12-18 mm)	CMT	31.00	850.00	26350.00
265	RCC Precast Cover (700 x 550 x 60 mm) - 5T	No.	40.00	900.00	36000.00
266	Providing and fixing Biometric Face authentication Door Access Control System - 2000 Users including software development :- Door Access Biometric device Face+Card+PIN, 100 Access Control Users Perpetual License for COSEC CENTRA (Consider 2000 Users), 100 Platform Users on COSEC CENTRA PLATFORM (Consider 2000 Users), Matrix License Dongle, Door EM Lock 600 LBS, Door Lock L/U/Z Bracket, Cosec PAth DCFE (If Required), Exit Switch Push Button with Back Box, 2Core x 1Sqmm Cable, PVC Pipe and accessories - At actual requirement, Installation, Testing and Commissining Service etc complete.	No.	12.00	198000.00	2376000.00
	Total Civil Work Amount (A)				186985507.36
	Say Total Civil Work Amount (A)				186985600.00

Add. Asst. Engineer
R. M. C.

Dy. Executive Engineer
R. M. C.

ADDL. CITY ENGINEER
Rajkot Muni. Corporation

Signature of Contractor with Seal

[B] Electric work

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
1	Point wiring for Light / Bell with 2-1.5 sq.mm & earthwire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multistrand copper wires, in following type of pipe to be erected concealed in/ on surface on wall/ceiling complete with 6A Modular type switch / bell push & accessories and earth continuity of following type, erected on PVC / Metallic box, single mounting base frame covered with textured/metallic front plate modules erected on / in wall / ceiling as per pipe erected, with necessary Lamp holder /ceiling rose / H.D.Connector as directed.(a) with medium class Rigid PVC pipe and accessories Cat. III	397	Pt	415	164755.00
2	Point wiring for secondary light point with 2-1.5 sq.mm & earthwire of 1.5 sq.mm (green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multistrand copper wires, in following type of pipe to be erected concealed in / flushed on wall/ceiling, complete with earth continuity and necessary connection with primary light with accessories erected on Metal / PVC box covered with 3 mm thick PC(Polycarbonet) / Acrylic sheet for open / concealed wiring. with necessary Lamp holder / ceiling rose / H.D.Connector as directed.(a) with medium class Rigid PVC pipe and accessories	589	Pt	111	65379.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
3	Point wiring for FAN with 2-1.5 sq.mm & earthwire of 1.5 sq.mm (Green) both are of .ISI marked 1.1 KV Grade FRLS PVC insulated multistrand copper wires, in following type of pipe to be erected concealed in / flushed on wall/ceiling complete with 6A Modular type switch and hum free EME four or more step type electronic fan regulator with separately mounted and accessories with earth continuity of following type erected on PVC / Metallic box, single mounting base frame covered with textured/metallic front plate modules erected on / in wall / ceiling as per pipe erected. with necessary ceiling rose / H.D.Connector as directed. (a) with medium class Rigid PVC pipe and accessories Cat. III	150	Pt	593	88950.00
4	Point wiring for Individual Plug with & earthwire of 1.5 sq.mm (Green) both are of ISI marked 1.1 KV grade FRLS PVC insulated multistrand copper wires, in following type of to be erected concealed in / on surface of wall / ceiling complete with Modular type switch & 5 pin Plug erected on PVC / Metallic box covered with appropriate front plate modules erected on / in wall / ceiling as per pipe erected with following type of accessories. [I] For 6A Plug with 2-1.5 sq.mm Cu. Wire (a) with medium class Rigid PVC pipe and accessories Cat. III	97	Nos	441	42777.00
5	[II] For 6/16A Plug with 16A Switch & 2-2.5 sq.mm Cu. Wire (a) with medium class Rigid PVC pipe and accessories Cat. III	97	Nos	663	64311.00
6	Point wiring for Looped Plug with 6A Modular type switch & 5 pin socket erected on PVC / Metallic box, single mounting base frame covered with textured / metallic front plate modules erected on / in wall / ceiling with following type accessories Cat. III	104	Nos	239	24856.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
7	Providing following type of Modular Type Accessories mounted with pvc / metallic box, single mounting base frame covered with textured / metallic front plate , modules erected with necessary connection. As desired by Engineer In charge (3) Two Pin/RJ-11 Telephone Socket [A] For One Gang Cat.III	12	Nos	152	1824.00
8	(8) Modem Jack for Computer Open RJ-45	12	Nos	152	1824.00
9	(22) 16/20/25 Amp. Modular Starter for Motor / A.C. Unit Complete - CAT III	8	Nos	471	3768.00
10	(7) Blank Plate Single CAT iii	309	Nos	24	7416.00
11	(19) Modular Indicating Call Bell Cat.III	8	Nos	311	2488.00
12	Supplying & erecting approved make LAN cable of following size in existing pipe as per direction [C] CAT - 6	1571	Mtr.	45	70695.00
13	Supplying & erecting approved make Telephone Cable electrolytic copper conductor PE insulation twisted in two pairs, & wrapped with FRLS PVC tape & sheathed with FRLS PVC or HFFR outer Jacket suitable for telephone wiring & confirming to C-DOT erected in existing pipe. of following size of conductors & nos.of pairs. With necessary connections. [A] Conductor Size 0.5 mm (3) Three Pairs	412	Mtr.	25	10300.00
14	Providing and erecting ISI mark Medium class RIGID PVC PIPES of following size complete to be erected on/in wall or ceiling erected with necessary PVC fittings & Junction boxes fixed with adhesive solution & Clamps with following dia of pipes, in approved manner as directed (b) 25 mm	4120	Mtr.	32	131840.00
15	Providing & erecting PVC Corrugated Flexible Conduit with required nos. of coupling, PVC bushes, Check-nuts etc. complete of following sizes.(2) 25 mm	1030	Mtr.	35	36050.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
16	Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected concealed in /flushed on wall/ceiling, with 1.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (a) with medium class Rigid PVC pipe and accessories (a) 2 wire 1.5 sq. mm	1339	Mtr.	59	79001.00
17	(b) 2 wire 2.5 sq. mm	6201	Mtr.	78	483678.00
18	Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected in / on wall / ceiling with 2.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (a) with medium class Rigid PVC pipe and accessories(a) 2 wire 4 sq. mm	1401	Mtr.	106	148506.00
19	(h) 4 wire 6 sq. mm	330	Mtr.	241	79530.00
20	(i) 4 wire 10 sq. mm	124	Mtr.	392	48608.00
21	Supplying & erecting XLPE(IS:7098)(I)-88 ISI unarmoured copper cable 1.1 KV grade to be erected as directed of following size. (F) 3 core 4 Sq. mm	560	Mtr.	185	103600.00
22	(E) 3 core 2.5 Sq. mm	369	Mtr.	135	49815.00
23	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand Copper conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe at road crossing or floor of following size of cables. (A) 4 core 2.5 Sq. mm	865	Mtr.	267	230955.00
	(A-1) 4 core 4 Sq. mm	124	Mtr.	359	44516.00
	(B) 4 core 6 Sq. mm	721	Mtr.	503	362663.00
	(C) 4 core 10 Sq. mm	1143	Mtr.	667	762381.00
	(D) 4 core 16 Sq. mm	330	Mtr.	975	321750.00
	(E) 3 1/2 core 35 Sq. mm (10 Sq. mm 1/2 core)	330	Mtr.	1845	608850.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
24	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand Copper conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe at road crossing or floor of following size of cables. (D) 3 1/2 core 70 Sq. mm (35 Sq. mm 1/2 core)	124	Mtr.	3535	438340.00
25	Providing and erecting XLPE(IS:7098)(I)-88 ISI armoured cable multistrand Copper conductor for 1.1 KV. to be laid on wall with necessary clamps or in existing trench / pipe at road crossing or floor of following size of cables. (F) 3 1/2 core 120 Sq. mm (70 Sq. mm 1/2 core)	93	Mtr.	6355	591015.00
26	Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables.				
	(a) 2 to 4 core 2.5 / 4 Sq. mm	21	Nos	33	693.00
	(b)2 to 4 core 6 Sq. mm	31	Nos	38	1178.00
	(c)2 to 4 core 10 Sq. mm	52	Nos	38	1976.00
27	Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables.				
	(C) 3 & 1/2 core 70 Sq. mm	12	Nos	102	1224.00
28	Providing and, fixing heavy duty flange type brass cable gland with rubber ring for PVC insulated armoured cable complete with out going tails, insulating tape etc for following size of cables.				
	(H) 120 Sq.mm.	8	Nos	139	1112.00
29	Solderless crimping type Copper lugs conforming to IS suitable for cable of following size evenly crimped with high pressure tool & connected to switchgear terminals with brass/cadmium plated nut bolts in an approved manner.				
	(A) 1.5/2.5 to 6 Sq.mm	412	Nos	8	3296.00
	(B) 10 Sq.mm	103	Nos	10	1030.00
	(F) 70 Sq.mm.	37	Nos	27	999.00
	(H) 120 Sq.mm.	37	Nos	56	2072.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
30	Providing & Erecting approved make following size of TV Co-axial flexible cable comprising inner conductor of solid bare copper insulated with Foam PE & Secondary conductor made of poly - Aluminium film bonded Al. Braids @ suitable coverage overall sheathed with black PVC insulation. c) RG - 6 CCS	361	Mtr.	37	13357.00
31	Supplying & erecting Delton or approved make Telephone Cable electrolytic copper conductor PE insulation twisted in two pairs, & wrapped with FRLS PVC tape & sheathed with FRLS PVC or HFFR outer Jacket suitable for telephone wiring & confirming to C-DOT erected in existing pipe. of following size of conductors & nos.of pairs. With necessary connections. [A] Conductor Size 0.5 mm (a) Unarmoured 2) Two Pairs	515	Mtr.	25	12875.00
32	Providing & erecting Switch board for Computer or electric apparatus consisting of following items in single board erected on PVC / Metal board with 3 mm thick PC (Polycarbonate) / Acrylic sheet erected as directed 1 no. 6A/16A universal plug-switch combined. 4 nos. 6A Switch 4 nos. 6A 5 pin Plug [B] For Modular Type Accessories Cat. III	12	Nos	1071	12852.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
33	Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/ aluminium die cast powder coated and high U.V. & corrosion resistance with diffuser with company mark/name 160V to 270V, Power Factor more than 0.95, THD < 15%, CCT 3000 K to 6500K, Luminaire efficacy> 85 lumens/watt ,LED LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Tube Light with integral driver (iv) 22-24 Watts, Surge - 2KV,IP-20, conventional 4 feet	41	Nos	370	15170.00
34	Supplying and erecting led lamps with following wattage capacity of 220 to 240 voltage, minimum 15000 burning hours life, 500 V in built-surge protection,Polycarbonate diffuser, mounting suitable for E14 / E27 / B22 lamp holders, pf >= 0.5 (A) LED Lamps integral type, with PC diffuser suitable LAMP holder (ii) 5 to 8 watts CAT III	10	Nos	111	1110.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
35	Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/aluminium pressure die cast powder coated and high U.V. & corrosion resistance with diffuser housed in aluminium casted body with company mark/name 160V to 270V,Power Factor more than 0.95, THD < 15 %, CCT 3000 K to 6500K, Luminaire efficacy> 85 lumens/watt , CRI should be Greater then 90 LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (B) LED Panel Light / Down Light with provision for Plane front frame with translucent cover fixed to housing complete.IP20 (vi) 30 TO 36 watts, Surge- 2KV CAT III	711	Nos	1777	1263447.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
36	Supplying and erecting LED indoor fittings with LEDs of wattage 0.2 Watt to 0.5 Watt assembled on single MCPCB, with housing used as a heat sink shall be made of thick sheet Steel conforming to IS: 513/CRCA/aluminium pressure die cast powder coated and high U.V. & corrosion resistance with diffuser housed in aluminium casted body with company mark/name 160V to 270V,Power Factor more than 0.95, THD < 15 %, CCT 3000 K to 6500K, Luminaire efficacy> 85 lumens/watt , CRI should be Greater then 90 LED driver efficiency > 85 % (fitting required LM-79 & LM-80 Certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Square/ Circular shaped Surface/Recessed Mount Downlight with provision for spring loaded mounting clips complete.IP20 CRI should be Greater then 90 (iv) 22-24 watts, Surge-2 KV Cat-III	165	Nos	751	123915.00
37	(F) Spot Light 425 Lumens, Surge-2KV (ii) 8 to 11 Watts Cat-III	21	Nos	1354	28434.00
38	(D) LED Strip Light (i) Minimum 4.8W-120 LED per meter (2 wire, IP-65) with non integral suitable Driver complete Cat-III	31	Rmt	134	4154.00
39	(D) LED Strip Light (ii) Minimum 7.2W - 240 LED per meter,(2 wire, IP-65) with non integral suitable Driver complete Cat-III	31	Rmt	218	6758.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
40	Supplying and erecting LED street light / Flood light fittings with High power White LEDs wattage of 3 Watt and above assembled on single MCPCB, efficiency more than 130 lm/w and corrosion free High pressure die cast aluminum housing with smooth finish powder coated and heat sink extruded aluminium with diffuser and Polycarbonate optics/ lenses, with toughened glass with company mark/name engraved or embossed 160 to 270 V,Power Factor more than 0.95, THD < 10 %, CCT 3000 K to 5700K,Uniformity ratio >0.45, Luminaire efficacy> 130 lumens/watt . LED driver efficiency > 85 %. Surge Protection 10KV(fittings required LM-79 & LM-80 certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (B) Flood Light (IP-65), Surge - 4KV,Light must have 440VAC line supply protection. It should withstand 48 hours for 440VAC line supply & CRI>90 (vii) 200 - 250 watts CAT III	95	Nos	19200	1824000.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
41	Supplying and erecting LED street light / Flood light fittings with High power White LEDs wattage of 3 Watt and above assembled on single MCPCB, efficiency more than 130 lm/w and corrosion free High pressure die cast aluminum housing with smooth finish powder coated and heat sink extruded aluminium with diffuser and Polycarbonate optics/ lenses, with toughened glass with company mark/name engraved or embossed 160 to 270 V,Power Factor more than 0.95, THD < 10 %, CCT 3000 K to 5700K,Uniformity ratio >0.45, Luminaire efficacy> 100 lumens/watt . LED driver efficiency > 85 %.(fittings required LM-79 & LM-80 certificates)(NOTE: Below description have shown ranges of Wattage capacity of LED fittings.The Engineer incharge may select any wattage capacity between the ranges shown.) (A) Street Light (IP-65), Surge protection -4KV integral and 10 kv non integral ,Light must have 440VAC line supply protection. It should withstand 48 hours for 440VAC line supply. (i) above 36 to 48 watts	52	Nos	3312	172224.00
42	Supplying and erecting approved make Octagonal pole made from HR sheet steel. The pole should be made as per IS. and shall be coated with hot dip galvanizing as per IS 2629/2633/4759, suitable suspend local wind speed with integral Junction box consist of terminal plate of min 6mm Hylam sheet, standard profile 35mmX7.5mm Din-Rail for MCB Mounting, stud type terminal and arrangement for cable termination to be erected on foundation as per details given by manufacturer considering site requirement.(C) 5 Mtr. Long 70 mm Top X 135 mm bottom dia, 3 mm thickness with 200mmX200mmX12mm base plate, 4-M20 Bolts and 600mm long J-Bolt.	43	Nos	6806	292658.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
43	SUPPLY OF HOT DIP GALVANIZED STREET LIGHT BRACKET AS PER APPROVED DESIGN AND TENDER SPECIFICATION (SINGLE /DOUBLE / TRIPLE ARM)	215	KG	134	28810.00
44	Providing M-20 / 1:2:4 cement concrete foundation & 70 % PCC from bottom including excavation for the pole of size 45 x 45 x 100 cms. Deep in below ground level with plinth of 45 cms x 45 cms (or 45 cms dia x 45 cms) high upper ground level with necessary curing and finishing in approved manner.(for 5 mtr pole) including (Foundation bolt IS-1367 4 X 16 Dia. with Washer and Nut- 4 nos)	43	Nos	801	34443.00
45	Supply & laying of 63mm HDPE Pipe 6 kg/cm2 IS- 4984 mark including all with necessary Fittings etc. complete.	515	Rmt	247	127205.00
46	Providing & laying approved make Double walled corrugated pipes (DWC) of polyethylene(conforming to IS 14930 II)with necessary connecting accessories of same material at required depth in existing trench for laying of cable. below ground / road surface for enclosing cable (A)50 mm outer dia	618	Rmt	62	38316.00
	(C)90 mm outer dia	206	Rmt	95	19570.00
47	Providing and fixing approved make Perforated **C type cable tray.** Made from CR sheet steel. The cable tray should be single or double bended as per required and as per IS 2062/1079 and shall be coated with hot dip galvanizing as per IS 2629/4759. with coupler plate / Fish plate and GI hardware like nut - bolt and washers etc. erected on existing support as per Specification and as per instruction of engineer in charge.. **(5) 300 X 50 X 1.5 mm Thick**	330	Rmt	616	203280.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
48	Supplying, erecting, testing, commissioning approved make M.S. Polygonal High Mast Pole having following general Specification. (a) Polygonal Section fabricated from M.S. Plate confirms BSEN 10025 & Hot deep galvanized minimum 65/86 micron (as per IS 2629 /1985) Lantern carriage with ring and rubber lines for erection of luminaries of suitable site. (b) Maximum telescopic section not more than four (c) Double drum gear pipe motorized winch with 6mm dia S.S. Rod (For 16 mtr and above size) (d) Approved make L.E.D. aviation light = 1 No. Lightening arrestor = 1 No. with necessary wiring of 2.5 sq.mm 5 core ISI copper cable Unarmoured. (e) Bottom most section suitable for mounting reversible motor and switchgears having door not more than 1400mm x 300mm with waterproof gasket & hinges & locking arrangement. (f) Pole structure comprises suitable size of reversible motor, cable and necessary switchgears with control panel. (g) bottom section shall have suitable size of thickness supports ribs foundation bolts nuts etc. (h) Item not comprises the cost of lanterns. (i) Necessary Cement Concrete foundation as per IS including testing & commissioning of the entire structure for following size of High Mast poles [1] High Mast 12 Mtr. TOP A/F 105 mm, BOTTOM A/F 360mm, No. of Sec. No. - 1, Bottom Thickness - 3 mm, Size of Base Plate - Dia 520 mm x 20 mm thick, Foundation Bolt Size M24 x 850 mm, Qty - 6 Nos., Suitable for mounting Fitting of Light - 6 Nos.	RO	Nos	140214	

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
49	[3] High Mast 16 Mtr. TOP A/F 150 mm, BOTTOM A/F 450 mm, No. of Sec. No. - 2, Bottom Thickness - 4 mm, Top Sec. 3 mm, Size of Base Plate - dia.560 mm x 20 mm thick, Foundation Bolt Size M24 x 880 mm, Qty - 8 Nos., Suitable for mounting Fitting of Light - 8 Nos.	4	Nos	182612	730448.00
50	Supplying and erecting approved make oscillating type medium duty bracket fan with Aluminium Blades A.C. 23OV. 50cy/s, with thermal overload protection wall mounted with height adjustment and rotary tilting device complete with guard, pull cord for speed and oscillation flexible Core plug top complete erected with lead wires as directed.(Make & Sample shall be approved by Engineer in charge) (a) 400mm	10	Nos	2509	25090.00
51	Supplying and erecting approved make double ball bearing oscillating type Heavy duty bracket fan with Aluminium Blades A.C. 23OV. 50cy/s wall mounted with height adjustment and rotary tilting device complete with guard, wall bracket,mounting accessories as directed.(Make & Sample shall be approved by Engineer in charge) (b) 600mm	37	Nos	6375	235875.00
52	Providing & erecting Approved make Power Saving Ceiling Fan of decorative type with double ball bearing ISI mark with Condenser 230 volt A.C. 50 Hz 1200 mm sweep complete having 3blades with aluminium blades with , canopy & 30 cms. down rod erected with 24/ 0.2, 3 core flexible wire with earthing.(Make & Sample shall be approved by Engineer in charge)	155	Nos	2289	354795.00
53	Supplying and erecting 19 / 20 mm. nominal bore Medium Class M.S. Pipe down rod erected duly painted for fan complete with necessary 24/ O.20, 3 core flexible wire with earthing.	155	Nos	107	16585.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
54	Supplying & erecting fan hook box of 10 mm M.S. round bar bounded to the RCC bars up to 50mm length each side and pierced through a 16 Gauge M.S. box / Heavy Duty PVC box complete erected concealed in Ceiling with necessary finishing.	185	Nos	107	19795.00
55	Providing 2.5mm.thick laminated acrylic sheet to cover the fan hook or Fan box.	185	Nos	18	3330.00
56	Supplying & erecting approved make low noise decorative exhaust fan having size 200mm with 1350 RPM with square frame ABS body with inbuilt lowers & square frame. (Make & Sample shall be approved by Engineer in charge)	15	Nos	1687	25305.00
57	Supplying & erecting single phase approved make industrial exhaust fan suitable for medium duty ring mounted low noise operation suitable for medium duty having following dia size and maximum speed in RPM (Make & Sample shall be approved by Engineer in charge)				
	[E] 450 mm dia 1400 RPM Cat-II	10	Nos	3899	38990.00
58	Providing suitable M.S. louver shutter of the Exhaust fan.(Make & Sample shall be approved by Engineer in charge)	10	Nos	365	3650.00
59	Providing recess in wall or window frame suitable for erection of Exhaust fan complete with plastering and colour washing to match the colour of the wall or window complete with expanded metal in order to render the fitting in accessible and the room water-proof. (Make & Sample shall be approved by Engineer in charge)	10	Nos	188	1880.00
60	Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, confirming to IS 13032 and BS 5486-1986 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) (B) three phase incoming and single phase horizontal type outgoing Per phase isolation type (PPI) (b) sheet steel double door (iii)8 way	8	Nos	2421	19368.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
61	Providing and erecting Sheet Steel powder coated MCB distribution board - flush / surface mounted fitted with busbar, neutral link, earth bar and DIN rail, confirming to IS 13032 and BS 5486-1986 without MCB to house appropriate nos. of MCBs.(The DBs should be used of same company of MCB to be used) (B) three phase incoming and single phase horizontal type outgoing Per phase isolation type (PPI) (b) sheet steel double door (i)4 way	4	Nos	623	2492.00
62	(A) single phase incoming and horizontal single phase outgoing (b) sheet steel double door (IP-43) (iii)8 way	31	Nos	1141	35371.00
63	Miniature circuit breaker single pole 6A to 32A suitable to operate on 240 V A.C. system and having breaking capacity 10 KA to be erected in existing box. confirming to IS 8828/1996 with ISI Mark Cat.III	451	Nos	111	50061.00
64	Providing & erecting 240 V MCB double pole switch for motor & inductive load (C Curve) having 10 KA breaking capacity & confirms to IS : 8828 in existing box having following capacity (A) 6 to 32 Amp.	43	Nos	297	12771.00
65	Providing & erecting 415 V MCB Four Pole for Motor & Inductive Load (C Curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity				
	(a) 6 to 32 Amp. Cat.III	35	Nos	590	20650.00
	(b)40 Amp. Cat.III	8	Nos	662	5296.00
	(c)63 Amp. Cat.III	25	Nos	730	18250.00
66	Providing & erecting 415 V MCB three Pole for Motor & Inductive Load (C Curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity				
	(a) for 40 Amp. Cat.III	2	Nos	641	1282.00
	(b) for 63 Amp. Cat.III	4	Nos	709	2836.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
67	Approved make ELCBs / RCCBs conforming to IS: 12640 and having sensitivity of 30 mA and Short Circuit withstand capacity of 6 KA and suitable for operation on 3 phase and neutral 415V. having characteristic of quick action & tripping with all advance feature & do not incorporate any electronic component for following Max. rating erected as directed.(iii) 63 Amps. FP	8	Nos	3010	24080.00
68	Approved make ELCBs / RCCBs conforming to IS: 12640 and having sensitivity of 30 mA and Short Circuit withstand capacity of 6 KA and suitable for operation on single phase 240 V. having characteristic of quick action & tripping with all advance feature & do not incorporate any electronic component. for following Max. rating erected as directed (i) 25 Amps.DP Cat. III	28	Nos	1950	54600.00
69	Supply, installation, testing & commissioning of Lightening Arrestor(Protection Level-I). The unit rate shall also includes supply and fixing of 5 Mtr. Mast on which arrestor should be mounted. Installation to be done for down conductor copper 1 Runs of 1CX70 Sq.mm copper cable from L.A to earthing pit, Lightening strike recorder "LSR" - if Required. (Route on the external facia of the building shall be got approved from the Client/Consultant/PMC prior to installation). SITC of Lightening arrestor (Protection level-I) similar to LPI ESE 60. model-Air Terminal. OR indelec make S 6.60 or ABB make OPR. (Radius of protection 80 mtr.)	1	Nos	139000	139000.00
70	SITC of Lightening strike recorder "LSR".	1	Nos	29800	29800.00
71	SITC of 1C X 70 Sq.mm Copper cable including insulator , sadling etc including all necessasy accesaries for Lightening arrestor earthing.	62	Mtr.	632	39184.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
72	Supplying & erecting earth pit of minimum bore dia.150mm size approved make Earthing Electrode consisting Pipe-in-Pipe Technology as per IS 3043-1987 made of corrosion free G.I.Pipes having Outer pipe dia of 50mm having 80-200 Micron galvanising, Inner pipe dia of 25 mm having 200-250 Micron galvanising, connection terminal dia of 12mm with constant ohmic value surrounded by highly conductive compound with high charge dissipation suitable for following type of applications.	26	Nos	10489	272714.00
	(c) For Electrical Installation covering Transformer Neutrals, Lightning arrester Earthing, A.C.Plant & Sensitive Computer System(like Automation, SCADA) i.e independent Earthing in normal soil. Length of Pipe : 3.00 mtrs Back filling Compound :2 nos Bags of 25 Kg.				
73	Providing and erecting required size HOT deep Galvanised iron strip for earthing of H.T. , OCB/ ACB/ Transformer LT panel board, Motors etc. using proper clamp. (Any size)	412	Kg	77	31724.00
74	Providing and erecting Annealed bare Copper wire 8 to 16 SWG.	82	Kg	787	64534.00
75	Supplying and erecting Multifunction meter. Accuracy Class 1.0 CT Secondary - Site Selectable 1A / 5A Flush Mounting - 96x96mm Parameter:- V, A, F, PF, kW, kVA, Old energy, On and Run hours, site selectable kWh/ kVAh	14	Nos	9890	138460.00
76	Supplying and erecting approved make set of indicator lamps of LED type lamp, lens cover, Bakelite holder complete erected with necessary connections.	41	Nos	43	1763.00
77	Providing & erecting L.T. Current Transformer with bar primary 50/5 to 1000/5 ratio 15 VA burden erected in existing CRCA box duly secured with insulating materials connected to the meter	58	Nos	272	15776.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
78	Providing, and erecting 11 KV D.P. 9 mtr. high Structure made of 6" x 3" 'I'-Section Girder, 4" x 2"channels, clamps, nuts, bolts etc. Suitable for erection of the followings duly connected with necessary ACSR conductors. as per drawing approved by the Engineer- in charge complete with following. Height as per IS 7 Mtr above ground) (A) 11 KV 200 Amps Drop out fuses with S.R.B.P. tubes carries.-Three nos (B) 11 KV G.O.D. switch complete with insulators, operating handle with galvanised pipe, Sq.bar etc. 400 Amp.- One Set (C) 11 KV lightening arrestor with clamp- Three Nos. (D) 11 KV shackle insulators- Six Nos. (E) The above D.P. structure should be earthed with 25 mm.X 3 mm thick double copper earth strips run separately and connected with separate copper plate earth electrode.	1	Nos	97459	97459.00
79	Providing and erecting ISI Marked 3core 120 Sq.mm XLPE insulated 11 KV armoured cable Aluminium conductor IS-7098 to be laid on wall with clamps or in provided cable trench / pipe approved manner as directed.	80	Mtr.	1527	122160.00
80	Providing and erecting cable end termination kit, heat shrinkable Push on type Densons/ Raychem/ Elastimold make suitable for 11 KV XLPE cable 3core 95 & 120 Sq.mm (A) Outdoor type	4	Nos	14467	57868.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
81	Providing, installing & commissioning & getting Plan Approval as well as NOC from Electrical Inspector for draw out type 11 KV indoor extensible type totally enclosed, single busher floor mounting metal clad 400A TO 1250A. vacuum tube circuit breaker confirming to IS: 2516 (Part- I &11, Sec.1) 'for use on 11 KV, 3 phase, 50 c/s. unearthed A.C. supply system having breaking / rupturing capacity of 350 MVA complete with spring operated mechanism, mechanically ON-OFF and spring mechanism charged, discharged indicators, ON-OFF mechanical push button, operation counters necessary auxiliary switches, closing shunt trip, air insulated busbar chamber having heat shrinkable PVC sleeves, mechanical interlocks safety shutters, isolating plugs and a VCB trolley with three vacuum interrupters with epoxy support insulators and self aligning finger type isolating contacts. The breaker shall be Manual cum motorised mechanism with following accessories. 1. Flush mounting type digital multifunctional meter with communication facility 2. Power Factor Meter One No 3. Double core current transformer cast resin type having ratio 200 to 50/1 core for metering & second core for protection having required class of accuracy. 4. Instantaneous under voltage relay - & Temperature rise Tripping Relay 5. Electrical closing coil & short trip coil operating on 110V. D.C.- 6. Auxiliary relay for anti pumping device 7. Three phase Three limb Drawout type feeder connected & output of 200 VA cast resin insulated potential transformer having ratio 12000V./110V. and 200 VA Burdon with 0.5 accuracy. 8. Common Alarm bell operating on 110V A.C.- One No. 9.Digital KWH Meter - One No. 10. Cable boxes suitable up to 11 KV 3core 150 sq.mm XLPE cable. 11. 230V. A.C. to 110V. D.C. power pack for closing & tripping circuit common.. (for each VCB) 12.Breaker ON-OFF, Auto trip and spring charged indicators	1	Nos	472883	472883.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
82	Providing, erecting, testing & commissioning approved make oil immersed ONAN cooled, double wound, core type indoor / outdoor copper wound 11KV/ 433V step down transformer of following capacities operating on 3 phase, 50 Hz 4 wire & neutral earthed system continuously rated for a full temperature rise in oil not exceeding 45 Deg.C.at maximum ambient temp. of 50 Deg. C. complete with necessary radiator first filling of new transformer oil & standard fitting as below complying with IS 1180(Part 1):2014 standards with energy efficiency level 2 Off load tap changing range steps +2.5% to -5% on H.V for variation should be provided. The H.V. shall be connected Delta & Secondary with star connection. The transformer should have cable-end boxes on H.T. side suitable for up to 3 core 150 sq.mm. XLPE cable & on L.T. side suitable for bus duct or cables as per requirement complete with test certificates from manufacturers 1. Oil conservator with filling Hole & Cap - One No. 2. Thermometer pocket with 6" dial type thermometer switch alarm & trip contacts- Two nos. 3. Silica-gel breather with charge- One No. 4. Plain oil level gauge - One No. 5. Drain / Sampling / Filter valve- One No 6. Top Filter Valve - One No. 7. Explosion vent with Diaphragm - One No. 8. Rating & Diagram plate - One No. 9. Additional neutral bushing for earthing - One No. 10. Bi directional Roller - Four Nos. 11. Earthing terminals - Two Nos. 12. Lifting lugs - Two Nos. 13. Air release plug. - One No. 14. Double float buchholz relay with Alarm and trip contacts. 15. Control cable as required from Transformer to VCB Panel is to be provided with necessary connection to VCB relays for protection. (d) 800 KVA (Max. allowable loses at 50 % of rated load is 2.287 KW and at full load is 6.402KW)	2	Nos	2800000	5600000.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
83	Supplying & erecting approved make Four Pole 415V change over switch interior for panel mounting with operating mechanism A.C.23 duty confirming to IS for (E)320A Cat.III	1	Nos	13321	13321.00
84	Supplying & erecting approved make Four Pole 415V change over switch interior for panel mounting with operating mechanism A.C.23 duty confirming to IS for (I) 1000 A Cat. III	RO	Nos	55085	
85	Approved make standard Electrically Draw out type 4 Pole Air circuit breaker. Having 50 kA breaking capacity with ICU=ICS=ICW (1 sec)Vsr=690 v, Ui=1kv ,impulse voltage=12 kv with following type of relay and accessories. ((B) with microprocessor Release with over load, short circuit, earth fault protection and metering display in modular design with LED display and Test Trip button facility, CTs and auxiliary contacts, of following current ratings. (ii) 1000Amp 50 kA Cat III	2	Nos	141493	282986.00
86	Providing and erecting Approved make Three pole moulded case circuit breaker having breaking capacity/strength ICU of 50 K.A. and above at 415 V having Normal current rating 400A.with variable Thermal & magnetic release suitable to work on A.C.supply 50 c/s. With all internal connections, spreader tinned copper & complete erected in existing 16 G.M.S. housing. ICS=100% of ICU only Cat III	1	Nos	24979	24979.00
87	providing and erecting Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 50 KA and above at 415 V having Normal current rating 400A. with variable Thermal & magnetic release suitable to work on A.C.supply 50 c/s. With all internal connections & complete erected in existing 16 G.M.S. housing. ICS=100% of ICU only Cat III	3	Nos	24979	74937.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
88	Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 35 KA. at 415 V. having Normal current rating up to 200A.with variable Thermal & magnetic release suitable to work on A.C.supply 50 c/s. with all internal connections & complete erected in existing 16 G.M.S.housing ICS=100% of ICU only Cat III	3	Nos	16061	48183.00
89	Approved make Four pole moulded case circuit breaker having breaking capacity ICU of 25 KA. at 415 V,having normal current rating up to 25 A to 100A. with Fixed thermal & magnetic release suitable to work on A.C. supply 50 c/s. with all internal connections & complete erected in existing 16 G.M.S. housing. ICS=100% of ICU only Cat III	15	Nos	6112	91680.00
90	Supplying and erecting triple pole & neutral 440V / 500V panel mounting Copper Busbars with four equal Nos. of electrolyte bus having current density not more than 1.6 Amp. / sq.mm (Rated current / cross section area) duly wrapped with colour insulating tape for phase sequence of following current carrying capacity, erected with necessary bus bar supports /insulators, main cable socket to each bar, erected in existing cubical panel with necessary connections. (G) Suitable for 1200 Amp.capacity	12	Mtr.	16336	196032.00
	(F) Suitable for 800 Amp. capacity	4	Mtr.	13069	52276.00
	(D) Suitable for 400 Amp. capacity	12	Mtr.	7247	86964.00
	(B) Suitable for 200 Amp. capacity	4	Mtr.	3171	12684.00
	(A) Suitable for 100 Amp. Capacity	25	Mtr.	1942	48550.00
91	Providing & erecting weather proof, dust & vermin proof, floor mounted front operated indoor type cubical panel board having IP-54 protection made from 14 SWG thick CRC M.S. sheet for outer body & doors, 16 SWG thick CRC M.S.sheet for internal partitions with necessary supporting angles, flats including cutting, bending, drilling, welding, riveting with internal partitions & cable alley as per requirements & instruction of engineer-in-charge with erection of				

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
	(A) The standard companies switch gear shall be used and only manufacturers at CPRI approved factory and shall be certified by that company whose switch gears are used after fabrication for beneficial use (iv) with 1000 mm. depth	15	SqMt	40594	608910.00
	(B) The standard companies switch gear shall be used and only manufacturers at CPRI approved factory and shall be certified by that company whose switch gears are used after fabrication for beneficial use (i) with 350 mm. depth	5	SqMt	14755	73775.00
92	Mains with ISI marked, 1.5KV grade electrolyte multi stranded, annealed copper conductor with heat resistant PVC insulated conforms to IS 694, IEC - 227 erected in existing pipe of following size **(Specifically for control panel, relays, power switchgears, motor starters & control wiring)** with required size of copper lugs, nuts and bolts if required.(a) One wire 1.00 sq. mm	309	Mtr.	11	3399.00
	(b) One wire 1.50 sq. mm	309	Mtr.	16	4944.00
	(c) One wire 2.50 sq. mm	206	Mtr.	26	5356.00
	(d) One wire 4.00 sq. mm	52	Mtr.	35	1820.00
	(e) One wire 6.00 sq. mm	52	Mtr.	53	2756.00
	(f) One wire 10.00 sq. mm	103	Mtr.	87	8961.00
	(g) One wire 16.00 sq. mm	103	Mtr.	134	13802.00
	(h) One wire 25.00 sq. mm	196	Mtr.	223	43708.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
93	Design, Supplying, installing, testing of factory fabricated ready made Three phase APFC Panel Cubical Panel fabrication should be type tested as per IEC 61921, 61439:1&2 Capacitor Duty Contactor for switching as per following Steps Incomer Switch of MCCB type Icu=Ics=50KA at 400/440 Volts, with OC, SC, internal earth fault protection Incomer Switch of MCCB type Icu=Ics=50KA at 400/440 Volts, with OC, SC, internal earth fault protection,Copper tinned insulated Busbar,Cubical panel should be indoor type with IP 43 and IK 10,Metalized polypropylene film tye3-phase 550Volt Capacitor,De tuning Reactor for each capacitor,Panel having Short Circuit and Overload protection,Each step Capacitor having suitable MCB with Sc, OL, internal earth fault relay,Each stage having Stage Contactor (Capacitor load rating),PF regulator master controller having suitable steps with LCD display, Rs 485 Communication port, Indication LED Lamps for main incomer and ON-OFF for each capacitor bank,MS Chanel for Floor mounting, Cable entry as per site situation,Cooling fans for panel (g)250KVAR	1	Nos	711867	711867.00
94	Providing printed instruction chart both in English and Gujarati and duly framed with front glasses, for treatment of person suffering from Electric shock	1	Nos	**129**	129.00
95	Supplying rubber matting of following thickness as per IS:15652/IEC 61111 (b)4mm	10	SqMt	**1017**	10170.00
	(c)12mm	**10**	SqMt	**3051**	30510.00
96	Supplying stand first AID box with antiseptic cream, medicine for use on wounds due burn, crepe bandage, gauge bandage, medicated ready to use bandage (Band-aid) adhesive tape for medicinal user, Scissors, anti-septic solution (Savlon or similar) etc. (All above contents shall be of standard makes)	1	Nos	**297**	297.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
97	Providing and erecting metallic / VITRIFIED danger notice board for MEDIUM VOLTAGE installation to be erected as per IS. The board should be 150X150mm	1	Nos	**69**	69.00
98	Supplying & erecting carbon dioxide (CO2) fire extinguisher user of following capacity with necessary clamps made from 50 x 6 mm M.S. Flat with nut & bolts grouted in wall complete.[A] For 4.5 Kg Capacity	4	Nos	**6526**	26104.00
99	Supplying & erecting automatic emergency light with maintenance free battery for 20 Watts tube.	4	Nos	**1600**	6400.00
100	Supplying and erecting, commissioning and testing of Diesel Generating set confirming to IS: 4722:1968 & BS:5514 having continuous rating, 3 phase, 415 volts, 50 cycles A.C. supply comprising of a totally enclosed air/water cooled diesel engine with multi-cylinders developing suitable BHP not less than following capacity at 1500 RPM with 10% overload for one hour in 24 hours with standard accessories like fly wheel, lubricating oil cooler, "A" class governor, heavy duty fuel wheel and lubricating oil filter, oil bath air filler, lubricating oil pressure gauge, end exhaust manifold, standard set of tools with adjustable spanners, screw drivers, cylinder head to cover, joint cylinder head to exhaust, element lube oil filter, 12 / 24 volts electric starting equipment complete with standard heavy duty battery, dynamo, cut-outs, ammeter, necessary wiring, pressure gauge, starter etc and heavy duty Residential type exhaust silencer and vertical hot air duct both				

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
	logged with asbestos rope, save oil trays, exhaust piping of required length, standard wall/floor mounted fuel with level indicator and piping and drip proof alternator, self excited, self regulated, screen protected, with excitation system, capable of delivering the rated system output at 415 volts, 3 phase, 0.8 PF, 50 Hz, 4 wire, running at 1500 RPM, conforming to IS-4722-1968 with voltage regulation +/- 5% of rated voltage from no load to full load. Both the engine and alternator fitted on a common fabricated steel base plate with antivibration mounting engine and alternator both connected to each other by flexible flange coupling and with floor/wall mounted control panel box comprising of voltmeter ammeter, selector switches, ACB / MCCB / MCB of adequate capacity,				
	indicator lamps duly wired with HRC fuses. The alternator & control panel shall be connected with provided suitable capacity armoured cable and complete with Acoustic enclosure (canopy) made out of 16 SWG CRCA Sheet, sound absorbing material Rockwool of 64 density & 100 mm thick conforming to IS:8183 / PU Foam of 40 Density - at least 40 mm. The resin bonded rockwool covered from inside the canopy by perforated sheet with 3/4 mm holes, sound level not more than 75 dB at a distance of 1 mtr, as per PVCT norms. Erection, commissioning and satisfactory testing as per requirement with first filling of fuel, oil, etc. with guarantee / Warrantee of complete system for Two years. & with obtaining all necessary certificate from Electrical Inspector. The Capacity and Ratings of DG sets are as below.				
	(M) Continuous rating of 125 KVA ,BHP not less than 154 BHP (CPCB 4)	1	Nos	1468832	1468832.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
101	Providing & erecting approved make AMF control panel suitable for following size of 3 phase, 415 V., 50 cycles, A.C. diesel generating set complete of scope as detailed below: 1) Power module: A pair of electromechanically interlocked contactors (for mains & generator) Overload relay for generator contactor Neutral contactor for mains and generator Power socket for connections. 2) Control and metering module: Line voltage monitor. Generator voltage monitor Ammeter 3 items attempt start facility. Air circuit breakers/MCB/MCCB of suitable rating for auto/manual operation. Auto/manual switch. Emergency stop push buttons. Manual start push button. frequency meter. Engine hour meter. Two earthing studs. 3) Protection module: The engine shutdown in the unlikely event of Low lube oil pressure High cylinder head temperature. V belt failure. 4) Indicators with alarm Load on generator. 5) Indicators Load on mains Engine fails to start . Emergency stop battery charger. The AMF Panel of following capacity (C) AMF Control Panel for100 KVA/125 KVA3 phase DG Set	1	Nos	120001	120001.00
102	FAÇADE LIGHT - DESIGN ASP ER APPROVAL FROM EIC	20	Nos	18000	360000.00
103	Providing & erecting water cooler having storage capacity 150 Ltr. & cooling capacity 150 Ltr.per hour @ an ambient temp of 45° C. The outlet temp. of the water should drop by 15°C within a hour, The water cooler should be comprising of hermetically sealed compressor, fan motor, condensing unit, water tank surrounded by evaporating, coil, thermostats, relay etc.complete with necessary inlet & outlet connection. The body of water cooler will be made from Stainless Steel.	4	Nos	46187	184748.00

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
104	Supplying and erecting water filter cum purifier with ultra violate technology. (Aquaguard / waterdoc model or equivalent symphony/ crystal/videocon model)	4	Nos	4484	17936.00
	(A) GENERAL DESCRIPTION OF LIFTS.				
105	[1] GEAR LESS LIFT DRIVE comprising of High Starting torque Lift 3 phase 440 V A. C. Permanent Magnet Synchronous motor of proper rating with high efficiency shall be used. [2] Micro processor based / PLC, ACVVVF, vector control drive with encoder feedback closed loop system shall be used for lift car and door operation which shall be full collective selective operation hall call demand response, UP/DOWN hall stops, Main, Up/ Down Contactor with overload and phase reversal relay and safety controls.	1	Nos	1332625	1332625.00
	[3] Car with M S platform with bracings of adequate size and to sustain the impact load cabin + passenger with safety factor of fire for steel and side panels of Stainless steel of sheet of grade 304 duty. Car ceiling will be S.S. finishes with aesthetic appearance with LED ceiling lights. Car flooring shall be of anti skid PVC with choice of colour of engineer in charge. Car doors shall be of stainless steel grade 304, hairline finish with centre opening / telescopic automatic doors. Car panel will also be S.S. 304 finished with emergency stop device, mechanical door safety device, facility of auto/ attended mode. All car panel buttons and all floor switches must be with brail language as per lift act.				

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
	[4] All landing doors must be fire rated for 2 hour shall be fully automatic centre opening/ telescopic opening made of hairline finish steel grade of 304 with key holes and infrared curtains with Unlocking facility from outside [5] Appropriate battery operated emergency light in the car along with alarm switch shall be provided. Also, Emergency Light & Fan should start immediately without any Time Delay as soon as power fails. [6] Digital scrolling indicator system for up-down arrow along with floor position indicator shall be provided inside the car and at all floors. [7] Full height infra red curtain with multiple cross / crossing light beams shall be provided. [8] Automatic Rescue Device (ARD) shall be provided accordingly of passenger capacity with Manual Rescue Operation (Manual Cranking Facility). [9] Audio visual indication in the lift car showing over loading shall be provided such that doors kept open till excess load is removed.				

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
	[10] Spring buffers/PU Buffers shall be provided. [11] Car fan as per passenger capacity with automatic sleep timer shall be provided. [12] Voice annunciator with suitable music shall be provided in lift car. [13] Self diagnostics system for operational and safety parameters shall be provided in control panel. [14] Mechanical over speed governor with governor calibration as per actual site parameters and submission of calibration certificate submission, door key holes in the floor doors, fireman switch shall be provided. [15] Lift machine hoisting arrangement in the lift machine room and monkey ladder for lift pit should be provided by the lift agency, along with the other steel structure works, foundations for the machine etc… [16] In the hoist way fascia plate shall be provided without any extra cost, where ever required as / if directed by engineer in charge. [17] Permanent wiring with necessary safety devices like RCCB in all circuit, Over Voltage Under Voltage protection and THD eliminator in circuit for lift machine room and lift well with proper numbers of light points, with fixtures, exhaust fan and plug points shall be provided by the agency. Only 3 phase Power Supply shall be made available by department in lift machine room. Necessary Earthing as per Lift Act/Rules shall be arranged by Lift Agency.				

Sr no.	Item Description	Qty.	Unit	Rate	Estimated Cost
	[18] Any civil/ electrical works for additional and alteration in lift shaft and machine room related to erection of lift shall be made by lift agency without any extra cost. (granite/marble fixing around all landing door openings are not in lift agency's scope.) [19] Agency has to provide all working drawings and documents and liaison services for obtaining all necessary permission from lift inspector and other authorities. [20] acrylic transparent licence/display A4 size holder in lift car				
	[21] Car Panel Operating Buttons with floor position indicator/buttons must be of Auto Glow type clearly visible when view from inside cabin. [22] For Physically Handicapped person Full Length Handrails of hairline finish steel grade of 304 should be provided at appropriate height on the Rear & Side Wall Panels in Lift Car.				
	Supplying, Erecting, Testing & Commissioning the passenger / stretcher lift having following main features: 13 Passengers, Ground plus 3 upper floors with Rated Speed of 1.0 m/sec., (B) With General Specification attached herewith. Cat.III				
	Total Electrical Work Amount (B)				**24062435.00**
	Say, Total Electrical Work Amount (B)				**24062500.00**

Add. Asst. Engineer
R. M. C.

Dy. Executive Engineer
R. M. C.

ADDL. CITY ENGINEER
Rajkot Muni. Corporation

Signature of Contractor with Seal

[C] CCTV – Audio System

Sr. No.	Item Description	Qty.	Unit	Rate	Estimated Cost
	CCTV Camera				
1	Supply, installing, testing and commissioning 24- Chanel Video/Audio Recording Network Video Recorder, Total 480/400 fps (NTSC/PAL), PTZ Control, Time synchronization between NVR and time server or other NVR as per instruction by EIC/Consultant	4.00	Nos.	28900.00	115600.00
2	Supply, installing, testing and commissioning of 1.3 Mega pixel Dome Camera 1/3" CMOS sensor, 20m IR distance, IP 66, PoE, IPv4/IPv6, ONVIF ver 2.0 with neccesary power supply arrangment suitable for indoor ceiling/surface mounted type as per instruction by EIC/Consultant.	40.00	Nos.	6590.00	263600.00
3	Supply, installing, testing and commissioning of 1.3 Mega pixel bullet Camera 1/3" CMOS sensor, 20m IR distance, IP 66, PoE, IPv4/IPv6, ONVIF ver 2.0 with neccesary power supply arrangment suitable for indoor ceiling/ surface/ wall/ column mounted type as per instruction by EIC/Consultant.	31.00	Nos.	5690.00	176390.00
4	Supply, installing, testing and commissioning of 24 chanel POE switch as per instruction by EIC/Consultant	12.00	Nos.	21850.00	262200.00

5	Supply, installing, testing and commissioning of central management software for Viewing, multi-NVR management, suppoerting all cameras at one single screen and maximum devices management, auto search configuration and status monitoring as per instruction by EIC/Consultant.	1.00	Nos.	32000.00	32000.00
6	Supply, installing, testing and commissioning of 8 TB video surveillance hard disk as per instruction by EIC/Consultant.	4.00	Nos.	30500.00	122000.00
7	Supply, installing, testing and commissioning of 24U rack as per instruction by EIC/Consultant	6.00	Nos.	19000.00	114000.00
8	Supply and connection of 40" LED Monitor as per instruction by EIC/Consultant	2.00	Nos.	35500.00	71000.00
9	Supply, installing, testing and commissioning of CAT-6 cable for computer socket outlets from data switch to computer point laid through raceways/conduits/floor trunks etc. With required termination arrangment to complete the job.(Rates of raceways/conduits/floor trunks shall be excluded.	3,142.00	Mtr.	45.00	141390.00

10	Supplying and erecting approved make online Un-interruptible Power Supply system comprising flat cum-boost charger with IGBT base rectifier & Inverter & sealed maintenance free SMF batteries. The charger having operating capacity for input 160-270V AC & inverter having output 230V,50 Hz Ac with 0.8 load power factor with battery, over/under voltage output with over load & short circuit protection equipment. The system housed in CRC sheet duly powder coated paint with following power backup.with MS painted batteries stand, 10% Overload capacity for momentary load.(B) 2KVA with 1Hr Backup	1.00	Nos.	39662.00	39662.00
11	Supply, Installation, Testing and Commision of Computer System of All in One Desktop type includes 21.5" Screen Moniter , Core i3 (7th Gen)/4 GB DDR4/1 TB Hard disk Processor, with wire less key board and wire less mouse and including all neccesary items which required and as per instruction by EIC/Consultant.	1.00	Nos.	55000.00	55000.00
	Audio System				

12	Supplying & erecting Philips Ahuja make or equivalent Amplifier having following specification:Power Output :250W (RMS) (300W Max.)inputs : 6 Misc. & 2 Aux.frequency Response :50-1500HZ I3dbTone Controls :Cut & Boost typeLED Meter :5 LED ArraysThe amplifier suitable to operate 240V A.C.& 24volt D.C. (Battery) with automatic changeover from AC to Battery operation, duly protected by wrong Battery Polarity connections.	3.00	Nos.	11187.00	33561.00
13	supplying and erecting wall mount speaker with rated power of 30 watt/power tapping 30/15/7.5 watt available,opening angle 180 degree H * 77 degree V ,sound pressure level 88 dB ,frequency response of 70Hz to 20KHz	16.00	Nos.	9156.00	146496.00
14	Supplying, installing and testing approved make microphone for All purpose, with frequency response of 100 - 11000 Hz, having sensitivity 2.2mv / Pa & impedance 500 Ohms (LO- Z) supplied with quick detachable holder, 6 mtr twin core cable & 3 pin XLR connector.	6.00	Nos.	1500.00	9000.00
	Total CCTV work amount				**1,581,899.00**
	Say Total CCTV work amount				**1,582,000.00**

Add. Asst. Engineer
R. M. C.

Dy. Executive Engineer
R. M. C.

ADDL. CITY ENGINEER
Rajkot Muni. Corporation

Signature of Contractor with Seal

[D] Fire Works

Sr. No.	Schedule of Iteams	Qty	Unit	Rate	Estimated Cost
1	Supplying, installation, testing and commissioning of **horizontal centrifugal -ve end suction monoblock type Main Pump set as per requirement fire of chief officer of following features and capacity,** having 70 Mtr Head with **1620 LPM, Delivery pipe 100 mm (4'')** with 15 mtr. cable as per HP capacity of pump set and with all accessories required. Rate includes base frame, Coupling, cover (MS), Coupling guard, Foundation and foundation bolts in case of monoblock pump set	1.00	Each	196520.00	196520.00
2	Supplying, installation, testing and commissioning of **horizontal centrifugal -ve end suction monoblock type Jockey Pump set as per requirement fire of chief officer of following features and capacity,** having 70 Mtr Head with **180LPM, Delivery pipe 100 mm (4'')** with 15 mtr. cable as per HP capacity of pump set and with all accessories required. Rate includes base frame, Coupling, cover (MS), Coupling guard, Foundation and foundation bolts in case of monoblock pump set	1.00	Each	110000.00	110000.00

Sr. No.	Schedule of Iteams	Qty	Unit	Rate	Estimated Cost
3	(A) Supplying, installation, testing and commissioning of diesel engine driven main fire pump suitable for automatic operation and consisting of following, complete in all respects, as required: (Diesel Driven Pump) (B) Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal conforming to IS 1520. (C) Suitable HP, 1500 RPM water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12/24 volts electric starting equipment, diesel tank, exhaust pipe extended upto 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required. (D) M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required. (E) Suitable cement concrete foundation duly plastered and with anti vibration pads. Note:The head of the pump is selected in a manner so as to give a minimum 3.5kgf/cm2 pressure at the highest/farthest point wwith 80 m head and 1620 LPM.	1.00	Each	596786.00	596786.00
4	Supplying, installation, testing and commissioning of 4**-way Fire bridge inlet** connection made of Ci body with 4 Nos. of inbuilt NRV (Body type) with blank Cap & Chain as per IS:904	1.00	Each	7250.00	7250.00
5	Supplying, installation, testing and commissioning of **pressure switch & presure guage**	2.00	Each	4920.00	9840.00

Sr. No.	Schedule of Iteams	Qty	Unit	Rate	Estimated Cost
6	**Providing and fixing of ABC store pressure type fire extinguisher suitable for extinguising A, B and C Fires Having capacity 6 Kg.** Confirms to IS:15683:2006 with Mono Amonium Phosphate (MAP) Dry Chemical Powder, Brass Chrome cap, Fitted with 500 mm long hose, with wall mounting bracket. Detail specification of Fire Extinguisher are as per attached specification Annexure-I. Necessary certificate and guarantee must be given by Manufacture / Dealer on their letter head.	25.00	Each	1971.00	49275.00
7	**Providing and fixing of CO2 type Fire Extinguisher of capacity 4.5 kg.** filled with Co2 Gas as per IS:15222 with controll discharge mechanis, fitted with Hose & Horn applicable on Class B fire rating 21B confirms to IS:15683 bearing ISI mark. Co2 cylinder as per IS:7285. Write building name and block no. on each extinguiser. Detail specification of Fire Extinguisher are as per attached specification Annexure-I. Necessary certificate and guarantee must be given by Manufacture / Dealer on their letter head.	25.00	Each	4850.00	121250.00
8	**Providing and fixing of CO2 type Fire Extinguisher of capacity 9 kg.** filled with Co2 Gas as per IS:15222 with controll discharge mechanis, fitted with Hose & Horn applicable on Class B fire rating 21B confirms to IS:15683 bearing ISI mark. Co2 cylinder as per IS:7285. Write building name and block no. on each extinguiser. Detail specification of Fire Extinguisher are as per attached specification Annexure-I. Necessary certificate and guarantee must be given by Manufacture / Dealer on their letter head.	2.00	Each	10250.00	20500.00

Sr. No.	Schedule of Iteams	Qty	Unit	Rate	Estimated Cost
9	**Getting provisional NOC and Final NOC for Fire Hydrant, Fire Extinguisher** from local fire authority or any other relevant statutory authority at initial and required various other stages of construction work, including preparation of reports/drawings as per fire authority requirement.	1.00	Job	75000.00	75000.00
10	Agency has to give One live demonstration of fire Mock drill for fire fighting with minimum 01 no. CO2 and 01 no. ABC type fire extinguisher at the time of handing over this system to the Police department and another at the time of releasing final Security deposit. The necessary certificate / photographs for that must be submitted.	1.00	Each	10000.00	10000.00
11	Providing, laying, testing & commissioning of **'C' class heavy duty MS pipe** conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required :				
11.1	100 mm dia.	450.00	Rmt	1770.00	796500.00
11.2	80 mm dia.	12.00	Rmt	1220.00	14640.00
12	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required :				
12.1	100 mm dia	7.00	Nos	4910.00	34370.00
13	Providing, installation, testing and commissioning of non-return valve of following sizes confirming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :				
13.1	100 mm dia	7.00	Nos	4950.00	34650.00

Sr. No.	Schedule of Iteams	Qty	Unit	Rate	Estimated Cost
14	Supplying and fixing **single headed internal hydrant valve** with instantaneous Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked conforming to IS 5290 (Type -A) with blank Stainless Steel cap, Orific Plate and chain as required. With all necessary required tools and hardware.	14.00	Nos	7450.00	104300.00
15	Supplying & fixing,testing & commissioning of 20 mm nominal internal diameter size SS (Grade 304) **Nozzle** conforming to IS 903 suitable for instantaneous connection to 63 mm dia hose pipe coupling etc.as required	14.00	Nos	2450.00	34300.00
16	Providing and fixing 63 mm dia reinforced rubber lined RRL fire hose of approved brand conforming to IS 636 type A having brushing pressure of 37.20 Kg/cm2 and 1 Nos of ISI marked of **15 mtr length** fitting with necessary gun metal 63 mm delivered **hose pipe** with 63 mm dia. Male and female gun metal couplings duly binded with GI wire, rivets etc. conforming to IS 636 (type-A) as required.	28.00	Nos	4650.00	130200.00
17	Providing, fixing of Weather proof standard **fire hose cabinet** (750 mm x 600 mm x 300 mm deep) made out of 18 SWG powder coated M.S. sheet having single or double opening glazed (4.0 mm thick glass) shutter including necessary locking arrangement by allen key, stove enamelled Fire red finish (as per IS : 5, shade no. 536) with " Fire Hose" marked on front, suitable for housing 2 nos. 15m long 63 mm dia Hose pipe, 1 No. branch pipe & nozzle spanner (For External Hydrant).	14.00	Nos	3250.00	45500.00

Sr. No.	Schedule of Iteams	Qty	Unit	Rate	Estimated Cost
18	Supplying and fixing **First Aid hose reel** with MS construction spray painted in post office red, conforming to IS 884 with upto date amendments, complete with the following as required. 30m long 25mm (nominal internal dia and (32mm Outer dia) water hose thermoplastic (textile reinforced) type-2 as per IS: 12585 25mm (nominal internal dia) S.S.Shut up valve & nozzle.Drum and brackets for fixing the equipments on wall. Connections from riser with stop valve (GM) & M.S. pipe.	14.00	Nos	6321.00	88494.00
19	Supply, Installation, Testing & commissioning of 25mm dia Brass ISI mark **Ball Valve** with **25mm dia** nipple as complete as directed	17.00	Set	1320.00	22440.00
20	Supplying, installation, testing & commissioning sector addresable type panel suitable for following zones, complete with visual indications for short circuit fault, open circuit fault, fire condition and all other standard facilities as per IS:2189 with mimic diagram for all area/zone covered, complete with all connections, interconnections as required.-2 loop	1.00	Nos	176580.00	176580.00
21	Repeater panel-addressable type	1.00	Nos	76520.00	76520.00
22	Supplying, installation, testing & commissioning of addresable type manual call Point of ABS type in surface/recess push button etc. as required.	8.00	Nos	2650.00	21200.00
23	Supplying, installation, testing & commissioning addresable type fire alarm sounder with facility to make announcement, mounted in A.B.S./Msbox(16 SWG) box with hinged cover plate & suitable for operation with amplifier i/c line matching transformer etc. complete as required.	8.00	Nos	2450.00	19600.00

Sr. No.	Schedule of Iteams	Qty	Unit	Rate	Estimated Cost
24	INCOMING 400A, 50kA 4 Pole MCCB, Ics=100% Icu rating Digital Voltmeter 0-500V with selector switch Ammeter (0-400 A) with selector swtich & CTs etc. LED type RYB phase indicating lamps, ON, OFF, trip indicating lamps Set of Copper Bus Bar 500A OUTGOING (Note: All outgoing feeders for pumps should have digital Ammeter with selector switches, and LED type ON, OFF, trip indicating lamps) MAIN FIRE PUMP 200 A, 50KA TPN MCCB, Ics 100% Icu, with fully automatic Star/Delta starter suitable for pump with overload protection, current sensing type single phase preventor complete with all acceessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation. JOCKEY PUMP 100 A, 50KA TPN MCCB, Ics 100% Icu, with suitable HP fully. automatic Star/Delta starter with overload protection, current sensing type single phase preventor complete with all acceessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation. SYSTEM CONTROLLER Designing, Supply, Installation, Testing and commissioning of system controller to control operation of main electric fire pump, diesel pump. Pressurization pump, Terrace pump in sequence as per specification consisting of relays, timers. Sensors, annunciation window for fault indication, complete as per specifications.	1.00	Nos	116500.00	116500.00
25	Supplying, installation, testing & commissioning of addresable type Smoke Detector with builtin LED and mounting base complete with all connections etc. as required	220.00	Nos	3690.00	811800.00

Sr. No.	Schedule of Iteams	Qty	Unit	Rate	Estimated Cost
26	Supplying, installation, testing & commissioning of addresable type heat detector operating at 54°C/57°C with rate of rise cum fixed tempreature (dual thermistor) type with mounting base complete with all connection etc. as required.	2.00	Nos	3990.00	7980.00
27	Supplying, installation, testing & commissioning of addresable type Beam Detector with builtin LED and mounting base complete with all connections etc. as required	2.00	Nos	36500.00	73000.00
28	Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected in / on wall / ceiling with 2.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (a) with medium class Rigid PVC pipe and accessories(a) 4 wire 6 sq. mm	45.00	RMT	246.00	11070.00
29	Supplying & erecting XLPE(IS:7098)(I)-88 ISI unarmoured copper cable 1.1 KV grade to be erected as directed of following size. (F) 3 core 4 Sq. mm	45.00	RMT	185.00	8325.00
30	Mains with 1.1 KV grade FRLS PVC insulated ISI marked stranded Copper conductor wire in following type of pipe to be erected concealed in /flushed on wall/ceiling, with 1.5 sq. mm copper conductor FRLS PVC insulated stranded wire of green colour for earth continuity of following size (a) with medium class Rigid PVC pipe and accessories (a) 2 wire 1.5 sq. mm	2600.00	RMT	59.00	153400.00

Sr. No.	Schedule of Iteams	Qty	Unit	Rate	Estimated Cost
31	Providing & erecting 415 V MCB Four Pole for Motor & Inductive Load (C Curve) having 10KA breaking capacity & confirms to IS :8828 in existing box having following capacity (c)63 Amp. Cat.III	3.00	Nos	730.00	2190.00
	Total Fire Safty System Amount				**3979980.00**
	Say Total Fire Safty System Amount ...				**3980000.00**

Add. Asst. Engineer
R. M. C.

Dy. Executive Engineer
R. M. C.

ADDL. CITY ENGINEER
Rajkot Muni. Corporation

Signature of Contractor with Seal

[E] Air Conditioner System

Sr. No.	Description	Unit	QTY	Cost of Materials	Cost of Labour	Total	GRAND TOTAL
1	Providing and erecting approved make ductable split Air Conditioning unit each consist of remote located condensing unit and an evaporating unit complete with interconnecting insulated refrigerant piping up to 10 RMT. rigid PVC, drain piping of 10 kg / cm2 dully insulated with nitrile rubber insulation of 10 RMT with ECO Friendly Green gas. The condensing unit is complete with hermetically sealed scroll compressor & condenser unit which effectively achieves heat rejection by utilizing air of fan and coil type condenser. The evaporating unit will be complete with DX evaporator centrifugal blower, blower motor along with microprocessor biased remote controller with memory backup etc.						
1	(B) For 8.5 Ton	Ea.	RO	155657.00	6679.00	162336.00	
1	(C) For 11 Ton	Ea.	29.00	203032.00	8899.00	211931.00	6145999.00
1	(D) For 16.5 Ton	Ea.	RO	284243.00	13349.00	297592.00	

Sr. No.	Description	Unit	QTY	Cost of Materials	Cost of Labour	Total	GRAND TOTAL
2	Providing and erecting approved make Cassette type split air-conditioning unit consisting of condensing unit with fan motor, hermetically sealed scroll/rotary compressor with accessories etc. duly connected separately erected evaporating unit and blower motor with its accessories by Eco friendly Green gas charging & Internal copper wiring & Remote control (3 star and above of current year) with necessary core cutting.						
2	(D) for 3 ton capacity-3Phase	Ea.	RO	73907.00	3051.00	76958.00	
2	(E) for 4 ton capacity-3Phase	Ea.	7.00	83360.00	3051.00	86411.00	604877.00
3	Providing and erecting Inverter based approved make split air-conditioning unit consisting of condensing unit with variable speed fan motor, inverter type hermetically sealed rotary compressor with accessories etc. duly connected separately erected evaporating unit and blower motor with its accessories by means of extra supplied proper insulated copper tubing,drain PVC pipes suitable for (cost includes Eco Friendly green gas charging and 15A plug top & Remote Control & MS Stand) with necessary core cutting.(1)For 3 Star Rating of current year						
3	(B) for 1.5 ton capacity	Ea.	8.00	42500.00	1500.00	44000.00	352000.00
3	(C) for 2.0 ton capacity	Ea.	6.00	53000.00	1500.00	54500.00	327000.00

Sr. No.	Description	Unit	QTY	Cost of Materials	Cost of Labour	Total	GRAND TOTAL
4	Supplying and erecting insulated pair of soft copper tubing open or concealed including power and control cable,necessary PVC drain pipes						
4	for AC machine up to 4 TR capacity	Rmt.	375.00	1590.00	0.00	1590.00	596250.00
4	for AC machine from 8.5 to 16.5 TR Capacity	Rmt.	875.00	2931.00	0.00	2931.00	2564625.00
5	Supplying and installing MS angle , powder coated / Painted standard type of wall/floor stand mount for outdoor unit of split AC of following capacity, erected with necessary hardware materials as directed.						
5	(B) 35mm*35mm*5mm thick M.S angle suitable for above 2 TR to 4 TR Capacity of ac machine	Ea.	17.00	1017.00	128.00	1145.00	19465.00
6	Supply, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required.						
6	(A) Thickness 0.63 mm sheet (22 Gauge)	Sq.Mtr.	1400.00	924.00	187.00	1111.00	1555400.00
6	(B) Thickness 0.80 mm sheet (20 Gauge)	Sq.Mtr.	450.00	1077.00	212.00	1289.00	580050.00

Sr. No.	Description	Unit	QTY	Cost of Materials	Cost of Labour	Total	GRAND TOTAL
7	Supplying & fixing of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers complete as per specifications and size & shape as per site requirement and approved design.	Sq.Mtr.	65.00	7907.00	840.00	8747.00	568555.00
8	Supplying & fixing of powder coated extruded aluminium Supply/Return Air Grills without volume control dampers complete as per specifications and size & shape as per site requirement and approved design.	Sq.Mtr.	25.00	5136.00	840.00	5976.00	149400.00
9	Supply and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m³, with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminum sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound etc. complete as required and as per specifications.	Sq.Mtr.	400.00	611.00	85.00	696.00	278400.00

Sr. No.	Description	Unit	QTY	Cost of Materials	Cost of Labour	Total	GRAND TOTAL
10	Supplying and fixing of following thickness duly laminated aluminum foil of mat finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying suitable adhesive for Nitrile rubber. The joints shall be sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required.						
10	(A) 19mm	Sq.Mtr.	RO	653.00	85.00	738.00	
10	(B) 25mm	Sq.Mtr.	1400.00	839.00	85.00	924.00	1293600.00
11	Supply of AMCA-210 & 300 / ISO 5801 /DIN 2463 & 45635 certified axial flow fans(FOR FRESH AIR) complete with all accessories , suitable for installing in any position in Horizontal or Vertical. The motor shall be suitable for 415 V +/-10% volts 3 phase, 50 cycle, AC supply , TEFC, IE-3 motor. Fan and fan's motor shall be suitable to handle high temperature of smoke at 250 deg C for 2 hrs. Fan Efficiency shall not be less than 70% .Bird Screen shall be supplied at one side of axial fan.Accessories such as Flexible connections, bird screen, gravity louver, isolators shall be supplied along with the fan. 2 METER OF FLEXIBLE PIPE IN INSIDE AND OUTSIDE TO BE CONSIDERED IN THIS ITEM						

Sr. No.	Description	Unit	QTY	Cost of Materials	Cost of Labour	Total	GRAND TOTAL
	900 CFM at 30PA	Ea.	9.00	53000.00	3500.00	56500.00	508500.00
	150 CFM at 20PA	Ea.	3.00	200000.00	3000.00	203000.00	609000.00
	GRAND TOTAL						**16153121.00**
	SAY GRAND TOTAL						**16153200.00**

Add. Asst. Engineer
R. M. C.

Dy. Executive Engineer
R. M. C.

ADDL. CITY ENGINEER
Rajkot Muni. Corporation

Signature of Contractor with Seal

રાજકોટ મહાનગર સેવાસદન

ડો. આંબેડકર ભવન, ઢેબરભાઈ રોડ, રાજકોટ – ૩૬૦ ૦૦૧.

વેબસાઈટ : www.rmc.gov.in

રા.મ્યુ.કો./વીજી.ટેક./જા. નં. ૧૦૨ ૨૯/૮/૧૮ તા. ૨૯/૮/૨૦૧૮

પરિપત્ર:-

- રાજકોટ મહાનગરપાલિકામાં ત્રણ ઝોન (ઇસ્ટ, સેન્ટ્રલ, વેસ્ટ) માં ઝોનલ કામમાં કે ટેન્ડરથી થતા કામમાં પેવર બ્લોકની કામગીરી કરવામાં આવે છે. જેથી, ક્વોલીટી કન્ટ્રોલ માટે પેવર બ્લોકની કામગીરીમાં વપરાશ કરવામાં આવતા પેવર બ્લોકનું ટેસ્ટીંગ કરવું જરૂરી હોય, વોર્ડમાં ઝોનલ કામ, ટેન્ડર કામ તેમજ વિવિધ શાખા હસ્તક ચાલતા પ્રોજેક્ટ કામમાં વપરાશ કરવામાં આવતા તમામ પ્રકારના પેવર બ્લોકના કામમાં કામ કરાવનાર RMC ટેકનીકલ ટીમ દ્વારા IS 15658:2006 મુજબ Government લેબોરેટરી કે Government માન્ય લેબોરેટરીમાં હાજરીમાં ફરજીયાતપણે ટેસ્ટીંગ કરાવવાનું રહેશે.
- આ ઉપરાંત, રાજકોટ મહાનગરપાલિકાની, વિવિધ શાખા હસ્તક ચાલતાં બાંધકામ તથા રસ્તાકામને લગત, દરેક મહત્વના પ્રોજેક્ટના અગત્યનાં તબક્કે કામગીરી કરાવનાર પ્રોજેક્ટ એક્ઝીક્યુશન ટેકનીકલ ટીમ દ્વારા આગળના દિવસે વિજીલન્સ (ટેક.) ટીમને SMS/Whatsapp થી જાણ કરવામાં આવે છે. તે જ રીતે પેવર બ્લોક બાબતે RMC એક્ઝીક્યુશન ટેકનીકલ ટીમ દ્વારા હાલ ચાલુ હોય તેમજ હવે પછી થનાર તમામ પેવર બ્લોકના કામો માટે આગળના દિવસે વિજીલન્સ (ટેક.) ટીમને SMS/Whatsapp થી જાણ કરવાની રહેશે. જે અન્વયે વીજીલન્સ શાખા (ટેક.) દ્વારા રેન્ડમ સેમ્પલીંગ કરી, IS 15658:2006 મુજબ Government લેબોરેટરી કે Government માન્ય લેબોરેટરીમાં હાજરીમાં ફરજીયાતપણે ટેસ્ટીંગ કરાવી, અત્રે રીપોર્ટ કરવાનો રહેશે.

ઉપરોક્ત બાબતની અમલવારી તાત્કાલિક અસરથી ચુસ્તપણે કરવાની રહેશે.

કમિશ્નર
રાજકોટ મહાનગરપાલિકા

નકલ રવાના (જાણ તથા અમલવારી અર્થે)
- નાયબ કમિશનરશ્રી (ઇસ્ટ, સેન્ટ્રલ, વેસ્ટ-ઝોન)

નકલ રવાના (અમલવારી અર્થે)-
- તમામ સીટી એન્જીનીયરશ્રી, એડી. સીટી એન્જીનીયરશ્રી, એક્ઝીક્યુટીવ એન્જીનીયરશ્રી

2018-8-29 12:55

રાજકોટ મહાનગરપાલિકા

ડો. આંબેડકર ભવન, ઢેબર રોડ, રાજકોટ – ૩૬૦૧૧૦.
વેબસાઈટ : www.rmc.gov.in

આર.એમ.સી./સી./ તા.૨૩/૧૨/૨૦૧૮

પરીપત્ર-: રા.મ્યુ.કો./વિજી./જા.નં. ૧૮૦ ૨૩/૧૨/૨૦૧૮

- રાજકોટ મહાનગરપાલિકામાં ત્રણ ઝોન (ઇસ્ટ, સેન્ટ્રલ, વેસ્ટ) માં ઝોનલ કામમાં કે ટેન્ડરથી થતા કામમાં પેવર બ્લોકની કામગીરી કરવામાં આવે છે. જેથી, ક્વોલીટી કન્ટ્રોલ માટે પેવર બ્લોકની કામગીરીમાં વપરાશ કરવામાં આવતા પેવર બ્લોકનું ટેસ્ટીંગ કરવું જરૂરી હોય, રા.મ્યુ.કો./વીજી. (ટેક.)/જા.નં.-૧૦૨, તા.૨૯/૦૮/૨૦૧૮ થી વોર્ડમાં ઝોનલ કામ, ટેન્ડર કામ તેમજ વિવિધ શાખા હસ્તક ચાલતા પ્રોજેક્ટ કામમાં વપરાશ કરવામાં આવતા તમામ પ્રકારના પેવર બ્લોકના કામમાં ફરજીયાતપણે ટેસ્ટીંગ કરાવવા માટે પરીપત્ર કરવામાં આવેલ છે.
- જે પરીપત્ર અન્વયે આ પરીપત્રથી હવે પછી કરવાનાં થતા તમામ ટેન્ડર કામ તેમજ નવા ઝોનલ કોન્ટ્રાક્ટના કામોમાં નીચે પ્રમાણે યુસ્ત અમલવારી કરવાની રહેશે.
- આ પરીપત્ર પહેલાના કોઇપણ ઝોનલ કે ટેન્ડર કામ માટે જે તે Grade ની સાપેક્ષ પરિણામ ન મળે તો જે તે મળેલ પરિણામ પ્રમાણે Rate Reduce કરવાનાં રહેશે.
- કોઇપણ Grade ના પેવર બ્લોક માટે Compressive Strength નું સરેરાશ પરિણામ 10% કરતા વધારે ઓછું (દા.ત. M-30 Grade માટે Compressive Strength 27 N/mm² થી ઓછી) મળશે તો તે પેવરબ્લોક Reject કરવામાં આવશે એટલે કે તેમનું Payment કરવામાં આવશે નહિ.
- કોઇપણ Grade ના પેવર બ્લોક માટે Compressive Strength નું સરેરાશ પરિણામ 10% ની મર્યાદામાં ઓછું (દા.ત. M-30 Grade માટે Average Compressive Strength 27 N/mm² થી 29.99 N/mm² ની વચ્ચે) મળશે તો તે પેવરબ્લોક માટે Minimum 5 % તેમજ Maximum 10% મળેલ Average Compressive Strength પ્રમાણે Rate Reduce કરવાનાં રહેશે.
- કોઇપણ Grade ના પેવર બ્લોક માટે Water Absorption નું સરેરાશ પરિણામ 6% થી વધારે આવશે તો તે પેવરબ્લોક Reject કરવામાં આવશે એટલે કે તેમનું Payment કરવાનું થશે નહિ.

Compressive Strength માટે કુલ ૮ પેવર બ્લોકનું ટેસ્ટીંગ કરવાનું રહેશે જે ૮ પેવર બ્લોક (ગ્રેડ મુજબ સરેરાશ પરિણામ મળશે તો પણ) પૈકી જો ૧ થી ૨ Individual Sample નું પરિણામ ૪૫% કરતા ઓછું મળશે તો 10% Rate Reduce કરવામાં આવશે તેમજ ૮ પેવર બ્લોક પૈકી જો ૨ થી વધારે Individual Sample નું પરિણામ ૪૫% કરતા ઓછું મળશે તો તે પેવરબ્લોક Reject કરવામાં આવશે એટલે કે તેમનું Payment કરવામાં આવશે નહિ.

- ૧૨.૦૦ મી. કે તેથી મોટા રોડના Side Shoulder માટે M-30 Grade (ISI Mark) Rubber Mould Paving Block વાપરવાના રહેશે. ૧૨.૦૦ મી. થી નાની પહોળાઈના રસ્તાઓ પર Side Shoulder માં M-30 Grade (ISI Mark) Non Rubber Mould Paving Block વાપરવાના રહેશે.
- પહોળાઈમાં ૫.૦૦ મી. કે તેથી ઓછી પહોળાઈ વાળી શેરી હોય ત્યાં જ આખી શેરીમાં Paving Block ની કામગીરી કરી શકાશે.જનભાગીદારી યોજના હોય ત્યાં ૫.૦૦ મી. કે તેથી વધુ પહોળાઈ વાળી શેરીમાં Rubber Mould Paving Block ની કામગીરી કરી શકાશે.
- આ પરીપત્રને ટેન્ડરના એક ભાગ તરીકે રાખવાનો રહેશે.

ઉપરોક્ત બાબતની અમલવારી તાત્કાલિક અસરથી યુસ્તપણે કરવાની રહેશે.

કમિશ્નર
રાજકોટ મહાનગરપાલિકા

<u>નકલ રવાના (જાણ તથા અમલવારી અર્થે)</u>

- નાયબ કમિશ્નરશ્રી (ઇસ્ટ, સેન્ટ્રલ, વેસ્ટ ઝોન)

<u>નકલ રવાના (અમલવારી અર્થે)</u>

- તમામ સીટી એન્જીનીયરશ્રી, એડી. સીટી એન્જીનીયરશ્રી, એક્ઝીક્યુટીવ એન્જીનીયરશ્રી, એન્વાયરમેન્ટ એન્જીનીયરશ્રી (S.W.M.)
- ડી.ઈ.ઈ.શ્રી (વીજીલન્સ શાખા – ટેક.)

રાજકોટ મહાનગરપાલિકા

ડો. આંબેડકર ભવન, ઢેબર રોડ, રાજકોટ – ૩૬૦૧૧૦.

વેબસાઈટ : www.rmc.gov.in

આર.એમ.સી./સી./ રા.મ્યુ.કો./વિજી./જા.નં. ૬૭ તા. ૧૮/૦૭/૨૦૧૯

સંદર્ભ:- પરીપત્ર રા.મ્યુ.કો./વીજી./જા.નં.-૧૮૦, તા.૨૭/૧૨/૨૦૧૮.

સુધારા પરીપત્ર-:

- રાજકોટ મહાનગરપાલિકામાં ત્રણ ઝોન (ઇસ્ટ, સેન્ટ્રલ, વેસ્ટ) માં ઝોનલ કામમાં કે ટેન્ડરથી થતા કામમાં પેવર બ્લોકની કામગીરી કરવામાં આવે છે. જેથી, ક્વોલીટી જળવાય તે માટે પેવર બ્લોક માટે સંદર્ભથી પરીપત્ર કરવામાં આવેલ. જેના બદલે નીચે પ્રમાણે સુધારા પરીપત્ર કરવામાં આવે છે.
- સંદર્ભમાં દર્શાવેલ પરીપત્ર પહેલાના કોઇપણ ઝોનલ કે ટેન્ડર કામ માટે પરિણામ ન મળે તો જે તે મળેલ પરિણામ પ્રમાણે Rate Reduce કરવાનાં રહેશે.
- સંદર્ભમાં દર્શાવેલ પરીપત્ર પછીના તમામ નવા ટેન્ડર કામ તેમજ નવા ઝોનલ કોન્ટ્રાક્ટના કામોમાં નીચે પ્રમાણે યુસ્ત અમલવારી કરવાની રહેશે.
- કોઇપણ Grade ના પેવર બ્લોક માટે Compressive Strength નું સરેરાશ પરિણામ 10% કરતા વધારે ઓછું (દા.ત. M-30 Grade માટે Compressive Strength 27 N/mm^2 થી ઓછી) મળશે તો તે પેવરબ્લોક Reject કરવામાં આવશે એટલે કે તેમનું Payment કરવામાં આવશે નહિ.
- કોઇપણ Grade ના પેવર બ્લોક માટે Compressive Strength નું સરેરાશ પરિણામ 10% ની મર્યાદામાં ઓછું (દા.ત. M-30 Grade માટે Average Compressive Strength 27 N/mm^2 થી 29.99 N/mm^2 ની વચ્ચે) મળશે તો તે પેવરબ્લોક માટે Minimum 5 % તેમજ Maximum 10% મળેલ Average Compressive Strength પ્રમાણે Rate Reduce કરવાનાં રહેશે.
- કોઇપણ Grade ના પેવર બ્લોક માટે Water Absorption નું સરેરાશ પરિણામ 6% વધુ 7% સુધી મળે તો 10% Rate Reduce કરવા, તેમજ Water Absorption નું પરિણામ 7% થી વધુ 8% સુધી મળે તો 25% Rate Reduce કરવા, તેમજ 8% થી વધુ Water Absorption નું પરિણામ મળે તો તે પેવરબ્લોક Reject કરવામાં આવશે એટલે કે તેમનું Payment કરવાનું થશે નહિ.

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- Compressive Strength માટે કુલ ૮ પેવર બ્લોકનું ટેસ્ટીંગ કરવાનું રહેશે જે ૮ પેવર બ્લોક (ગ્રેડ મુજબ સરેરાશ પરિણામ મળશે તો પણ) પૈકી જો ૧ થી ૨ Individual Sample નું પરિણામ 85% કરતા ઓછું મળશે તો 10% Rate Reduce કરવામાં આવશે તેમજ ૮ પેવર બ્લોક પૈકી જો ૨ થી વધારે Individual Sample નું પરિણામ 85% કરતા ઓછું મળશે તો તે પેવરબ્લોક Reject કરવામાં આવશે એટલે કે તેમનું Payment કરવામાં આવશે નહિ.
- આ ઉપરાંત ભવિષ્યમાં પેવીંગ બ્લોકના કામોમાં IS:15658 (2006) મુજબ વધુ પ્રમાણમાં જરૂર કરતા ઓછા પરિણામ મળતા હોવાનું જાણમાં આવશે, ક્વોલીટી જળવાતી નહિ જણાય તો, સંદર્ભના પરીપત્ર પ્રમાણેની જોગવાઈ ફરીથી લાગુ પાડવામાં આવશે.
- ૧૨.૦૦ મી. કે તેથી મોટા રોડના Side Shoulder માટે M-30 Grade (ISI Mark) Rubber Mould Paving Block વાપરવાના રહેશે. ૧૨.૦૦ મી. થી નાની પહોળાઈના રસ્તાઓ પર Side Shoulder માં M-30 Grade (ISI Mark) Non Rubber Mould Paving Block વાપરવાના રહેશે.
- પહોળાઈમાં ૫.૦૦ મી. કે તેથી ઓછી પહોળાઈ વાળી શેરી હોય ત્યાં જ આખી શેરીમાં Paving Block ની કામગીરી કરી શકાશે.જનભાગીદારી યોજના હોય ત્યાં ૫.૦૦ મી. કે તેથી વધુ પહોળાઈ વાળી શેરીમાં Rubber Mould Paving Block ની કામગીરી કરી શકાશે.
- આ પરીપત્રને ટેન્ડરના એક ભાગ તરીકે રાખવાનો રહેશે.

ઉપરોક્ત બાબતની અમલવારી તાત્કાલિક અસરથી ચુસ્તપણે કરવાની રહેશે.

કમિશ્નર
રાજકોટ મહાનગરપાલિકા

નકલ રવાના (જાણ તથા અમલવારી અર્થે)

- નાયબ કમિશ્નરશ્રી (ઇસ્ટ, સેન્ટ્રલ, વેસ્ટ ઝોન)

નકલ રવાના (અમલવારી અર્થે)

- તમામ સીટી એન્જીનીયરશ્રી, એડી. સીટી એન્જીનીયરશ્રી, એક્ઝીક્યુટીવ એન્જીનીયરશ્રી, એન્વાયરમેન્ટ એન્જીનીયરશ્રી (S.W.M.)
- ડી.ઈ.ઈ.શ્રી (વીજીલન્સ શાખા - ટેક.)

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રાજકોટ મહાનગરપાલિકા

ડો. આંબેડકર ભવન, ઢેબરભાઈ રોડ, રાજકોટ - ૩૬૦ ૦૦૧.
વેબસાઈટ : www.rmc.gov.in

આર.એમ.સી./સી./વીજી.(ટેક.)/જા.નં.- ૨૩૧ તા. ૧૧/૦૩/૨૦૨૨

પરીપત્ર-:

રાજકોટ મહાનગરપાલિકા અને RSCDL ખાતે ટેન્ડરથી થતા કામમાં સિમેન્ટ કોન્કીટની કામગીરી કરવામાં આવે છે. આ કામોમાં ક્વોલીટી કન્ટ્રોલ જળવાઈ રહે તે માટે નીચે દર્શાવેલ દર્શાવ્યા મુજબ જુદા જુદા સિમેન્ટ કોન્કીટ ગ્રેડ વાઈઝ મીનીમમ સિમેન્ટ કન્ટેન્ટના ધોરણો અનુસરવા અને તેનો સમાવેશ ટેન્ડર ડોક્યુમેન્ટમાં કરવા આથી હુકમ કરવામાં આવે છે.

(અ)	NABL માન્ય લેબ દ્વારા IS, IRC કે MORTH મુજબ તૈયાર કરાયેલ સિમેન્ટ કોન્કીટ મીક્સ ડીઝાઈન રીપોર્ટ મુજબ કિગ્રા સિમેન્ટ કન્ટેન્ટ પ્રતિ ઘનમીટર
(બ)	નીચે દશાવેલ ટેબલ મુજબ મીનીમમ કિગ્રા સિમેન્ટ કન્ટેન્ટ પ્રતિ ઘનમીટર

Sr. No.	Cement Concrete Grade	28 Days Strength in N/mm^2	Minimum Cement in Kg
1	M-7.5 for PCC Work	7.5 N/mm^2	160 Kg
2	M-10 for PCC Work	10 N/mm^2	220 Kg
3	M-15 for PCC Work	15 N/mm^2	290 Kg
4	M-20 for RCC Work	20 N/mm^2	360 Kg
5	M-25 for RCC Work	25 N/mm^2	380 Kg
6	M-30 for RCC Work	30 N/mm^2	410 Kg
7	M-35 for RCC Work	35 N/mm^2	425 Kg
8	M-40 for RCC Work	40 N/mm^2	440 Kg
9	M-45 for RCC Work	45 N/mm^2	450 Kg

ઉપરોક્ત (અ) અને (બ) પૈકી જે વધુ હોય, તે સિમેન્ટ કન્ટેન્ટ ને ફાઈનલ મીનીમમ સિમેન્ટ કન્ટેન્ટ પ્રતિ ઘનમીટર ગણવા હુકમ કરવામાં આવે છે.

ઉપરોક્ત બાબતની અમલવારી તાત્કાલિક અસરથી ચુસ્તપણે કરવાની રહેશે.

કમિશ્નર
રાજકોટ મહાનગરપાલિકા

નકલ રવાના (જાણ તથા અમલવારી અર્થે)

- નાયબ કમિશનરશ્રી (ઝોન-વેસ્ટ ,સેન્ટ્રલ ,ઇસ્ટ)

નકલ રવાના -(અમલવારી અર્થે)

- તમામ સીટી એન્જીનીયરશ્રી, એડી. સીટી એન્જીનીયરશ્રી, એક્ઝીક્યુટીવ એન્જીનીયરશ્રી, એન્વાયરમેન્ટ એન્જીનીયરશ્રી (S.W.M.)

R.M.C./C./632

કમિશ્નર વિભાગ,
રાજકોટ મહાનગર સેવાસદન
તા. 20/6/2013

હુકમ :–

વિષયઃ– ઈ–ટેન્ડર / ઓપન ટેન્ડર પધ્ધતિથી મંગાવવામાં આવતી તમામ પ્રકારની ઓફરો સાથે બિનઅધિકૃત રજુ થતાં ડોકયુમેન્ટસ સામે કડક કાર્યવાહી હાથ ધરવા બાબત.

સંદર્ભ :– આ અગાઉનાં પરીપત્ર નં. આર.એમ.સી./સી./૩૨૯, તા.૨૨/૧૨/૨૦૧૨.

રાજકોટ મહાનગર સેવાસદનના ત્રણ ઝોનનાં તમામ વોર્ડમાં શહેરનાં વિકાસ તથા જાળવણી માટે વિવિધ કામગીરી કરાવવા ઈ–ટેન્ડર / ઓપન ટેન્ડર પધ્ધતિથી અલગ અલગ એજન્સીઓ પાસેથી સ્પર્ધાત્મક ધોરણે અખબારી પ્રસિધ્ધિથી ભાવો ટુ બીડ સીસ્ટમ (૧) ટેકનીકલ બીડ (૨) પ્રાઈઝ બીડ થી મંગાવવામાં આવે છે.

સંદર્ભના પ્રસિધ્ધ કરેલ પરીપત્ર મુજબ તમામ ઈ–ટેન્ડર / ઓપન ટેન્ડરથી મંગાવવામાં આવતાં ભાવો સાથે ભાવ ભરનાર એજન્સીઓ / બીડરો દ્વારા ટેન્ડર બીડ માટે રજુ કરવાનાં થતાં તમામ ડોકયુમેન્ટસ ફરજીયાતપણે ઓરી નકલમા અથવા સેલ્ફ એટેસ્ટેડ રજુ કરવા આદેશ કરવામાં આવેલ છે. જે સંબંધે નીચે મુજબનાં હુકમની અમલવારી તાત્કાલીક અસરથી કરવા આદેશ કરવામાં આવે છે.

(૧) તમામ ટેન્ડરકામોના ટેકનીકલ બીડ ઓપન કરતી વખતે જે ટેન્ડર બીડ ભરનાર એજન્સીઓ દ્વારા તમામ ડોકયુમેન્ટસ કે તે પૈકી કોઈપણ એક ડોકયુમેન્ટસ ઓરી નકલમાં અથવા સેલ્ફ એટેસ્ટેડ રજુ કરેલ ન હોય તો રજુ થયેલ ટેકનીકલ બીડ ઓપન કરવાની કાર્યવાહી દરમ્યાન ટેકનીકલ બીડ ઓપન કરનાર સંબંધીત અધિકારીશ્રી / કર્મચારીશ્રીએ Disqualify પ્રકારનો રબ્બર સ્ટેમ્પ બિનઅધિકૃત રજુ થયેલ ટેન્ડરનાં તમામ પાને લગાવી ટેકનીકલ બીડમાં ટેન્ડર Disqualify ફરજીયાતપણે કરવાનું રહેશે.

જે ટેન્ડર ઓરી નકલ કે સેલ્ફ એટેસ્ટેડ સાથે રજુ થયેલ નથી, તેવું ટેકનીકલ બીડમાં ધ્યાને આવ્યેથી રજુ થયેલ ટેન્ડરને Disqualify ન કરી, તે બીડરનું જો પ્રાઈઝ બીડ ખોલવામાં આવશે તો આવા પ્રાઈઝ બીડ ખોલનાર તમામ સંબંધીત અધિકારીશ્રી / કર્મચારીશ્રી સામે સખત શિક્ષાત્મક પગલાં લેવાની ફરજ પડશે.

(૨) તમામ ટેન્ડરોનાં કિસ્સાઓમાં સંબંધીત ઓરી નકલમાં રજુ થયેલ તમામ ડોકયુમેન્ટસની મુળ (ઓરીજીનલ)નકલ મંગાવી તેની ઓરી નકલની ચકાસણી ફરજીયાતપણે સંબંધીત ડી.ઈ.ઈ.શ્રી તથા મ.ઈ.શ્રી / અ.મ.ઈ.શ્રીએ કરવાની રહેશે. **જે મુળ નકલ સાથે વેરીફાય કર્યાની સહી ફરજીયાતપણે દરેક ઓરી નકલમાં સંબંધીત ડી.ઈ.ઈ.શ્રી / મ.ઈ.શ્રી / અ.મ.ઈ.શ્રીએ કરવાની રહેશે. તે પહેલાં તે ટેન્ડરની પ્રાઈઝ બીડ ઓપન કરી શકાશે નહી.** જેમા ફરજચુક થયેથી સંબંધીત જવાબદાર ડી.ઈ.ઈ.શ્રી / મ.ઈ.શ્રી / અ.મ.ઈ.શ્રી ની સામે કડક ખાતાકીય પગલાં લેવાની ફરજ પડશે.

(૩) ક્રમ નં.(૧) તથા (૨) મુજબની ચકાસણી કરવા છતાં જે કિસ્સામાં ટેકનીકલ બીડ ઓપન કરતાં બીડર દ્વારા કોઈપણ પ્રકારનાં ક્રોડ ડોકયુમેન્ટસ રજુ કરી કામ મેળવવા માટે પ્રયાસ કર્યાનું ધ્યાને આવશે, તેવા કિસ્સામાં બીડર / એજન્સીને બ્લેકલીસ્ટ કરી, આવા બીડર સામે ફરજીયાતપણે ફોજદારી કાર્યવાહી સંબંધીત શાખાના વડા તથા વીજીલન્સ અધિકારીશ્રી (પ્રોટેકશન) દ્વારા જોઈન્ટલી દિન–૭ માં કરવા આદેશ કરવામાં આવે છે. જેની લેખિતમાં

જાણ તાત્કાલીક અસરે કરવાની રહેશે. જેમાં ચૂક થયેથી સંબંધીત તમામ અધિકારીશ્રી / કર્મચારીશ્રી સામે કડક પગલાં લેવા ફરજ પડશે.

(૪) સંદર્ભનો પરીપત્ર તથા આ હુકમ તમામ પ્રકારનાં ટેકનીકલ કામના દરેક ટેન્ડર પ્રસિધ્ધ કરતી વખતે ટેન્ડરનો હિસ્સો ગણી ટેન્ડરના ભાગ તરીકે પ્રસિધ્ધ કરવાનું ફરજીયાત રહેશે, તથા બીડર દ્વારા ટેન્ડરમા પ્રસિધ્ધ થતા સંદર્ભનાં પરીપત્ર તથા આ હુકમનાં દરેક પાને સહી સિક્કા સાથે ભરેલ ટેન્ડરની ટેકનીકલ બીડ ફરજીયાત રજુ કરવાની રહેશે.

ઉપરોકત હુકમનો તાત્કાલીક અસરથી ચુસ્તપણે અમલ કરવા આદેશ કરવામાં આવે છે.

કમિશ્નર.
રાજકોટ મહાનગર સેવાસદન

<u>નકલ રવાના (જાણ અર્થે):-</u>
નાયબ કમિશ્નરશ્રીઓ (તમામ)

<u>નકલ જાણ તથા અમલવારી અર્થે</u> :-
(૧) સહાયક કમિશ્નરશ્રીઓ (તમામ)
(૨) શાખાધિકારીશ્રીઓ (તમામ)

આર.એમ.સી./સી. ૩૨૮

રાજકોટ મહાનગરપાલિકા
કમિશનર વિભાગ
તા.૨૨/૧૨/૨૦૧૨

પરિપત્ર:-

ઇ-ટેન્ડર પદ્ધતિ / ઓપન ટેન્ડર પદ્ધતિથી માંગવામાં આવતી ઓફરોમાં એજન્સીઓ દ્વારા ટેકનીકલ બીડમાં રજુ કરવામાં આવતા ડોક્યુમેન્ટ્સ જેવા કે ટર્નઓવર, અનુભવના પ્રમાણપત્રો વિગેરે ખરી નકલમાં રજૂ કરવામાં આવતા નથી. આથી હવે પછીથી એજન્સીઓ દ્વારા રજૂ થતાં ટેકનીકલ બીડમાં રજુ કરવામાં આવતા ડોક્યુમેન્ટ્સ ખરી નકલમાં અથવા સેલ્ફ એટેસ્ટેડ હોવા જરૂરી છે તેમજ જે એજન્સીનું ટેન્ડર ટેકનીકલ બીડમાં ક્વોલીફાય થાય અને ખરી નકલ ગેઝેટેડ ઓફીસર મારફત પ્રમાણિત કરાવેલ ન હોય તેવા કેસમાં તેના ઓરીજીનલ ડોક્યુમેન્ટ્સ પ્રાઇસબીડ ખોલતા પહેલા ચકાસી અને ખરી નકલ રજૂ કરાવીને જ ખોલવાના રહેશે તથા આ બાબતનું શાખાધિકારીશ્રીઓએ ચુસ્તપણે પાલન કરાવવાનું રહેશે. આમ ન થયેથી પુરતી ચકાસણીને અભાવે જો કોઇ એજન્સીને ખોટા કે અધુરા આધારો સાથે કામ આપવાની ક્ષતિજનક બાબત જાણમાં આવ્યે તે ટેન્ડર ડોક્યુમેન્ટ્સની ચકાસણી કરનાર કર્મચારીશ્રીઓ તેમજ શાખાધિકારીશ્રીની જવાબદારી નક્કી કરવામાં આવશે, જેની સર્વે શાખાધિકારીશ્રીઓએ નોંધ લેવી.

ઉપરોક્ત બાબતનો અમલ તાત્કાલિક અસરથી કરવો.

22/12

કમિશનર
રાજકોટ મહાનગરપાલિકા

નકલ રવાના :- (જાણ અર્થે)
- નાયબ કમિશનરશ્રીઓ (તમામ)

નકલ જાણ તથા અમલવારી અર્થે :-
- સહાયક કમિશનરશ્રીઓ (તમામ)
- શાખાધિકારીશ્રીઓ (તમામ)

જાહેરનામુ

ફોજદારી કાર્યરીતી અધિનીયમ ૧૯૭૩ (૧૯૭૪ના નં.૨) ની કલમ ૧૪૪ અન્વયે કાઢેલ હુકમ

ક્રમાંક: એસ.બી./મજુર/જાહેરનામુ/૧૬૩૯/૨૦૧૪.
પોલીસ કમિશ્નરશ્રીની કચેરી,
રાજકોટ શહેર,રાજકોટ.
તા.૨૬/૦૪/૨૦૧૪

તાજેતરમાં રાજકોટ શહેરમાં ઘરફોડ ચોરીના બનાવો વધતા જોવા મળેલ છે. ભુતકાળમાં રાજકોટ શહેરમાં બનેલ ઘરફોડ ચોરીના બનાવોની તપાસ કરતા તપાસમાં આવા ગુન્હો કરનાર (આરોપીઓ) પકડાયેલ છે. ત્યારે તપાસમાં આવા ગુન્હા વાળા આરોપીઓ ગુન્હાના બનાવના દિવસો અગાઉ રાજકોટ શહેરમાં નવા બંધાતા મકાનોમાં જુદી જુદી ઔદ્યોગીક કંપનીઓમાં, કોર્પોરેશનમાં મજુરી કામ અને ટેલીફોન કંપનીઓ દ્વારા તથા ગેસ પાઇપ લાઇન માટે ખોદાતા ખાડાઓની મજુરી કામ મેળવી અથવા તેના બહાના હેઠળ આવી રેકી કરી આજુબાજુની સ્થાનિક પરીસ્થિતીનુ સર્વે કરી માહીતગાર થઇ મિલ્કત વિરુધ્ધના ગુન્હાઓ આચરતા હોય છે. મજુરી કામના બહાના હેઠળ આતંકવાદીઓ પણ આશરો મેળવી લેતા હોય છે જેથી જાહેર જનતાની જાન-માલ (મિલ્કત)ની સલામતી તથા રક્ષણ સારૂ થોડા નિયંત્રણો મુકવા જરૂરી જણાય છે.

જેથી હું મોહન ઝા (I.P.S.), પોલીસ કમિશ્નર, રાજકોટ શહેર ફોજદારી કાર્યરીતી અધિનીયમ (સી.આર.પી.સી.) ૧૯૭૩ (૧૯૭૪ ના નં.૨) ની કલમ ૧૪૪ અન્વયે અમોને મળેલ સત્તાની રૂએ આથી હું હુકમ કરૂ છુ કે, રાજકોટ શહેરના પોલીસ કમિશ્નર વિસ્તારમા લેબર કોન્ટ્રાકટર/મુકાદમનાઓએ પોતાની પાસે જે મજુર કામે રાખેલ હોય અને મજુરી કામકાજ માટે સપ્લાય કરતા હોય તેઓએ નીચે જણાવેલ ફોર્મ મુજબ દરેક મજુરોના અલગ-અલગ ફોર્મ ભરી ફરજીયાત પણે સ્થાનીક પોલીસ સ્ટેશનને જાણ કરવાની રહેશે તથા મજુરી જ્યારે મજુરી કામ તથા રાજકોટ શહેર છોડી જતા રહે ત્યારે લેબર કોન્ટ્રાકટર/મુકાદમે તે અંગેની જાણ નામ/સરનામા સહિતની વિગત સાથે સ્થાનીક પો.સ્ટે.મા કરવાની રહેશે

૧	લેબર કોન્ટ્રાકટર / મુકાદમ (સપ્લાયર) નુ પુરૂ નામ સરનામુ મો.નં., નંબર સહિત	:-	
૨	મજુરનુ નામ તથા ઉ.વ.	:-	
૩	મજુરનું હાલનુ સરનામુ ટેલીફોન નંબર	:-	
૪	મજુરનુ મુળ વતનનું સરનામું ગામ, તાલુકો, જીલ્લો	:-	
૫	હાલની મજુરીનુ સ્થળ / કંપનીનુ નામ	:-	
૬	મજુરનુ વતનનું સ્થાનીક પો.સ્ટે.નું નામ તથા ટેલીફોન નંબર	:-	
૭	મજુરના વતનના આગેવાનનું નામ, સરનામુ, ટેલીફોન નંબર	:-	
૮	મજુર અગાઉ કોઇ પોલીસ ગુન્હામાં પકડાયેલ હોય તો તેની વિગત	:-	
૯	ક્યારથી મુકાદમે / કોન્ટ્રાકટરે મજુરી કામ માટે રાખેલ છે	:-	
૧૦	મજુરનુ ઓળખ માટેનુ આઇ.ડી.પ્રુફ (ફોટા સાથે નું)	:-	
૧૧	રાજકોટ શહેરમાં કઇ તારીખથી મજુરી કામ કરે છે ? અને કઇ તારીખે જવાનો છે ?	:-	
૧૨	રાજકોટ શહેરમાં નજીકના સંબંધી કોઇ હોયતો તેનુ નામ, સરનામુ	:-	

મજુરનો તાજેતરનો ફોટો

મજુરના અંગુઠાનુ નિશાન..............................
મુકાદમ/સપ્લાયર/કોન્ટ્રાકટરની સહિ..............................
નામ..............................

આ હુકમ તા. ૦૧/૦૫/૨૦૧૪ થી તા.૩૦/૦૬/૨૦૧૪ સુધી અમલમાં રહેશે.

આ હુકમનો ભંગ કરનાર વ્યક્તિ ભારતીય દંડ સંહિતાની કલમ ૧૮૮ મુજબ શિક્ષાને પાત્ર થશે.

તમામને વ્યક્તિગત રીતે નોટીસની બજવણી કરવી શક્ય ન હોય આથી એકતરફી હુકમ કરૂ છુ. જાહેર જનતાની જાણ સારૂ સ્થાનીક વર્તમાન પત્ર આકાશવાણી અને દુરદર્શન કેન્દ્ર મારફતે પ્રસિધ્ધી દ્વારા તથા પોલીસ સ્ટેશનના પોલીસ ઇન્સ્પેકટર, મદદનીશ પોલીસ કમિશ્નર, નાયબ પોલીસ કમિશ્નર તથા પોલીસ કમિશ્નર કચેરીના નોટીશ બોર્ડ ઉપર હુકમની નકલ ચોંટાડી પ્રસિધ્ધી કરવામાં આવશે તેમજ સહેલાઇથી જોઇ શકાય તેવી જાહેર જગ્યાઓ ઉપર હુકમની નકલ ચોંટાડી પ્રસિધ્ધી કરવામાં આવશે ગુજરાત પોલીસ [illegible] કલમ ૧૬૩ મુજબ પોલીસ અધિકારીઓ પણ આ હુકમની જાહેરાત [illegible] અધિકૃત ગણાશે.

આજ તા.૨૯માહે એપ્રીલ-૨૦૧૪ ના રોજ મારી સહી અને સિક્કો કરી આપેલ છે.

(મોહન ઝા)
પોલીસ કમિશ્નર
રાજકોટ શહેર,રાજકોટ

નકલ રવાના:-

(૧) અગ્ર સચિવશ્રી, ગૃહ વિભાગ, ગાંધીનગર.
(૨) પોલીસ મહાનિર્દેશક અને મુખ્ય પોલીસ અધિકારીશ્રી, ગુ. રા. ગાંધીનગર
(૩) અધિક પોલીસ મુખ્ય નિર્દેશકશ્રી (ઇન્ટે.) ગુ.રા.ગાંધીનગર.
(૪) પોલીસ કમિશ્નરશ્રી, અમદાવાદ શહેર, વડોદરા શહેર, સુરત શહેર.
(૫) ખાસ મુખ્ય પોલીસ અધિકારીશ્રી, રાજકોટ રેન્જ, રાજકોટ.
(૬) જીલ્લા પોલીસ અધિક્ષકશ્રી, રાજકોટ ગ્રામ્ય, રાજકોટ.
(૭) કલેકટરશ્રી , રાજકોટ શહેર.
(૮) મ્યુનિસિપલ કમિશ્નરશ્રી, રાજકોટ શહેર.
(૯) નિયામકશ્રી, માહીતી ખાતું ડૉ.જીવરાજ મહેતા ભવન જુના સચિવાલય બ્લોક નં.૭, બીજા માળે,ગુ.રા.. ગાંધીનગર.
(૧૦) જીલ્લા સરકારી વકિલશ્રી, સેસન્સ કોર્ટ, રાજકોટ.
(૧૧) મેનેજરશ્રી, ગવર્નમેન્ટ પ્રેસ, રાજકોટ (પોલીસ ગેઝેટ માં પ્રસિધ્ધ કરવા સારૂ).
(૧૨) મદદનીશ પોલીસ કમિશ્નરશ્રી, પૂર્વ/ પશ્ચિમ વિભાગ, રાજકોટ શહેર.
(૧૩) આર્ટી.કમિશ્નરશ્રી, (ઈન્ટે.), રાજકોટ રીજીયન, રાજકોટ.
(૧૪) નાયબ પોલીસ અધિક્ષકશ્રી,/પો.ઇન્સ.શ્રી, રાજકોટ રેલ્વે જંકશન પો.સ્ટે.
(૧૫) તમામ પો.સ્ટે.ઈન્ચાર્જશ્રીઓ,રાજકોટ શહેર(નકલો ચોંટાડી લાઉડ સ્પીકર વાહન દ્વારા જાહેરાત કરાવવા સારૂ)
(૧૬) તમામ બ્રાન્ચ તથા શાખા ઈન્ચાર્જશ્રીઓ, રાજકોટ શહેર.
(૧૭) કન્ટ્રોલ ઈન્ચાર્જશ્રી, રાજકોટ શહેર (૧૦ નકલો) વર્તમાનપત્રોને આપવી.
(૧૮) લેબર કમિશ્નરશ્રી, ... તમામ ખાનગી સંસ્થાઓને અવગત કરવા સારૂ

નકલ અભિપ્રાય રવાના:-

(૧) રજીસ્ટ્રારશ્રી, હાઈકોર્ટ. ગુ.રા.સોલારોડ અમદાવાદ.
(૨) રજીસ્ટ્રારશ્રી, ડીસ્ટ્રીકટ એન્ડ સેશન્સ કોર્ટ, રાજકોટ.
(૩) રજીસ્ટ્રારશ્રી, ચીફ જ્યુડીશ્યલ મેજી.ની કોર્ટ, રાજકોટ.
(૪) રજીસ્ટ્રારશ્રી, એડીશનલ સેશન્સ જજ કોર્ટ, રાજકોટ.
(૫) એકઝીકયુટીવ મેજી.શ્રી, રાજકોટ શહેર
(૬) એકઝીકયુટીવ મેજી.શ્રી, રાજકોટ તાલુકા
(૭) સયુંકત માહીતી નિયામકશ્રી, રાજકોટ.
(સ્થાનીક વર્તમાનપત્રો, આકાશવાણી તથા દુરદર્શન કેન્દ્રમાં પ્રસિધ્ધ કરવા અને વર્તમાનપત્રોની કાપલીઓ મોકલવા સારૂ)

રાજકોટ મહાનગરપાલિકા

હિસાબી શાખા

ડૉ.આંબેડકર ભવન, ઢેબરભાઇ રોડ, રાજકોટ – ૩૬૦ ૦૦૧.

રા.મ.ન.પા./હિસાબી/જા.નં. ૪૨૧ તા. ૧૬/૫/૨૦૧૭

નોંધ -

વિષય – Vendor Regi. માં GST No. Update કરવા બાબત

ઉપરોકત વિષયે જણાવવાનું કે રાજકોટ મહાનગરપાલીકા નાં તમામ વેન્ડર / કોન્ટ્રાકટરો ના Vendor Registration માં GST No. ની જરૂરીયાત હોય તાત્કાલીક અપડેટ કરવા વિનંતિ. Temporary Vendor નાં Regi. આપની શાખામાં જ થઇ જશે જ્યારે Permanent Vendor નાં GST No. અપડેટ કરવા શાખા અધિકારીશ્રી નાં જરૂરી સહી સીક્કા સાથે નીચે મુજબ વિગત નું પત્રક બનાવી દિવસ – ૭ માં હિસાબી શાખામાં માહિતી મોકલાવી આપવા વિનંતી.

Vendor Name	Exiting Vendor Regi. No.	PAN	GST NO.

ચીફ એકાઉન્ટન્ટ
રાજકોટ મહાનગરપાલીકા

નોંધ - તમામ વિગતો ચકાસીને અપડેટ કરવી / ચકાસીને મોકલવી અન્યથા સપ્લાયર્સ ને TDS ની કેડીટ મળશે નહી જેની નોંધ લેવા વિનંતી.

રાજકોટ મહાનગરપાલિકા
સે. ઝોન બાંધકામ શાખા
ઈન્વર્ડ નંબર ૧૩૭
તારીખ ૧૬/૫/૧૭

નકલ અમલવારી અર્થે

1. તમામ શાખા અધિકારીશ્રી ઓ

નકલ સવિનય જાણ અર્થે

1. માન. કમિશ્નર સાહેબશ્રી
2. માન. નાયબ કમિશ્નર સાહેબશ્રી

રા.મ.ન.પા./મ.ઓ./સો.વે.મે./જા.નં. ૧૪૩૫ ૦૩/૦૬/૨૨

જાહેરનામું

આથી હું અમિત અરોરા (IAS), મ્યુનિસીપલ કમિશનર, રાજકોટ મહાનગરપાલિકા, રાજકોટ ગુજરાત પ્રોવિન્સીયલ મ્યુનિસીપલ કોર્પોરેશન એકટ-૧૯૪૯ની જોગવાઇ અનુસંધાને મળેલ સતા મુજબ, જાહેર હિતને ધ્યાને લઇ, રાજકોટ મહાનગરપાલિકા વિસ્તારમાં ઇમારત તોડવા, સમારકામ અથવા તો નવા બાંધકામ દરમ્યાન ઉપસ્થિત થતા બાંધકામએ લગત કચરા (Construction and Demolition Waste) નો રાજકોટ મહાનગરપાલિકા દ્વારા નિયત કરાયેલ જગ્યા સિવાય નિકાલ કરવા પ્રતિબંધ ફરમાવું છું.

એવું ધ્યાનમાં આવેલ છે જે, રાજકોટ મહાનગરપાલિકા વિસ્તારમાં ઇમારત, ઇમારતોના બાંધકામ દરમ્યાન નળીયા, પથરા, ઇંટો, ઇમારત બાંધવાના માલ સામાન અને એવા માલ સામાનનો કાટમાળ ગમે તે જગ્યાએ નિકાલ / એકઠો કરવામાં આવે છે. જેનાથી એવી જગ્યાએ ઉંદરો અથવા અન્ય જીવ જંતુઓનું આશ્રય સ્થાન અથવા ઉત્પતિ સ્થાન બને છે. તેમજ સદરહું જગ્યાનો ભોગવટો કરનારાઓને અથવા પડોશમાં રહેતી વ્યક્તિઓના ભય અને ઉપદ્રવનું કારણ બને છે. તેના કારણે રોગચાળો ફેલાવવાનો ભય અને લોકોના આરોગ્ય તથા જાનમાલને નુકસાન થાય તેવી સ્થિતી ઉત્પન્ન થાય છે. તેમજ તે કચરો (Construction and Demolition Waste) દુર કરવા રાજકોટ મહાનગરપાલિકાને ખુબજ મોટો ખર્ચ થાય છે, તેમજ માનવ સમય બગડે છે. આમ, લોકોના જાનમાલના અને આરોગ્યના નુકસાનના ભોગે આવી ગેરકાયદેસર પ્રવૃતિ ચાલી રહેલ છે, આવી કોઇપણ પ્રવૃતિ જન આરોગ્ય માટે બિન સલામતી નોતરે તેમ હોય, ગુજરાત પ્રોવિન્સીયલ મ્યુનિસીપલ કોર્પોરેશન એકટ અનુસુચી-ક ના પ્રકરણ-૧૪ ની જોગવાઇઓ અનુસંધાને આવી તમામ પ્રવૃતિ કરવાનો અગાઉના જાહેરનામા નં.રા.મ.ન.પા./મ.ઓ./સો.વે.મે./જા.નં.૧૯૪૧, તા.૦૬/૦૮/૨૦૧૯ થી પ્રતિષેધ ફરમાવવામાં આવેલ અને આવા કચરા (Construction and Demolition Waste)ના નિકાલ માટે રાજકોટ મહાનગરપાલિકાએ નીચે દર્શાવેલ સ્થળો નિયત કરવામાં આવેલ.

૧. કોઠારીયા પોલીસ ચોકીની બાજુમાં પથ્થરની ખાણ પાસે,
૨. રૈયા સ્માર્ટ સીટીના તમામ ખાણ વિસ્તાર,
૩. ટી.પી.સ્કીમ નં.૧૦, એફ.પી.-૮૭, ઢેબર રોડ, સાઉથ અટીકા વિસ્તાર, પી.જી.વી.સી.એલ. ઓફિસ પાસે,
૪. ટી.પી.સ્કીમ નં.૨૩, એફ.પી.-૨૩, મોરબી રોડ,પોપટપરા આઇ.ઓ.સી. ગોડાઉન પાસે,
૫. સમ્રાટ ઇન્ડ. એરિયા, એસ.ટી. વર્કશોપ પાછળ, અનામત પ્લોટ,
૬. ટી.પી.સ્કીમ નં.૯, એફ.પી.-૫, રૈયાધાર ગાર્બેજ ટ્રાન્સફર સ્ટેશન પાસે,
૭. ટી.પી.સ્કીમ નં.૨૦, એફ.પી.-૩૫, પ્રધ્યુમન ગ્રીન પાછળ

ઉપરોકત સ્થળો ઉપરાંત નીચે મુજબના સ્થળો Construction and Demolition Waste ના નિકાલ માટે નિયત કરવામાં આવે છે.

૧. જેટકો ચોકડી, ટી.પી.સ્કીમ નં.૨૮, મવડી, એફ.પી.-૪૬/એ,
૨. ટી.પી.સ્કીમ નં.૧૨, કોઠારીયા નેશનલ હાઇવે, લીજ્જત પાપડ પાસે, એફ.પી.-૩૮/એ, ૩૯/બી.

ઉપરોકત નિયત કરેલ સ્થળો સિવાય અન્ય કોઇપણ જગ્યાએ કોઇપણ ઇસમ/ઇસમો છકડો, ટ્રેકટર અથવા ડમ્પર દ્વારા (Construction and Demolition Waste) નો નિકાલ કરતાં પકડાશે તો પ્રથમ વખત છકડો/ટ્રેકટર દીઠ રૂા.૭,૫૦૦/- તથા ડમ્પર દીઠ રૂા.૧૫,૦૦૦/-, બીજી વખત છકડો/ટ્રેકટર દીઠ રૂા.૧૫,૦૦૦/- તથા ડમ્પર દીઠ

રૂ|.૩૦,૦૦૦/- અને ત્રીજી વખત છકડો/ટ્રેકટર દીઠ રૂ|.૫૦,૦૦૦/- તથા ડમ્પર દીઠ રૂ|.૧,૦૦,૦૦૦/-લેખે વહીવટી ચાર્જ વસુલ કરવામાં આવશે. તેમજ વાહન જપ્ત કરવા સુધીની કાર્યવાહી કરવામાં આવશે.

શહેરમાં વસતાં નાગરીકો દ્વારા ઉપરોકત Construction and Demolition Waste ના નિકાલ માટે રાજકોટ મહાનગરપાલિકા દ્વારા ઝોન વાઇઝ કામગીરી માટે Construction and Demolition Waste સેલની રચના કરવામાં આવેલ છે. શહેરના નાગરિકો રાજકોટ મહાનગરપાલિકાના કોલ સેન્ટર – ૦૨૮૧-૨૪૫૦૦૭૭ પર ફોન કરી તેમની મિલ્કતનાં રીપેરીંગ કે કાટમાળનો નિકાલ નીચે મુજબનાં નિયત થયેલ ચાર્જીસ ભરપાઇ કરી નિકાલ કરવાની વ્યવસ્થાનો લાભ મેળવી શકશે.

- રીક્ષા કે ૧/૨ ટ્રેકટર રૂ|.૩૦૦/-
- ટ્રેકટર જેટલો જથ્થો રૂ|.૫૦૦/-
- ટ્રક / ડમ્પર જેટલો જથ્થો રૂ|.૧,૦૦૦/-

ઉપરોકત નિયત કરાયેલ સ્થળોએથી ખાનગી માલિકો, જુનો એકત્રિત થયેલ બાંધકામનો કાટમાળ પોતાના ઉપયોગ માટે સ્વખર્ચે ઉપાડી લઇ જઇ શકશે.

ઉકત જાહેરનામાનો ચુસ્તપણે અમલ કરવો.

રાજકોટ.
તા.4/6/૨૦૨૨

કમિશનર
રાજકોટ મહાનગરપાલિકા

ક્રમાંક: અશાખા/૨૯૯/૨૦૦૦/ ૪૮૨૮

નાયબ મુખ્ય નિયંત્રક મહેસૂલ કચેરી,
સ્ટેમ્પ અને નોંધણી ભવન,
સેક્ટર - ૧૩ - બી "ઘ" રોડ,
ગાંધીનગર,
તા. [illegible]

પ્રતિ,
[illegible] કાર્યપાલક ઈજનેરશ્રીની કચેરી,
[illegible] માર્ગ અને મકાન વિભાગ
જુનાગઢ.

વિષય:- કરારખત પર સ્ટેમ્પ ડ્યુટી વસુલાત બાબત.

સંદર્ભ:- આપની કચેરીનો તા. ૩૦/૭/૨૦૦૦નો પત્ર

ઉપરોક્ત વિષય અને સંદર્ભ પત્ર દ્વારા આપની કચેરી દ્વારા "કરાર ખત" પર [illegible] સ્ટેમ્પ ડ્યુટીના માર્ગદર્શન બાબતે જણાવવાનું કે, અત્રેની કચેરીના પરિપત્ર નં. સ્ટેમ્પ/ [illegible] ૨૦૦૦/૯૯૯ તા. ૫/૨/૨૦૦૦ ના પરિપત્ર ની નકલ મોકલવામાં આવે છે. જેના પેરા નં. [illegible] (૩)માં જણાવેલ સ્ટેમ્પ ડ્યુટી વાપરવાની થાય છે.

વિશેષમાં જણાવવાનું કે, આપના દ્વારા અત્રે રજુ થયેલ વિગત મુજબ અત્રેના તા. [illegible] ૨૦૦૦ ના પરિપત્ર ના મુદ્દા નં. ૨ મુજબ એગ્રીમેન્ટ માટે રૂ. ૧૦૦/- તથા ડિપોઝીટ તરીકે [illegible] નેશનલાઈઝડ બેંકની ફીક્સ ડીપોઝીટ તથા નાની બચત પત્રોની ૨.૫ % (અઢી ટકા) રકમ રૂ. [illegible] ૪૦૦/- ઉપર આર્ટીકલ -૩૬ (ક) સાથે આર્ટીકલ - ૨૦(ક)માં પ્રકાશિત કર તથા [illegible] મુજબ [illegible] ૧૦૦ ને ૪.૯૦% મુજબ સ્ટેમ્પ ડ્યુટી ભરપાઈ [illegible] [illegible] થાય છે. જે વિદિત થાય.

સામેલ:- પરિપત્રની નકલ.

Off. of the E. E. P.W.
R&B Dn.2, Junagadh
2 AUG 2000

સહી/-
કચેરી
અધિક મુખ્ય નિયંત્રક
ગુજરાત રાજ્ય, ગાંધીનગર.

નં.સ્ટેમ્પ–અનામ–૧૪ –૨૦૦૭ – ૮૩૮–

સુપ્રિ.ઓફ સ્ટેમ્પસની કચેરી,
સ્ટેમ્પ અને નોંધણી ભવન,
સેકટર–૧૩–સી, ખ રોડ,
ગાંધીનગર.

તા.૫ –૨–૦૭

પરિપત્ર:–

અત્રેની કચેરીનાં ધ્યાન ઉપર આવેલ વિગત મુજબ ગુજરાત રાજ્યમાં આવેલ જીલ્લા પંચાયત, નગર પાલિકાઓ તરફથી કરવાના થતા બાંધકામ તથા અન્ય કામો માટે ટેન્ડર બહાર પાડી. કોન્ટ્રાકટરો પાસે કામગીરી કરાવવામાં આવે છે. આવી કામગીરી માટે જે ટેન્ડરની અંદાજીત રકમ પૈકી નિયમોનુસાર કોન્ટ્રાકટરનું ટેન્ડર મંજુર કરવામાં આવે છે. તે ટેન્ડરની અનામતની (સીકયુરીટી – ડીપોઝીટની) રકમ લેવામાં આવે છે. તે અંગે જીલ્લા પંચાયત / નગરપાલિકા / મહાનગરપાલિકા અને કોન્ટ્રાકટર વચ્ચે કરાર કરવામાં આવે છે. આવા કરારો સ્ટેમ્પ ડયુટીના અભિપ્રાય માટે અત્રે રજૂ કરવામાં આવે છે. તેમાં જે ડિપોઝીટની રકમ અનામત મુકવાની થાય છે. તે રોકડ, ચેક, ડીમાન્ડ ડ્રાફટ બેંક ગેરંટી ફિકસ ડીપોઝીટ રીસીપ્ટ એન.એસ.સી. બચતપત્ર વિગેરે પૈકીના એક યા વધુ માધ્યમથી આપવામાં આવે છે. તેમાં ટેન્ડર અન્વયે કેટલી રકમ સીકયુરીટી ડીપોઝીટ પેટે મુકવાની છે અને કયા માધ્યમથી મુકવામાં આવે છે. તેની પુરેપુરી વિગત રજુ કરેલ ન હોય તો આવા કેસોમાં પુરેપુરી વિગત રજુ કરવામાં ન આવે ત્યાં સુધી અભિપ્રાય આપી શકાતો નથી અથવા વિલંબ થાય છે. આવી પરિસ્થિતિ નિવારવા અને ટેન્ડરની રકમ અન્વયે જે કરાર કરવામાં આવે છે. તેમાં નીચેની વિગતે સ્ટેમ્પ ડયુટી લેવાની થાય છે.

(૧) અનામતની જે રકમ રોકડ, ચેક યા ડ્રાફટથી લેવામાં આવે અથવા તો બેંક ગેરંટીથી આપવામાં આવે તો કરારનાં લેખ ઉપર મુંબઈ સ્ટેમ્પ અધિનિયમ –૧૯૫૮ની અનુસુચિ–૧ ના આર્ટીકલ –૫ (ઝ) મુજબ કરાર ઉપર રૂા. ૧૦૦/– સ્ટેમ્પ ડયુટી વાપરવાની થાય છે.

(૨) ટેન્ડર અન્વયે જે અનામતની રકમ ફિકસ ડીપોઝીટ રીસીપ્ટ, એન.એસ.સી. યા અન્ય કોઈ બચતપત્રના માધ્યમ થી અનામત મુકવામાં આવે તો તેટલી અનામતની રકમ ઉપર મુંબઈ સ્ટેમ્પ અધિનિયમ– ૧૯૫૮ની અનુસુચિ–૧ ના આર્ટીકલ –૩૬ (ક) સાથે આર્ટીકલ ૨૦ (ક) મુજબ આ રીતે આપવામાં આવેલ અનામતની રકમના પ્રત્યેક રૂા. ૧૦૦/– અથવા તેના ભાગ માટે ૪.૨૫% પ્રમાણે સ્ટેમ્પ ડયુટીને પાત્ર બને છે.

આપના તરફથી જે કામો માટે ટેન્ડર બહાર પાડવામાં આવે અને તેમાં ટેન્ડરની રકમ અન્વયે જે રકમ ડિપોઝીટ (અનામત) મુકવામાં આવે છે. તેમાં ઉપર દર્શાવ્યા મુજબ સ્ટેમ્પ ડયુટીને પાત્ર બને છે. તે મુજબ અમલ કરવા વિનંતી છે. સાથોસાથ આપના દ્વારા

કોન્ટ્રાકટરને વર્ક ઓર્ડર આપવામાં આવે તે સમયે કરારનામા ઉપર ઉકત વિગતે યોગ્ય સ્ટેમ્પ ડયુટી ભરપાઈ કરેલ છે. કેમ ? તેની ખાત્રી કરવા પણ જણાવવામા આવે છે.

અધિક મુખ્ય અધિક સેક્રેટરી
ગુજરાત રાજ્ય

પ્રતિ, (૧) મુખ્ય કારોબારી અધિકારી,
(૨) જીલ્લા વિકાસ અધિકારી,
જીલ્લા વિકાસ અધિકારીની કચેરી
.....
(૩) મ્યુનીસીપલ કમિશ્નરશ્રી,
મ્યુ. કમિશ્નરશ્રીની કચેરી
.....
(૪) ચીફ ઓફિસરશ્રી તમામ
નગરપાલિકા કચેરી,
.....

RAJKOT MUNICIPAL CORPORATION
ACCOUNTS DEPARTMENT
Room No. 4, 2nd Floor
Dr. Ambedkar Bhavan,
Debar Road,
Rajkot - 360001

PARTY/VENDOR REGISTRATION FORM

VENDOR CODE	:	
Party Name	:	
Authorized Person	:	
PAN Card No.	:	
GST No.	:	
Address	:	
City	:	
Phone No.	:	
Mobile No.	:	
eMail ID	:	
Website	:	
Area Of Work	:	
Bank Details (attach copy of cancelled cheque)		
Bank Name	:	
Branch Name	:	
MICR Code	:	IFSC Code :
Account Type	:	
Account No.	:	

(1) Any vendor while filling a tender shall quote registration details; if he is not registred he will give fresh details along with tender.
(2) Acounts branch will designate a person who will keep the forms and also authorize new registrations or edit existing registrations.

TO,
CHIF ACCOUNTANT,
ACCOUNT DEPARTMENT,
RAJKOT MUNICIPAL CORPORATION

THE ABOVE MENTIONED DETAILS FOR VENDOR REGISTRATION HAS BEEN VERIFIED BY US & FOUND CORRECT. KINDLY REGISTER ABOVE VENDOR.

SIGN
NAME
DESIGNATION
DEPARTMENT NAME

રાજકોટ મહાનગરપાલિકા

હિસાબી શાખા

તા૨૦/૦૯/૨૦૧૮

જા.નં. ૧૬૧૭

પરિપત્ર :-

વિષય :- તા. ૦૧/૧૦/૨૦૧૮ થી જી.એસ.ટી. ટી.ડી.એસ. ની કપાત બાબત

સંદર્ભ :- (૧) GoI, MoF (Department of Revenue) Central Board Indirect Taxes and Customs Notification No. 50/2018-Central Tax

(૨) GoG. Finance Department Notification No. 50/2018-State Tax

ઉપરોક્ત વિષય અને સંદર્ભે ગુજરાત ગુડ્સ એન્ડ સર્વિસ ટેક્ષ એક્ટ, ૨૦૧૭ તથા સેન્ટ્રલ ગુડ્સ એન્ડ સર્વિસ ટેક્ષ એક્ટ, ૨૦૧૭ ની કલમ ૫૧ અનુસાર ***રૂ. ૨,૫૦,૦૦૦ થી વધુ રકમના વેરાપાત્ર વીજવસ્તુઓ ખરીદે કે વેરાપાત્ર સેવાઓ કોન્ટ્રાક્ટથી મેળવે તો કુલ ૨% (બે ટકા) ટેક્ષ ડીડક્શન એટ સોર્સ (જી.એસ.ટી. ટી.ડી.એસ) કાપવાનો થાય છે.***

આમ ઉપરોક્ત બાબતો ધ્યાને લઇ વધારાની ૨% ની વધારાની નિયમો અનુસાર બિલમાંથી તા. ૦૧/૧૦/૨૦૧૮ થી જી.એસ.ટી. ટી.ડી.એસ. ની કપાત કરવાની થાય છે.

નાયબ કમિશ્નર

રાજકોટ મહાનગરપાલિકા

બિડાણ :- GST FAQ's

નકલ સવિનય જાણ અર્થે:-

(૧) માન. કમિશ્નર સાહેબશ્રી

(૨) માન. નાયબ કમિશ્નર સાહેબશ્રી. (વે.ઝોન, ઈ.ઝોન)

નકલ અમલવારી અર્થે:-

(૧) તમામ શાખા અધિકારીશ્રી

રા.મ.ન.પા./લીગલ/જા.નં.૧૫૭૧

રાજકોટ મહાનગરપાલિકા
લીગલ શાખા
તા.૨૯/૧૨/૨૦૧૮

પરિપત્ર :

વિષય : ઇ.પી.એફ. યોજના અંતર્ગત આપવાની થતી માહિતી

રાજકોટ મહાનગરપાલિકાની જુદી-જુદી શાખાઓમાં ફરજ બજાવતા કર્મચારી કે જેઓને ઇ.પી.એફ. યોજના લાગુ પડે છે, અથવા તો જેઓને એક વખત આ યોજના લાગુ પડી ગયેલ હોય, તેઓના ઇ.પી.એફ. એકાઉન્ટમાં કે.વાય.સી. (K.Y.C) ફોર્મમાં આધાર કાર્ડ, પાનકાર્ડ, બેંક એકાઉન્ટની વિગતો તથા મોબાઇલ નંબર અપડેટ કરવાના બાકી હોય તેનું લીસ્ટ ઇ.પી.એફ. કચેરીમાં જે કર્મચારી/એકાઉન્ટ હોલ્ડરની જરૂરી વિગતો પુરી પાડવામાં આવેલ ન હોય તે સત્વરે પુરી પાડવાની થાય છે. તથા અત્રેથી આ કામગીરીના સંકલન અર્થે નિયુક્ત કરવામાં આવેલ પેનલ એડવોકેટ તરફથી ઇ-મેઇલ મારફતે યાદી પુરી પાડેલ છે. જે આ સાથે સામેલ છે. સદરહું લીસ્ટના કર્મચારીઓની વિગત સબંધિત શાખાએ દિન-૨ માં પેનલ એડવોકેટ "ભાવેશ કન્સલ્ટન્ટ" ને અચુકપણે પહોંચતી કરવાની થાય છે.

આ ઉપરાંત રાજકોટ મહાનગરપાલિકાની જુદી-જુદી શાખાઓ દ્વારા સને ૨૦૧૨ થી આજદીન સુધી કોન્ટ્રાક્ટરો મારફતે કાર્ય કરાવેલ હોય જેમાં માનવશ્રમનો ઉપયોગ થયો હોય, તે સબંધિત કોન્ટ્રાક્ટરો ઇ.પી.એફ. એક્ટ તથા ઇ.એસ.આઇ. એક્ટ હેઠળ રજીસ્ટ્રેશન કરાવેલ છે કે કેમ? તેની ખરાઇ બાદ જ સબંધિત કોન્ટ્રાક્ટરશ્રીઓના બીલ પાસ કરવા અગાઉ સુચના આપવામાં આવેલ હતી. જેનો ફરીથી ચુસ્ત અમલીકરણ સુચના આપવામાં આવે છે. સબંધિત કોન્ટ્રાક્ટરોની તથા તેઓ હસ્તકના શ્રમિકોની ઇ.પી.એફ. કચેરી તરફથી આવેલ પત્રમાં દર્શાવેલ વિગતો તાત્કાલિક અસરથી પેનલ એડવોકેટશ્રીને દિન-૫ માં પહોંચતી કરવા દરેક શાખાધિકારીને સુચિત કરવામાં આવે છે.

રાજકોટ મહાનગરપાલિકા
હિસાબી શાખા
ઇનવર્ડ નં. ૩૫૫૨
તારીખ ૨૯/૧૨/૧૮

સદરહુ વિગત નિયત સમયમર્યાદામાં ન મોકલવાના સંજોગોમાં ખાતાના વડા તે ગણાશે અને મોડી વિગતો મોકલવા બાબતે સંબંધિત શાખાધિકારીની વ્યક્તિગત જવાબદારી નક્કી કરવામાં આવશે. જેથી કોર્ટમાં ચાલતા પ્રકરણોના રાજકોટ મહાનગરપાલિકાના કર્મચારીઓની વિગતો તથા [illegible] હસ્તકના કોન્ટ્રાક્ટર તથા તેઓ હસ્તકના શ્રમિકોની વિગતો યોગ્ય [illegible] નિયત કરેલ સમયમર્યાદામાં પેનલ એડવોકેટને પહોંચતી કરવી. તથા તેની જાણ લીગલ શાખાને કરવી.

ઉપરોક્ત પરિપત્રનો ચુસ્તપણે તાત્કાલિક અસરથી અમલ કરવો.

નાયબ કમિશનર
રાજકોટ મહાનગરપાલિકા

નકલ સવિનય રવાના :-
- માન. કમિશનર સાહેબ
- નાયબ કમિશનર (ઈ.ઝો./વે.ઝો.)

નકલ રવાના :-
તમામ શાખાધિકારી (અમલસારૂ)

પેનલ એડવોકેટનું સરનામું : [illegible] કન્સલ્ટન્ટ
૫૦૨ [illegible]
[illegible] રોડ, સાયકલ ઝોન ઉપર
રાજકોટ. ફોન નં. ૨૪૬૩૩૮૦

નોંધ : સંબંધિત કોન્ટ્રાક્ટરો ઇ.પી.એફ. કોડ તથા ઇ.એસ.આઇ. કોડ [illegible] રજીસ્ટ્રેશન ન કરાવેલ હોય તેવા તમામ કોન્ટ્રાક્ટરોના બીલો ઓડિટ તથા હિસાબી શાખાએ મંજુર કરવા નહિ.

C-38J-
A

રા.મ.ન.પા./લીગલ/જા.નં. ૧૮૧૬

રાજકોટ મહાનગરપાલિકા
લીગલ શાખા
તા.૧૮/૨/૨૦૧૭

હુકમ:

તમામે : લીગલ ફાઇલ નં.૩૩૧/૨૦૧૬-૧૭

રાજકોટ મહાનગરપાલિકાની કામગીરી માટે જુદી-જુદી શાખાઓ દ્વારા કામગીરીના પ્રકારને ધ્યાને લઇ નિયમ અનુસારની પ્રક્રિયા અનુસરીને એજન્સી/સપ્લાયર/કોન્ટ્રાક્ટર સાથે જોગવાઇઓ સ્વનંત્યે કરાર કરવામાં આવે છે. મહાનગરપાલિકાની કામગીરી સંદર્ભે તૈયાર કરવામાં આવતા ટેન્ડર/કરારનામામાં વખતો વખતની જરૂરીયાતને ધ્યાને લઇ આર્બીટ્રેશન (Arbitration) ની જોગવાઇઓનો સમાવેશ કરવામાં આવેલ છે.

રાજકોટ મહાનગરપાલિકાની કામગીરી માટે કરવામાં આવેલ કરારનામાની શરતો અનુસંધાને અમુક એજન્સી/સપ્લાયર/કોન્ટ્રાક્ટર દ્વારા છેલ્લા કેટલાક વર્ષોથી નામદાર હાઇકોર્ટ સમક્ષ આર્બીટ્રેટરશ્રીની નિયુક્તિ અંગે પીટીશનો કરવામાં આવે છે, જેના કારણે મહાનગરપાલિકાની કામગીરીના ભારણમાં વધારો થયેલ છે, અને સબંધિત અધિકારીશ્રીઓને વારવાંર અમદાવાદ ખાતે હાજર રહેવુ પડતુ હોય તેના કારણે અગત્યના પ્રોજેકટો સહીત કચેરીની કામગીરી તેમજ પ્રજાકીય કામો ઉપર વિપરીત અસર થવા પામેલ છે, તેમજ અરજદારોને હેરાન થવું પડે છે. આ અંગે કાયદાકીય, શાખાના અભિપ્રાય અને પ્રકરણની વિગતો જોતા આ કામે વૈકલ્પિક ઉપાય (alternate remedy) ઉપલબ્ધ હોય મહાનગરપાલિકાના ટેન્ડર/કરારનામામાં આર્બીટ્રેશનની જોગવાઇઓને સામેલ કરવાનું ઉચીત જણાતું નથી.

આથી " રાજકોટ મહાનગરપાલિકાના કામે કરવામાં આવતા ટેન્ડર ડોક્યુમેન્ટ અને કરારનામામાં આર્બીટ્રેશન (Arbitration) ને લગત જોગવાઇઓ દુર કરવાનો," અને તેના બદલે "ટેન્ડરની શરત/કરારનામાની શરતના અર્થઘટન સંદર્ભે મહાનગરપાલિકાના કમિશનરશ્રીનો નિર્ણય આખરી અને બંધનકર્તા રહેશે," અને "ટેન્ડરની/કરારનામાની શરતો અંગે કોઇ પણ બાબતે વિવાદ ઉપસ્થિત થયે રાજકોટની દિવાની અદાલતની હકુમત રહેશે," તેવી શરતોનો મહાનગરપાલિકાના કામ અર્થે તૈયાર કરવામાં આવતા તમામ કામગીરીના પરિપત્રો/ટેન્ડર ડોક્યુમેન્ટ તેમજ કરારનામામાં સમાવેશ કરવાનો આથી હુકમ કરવામાં આવે છે.

આ હુકમનો અમલ તાત્કાલિક અસરથી યુસ્તપણે કરવો.

કમિશનર
રાજકોટ મહાનગરપાલિકા

નકલ રવાના જાણ અર્થે : નાયબ કમિશનરશ્રી (તમામ)

નકલ રવાના જરૂરી કાર્યવાહી અર્થે : તમામ શાખાધિકારીશ્રીઓ

રા.મ.ન.પા./ લીગલ/ જા.નં. 1221

રાજકોટ મહાનગરપાલિકા
લીગલ શાખા,
રાજકોટ.
તા. 25/08/2023

પરિપત્ર:

વિષય: ઇ.પી.એફ. તથા ઇ.એસ.આઇ.સી. બાબતેનો અભિપ્રાય.

સંદર્ભ: ૧) રા.મ.ન.પા./હિસાબી/જા.નં. ૧૨૦૯ તા. ૧૦/૮/૨૦૨૩
૨) રા.મ.ન.પા. ઇન્વર્ડ નં. ૮૧૨ તા. ૨૧/૦૮/૨૦૨૩

ઉપરોકત વિષય તથા સંદર્ભે અન્વયે જણાવવાનું કે, સંદર્ભ - ૧ અન્વયેના પત્રથી હિસાબી શાખા દ્વારા ઇ.પી.એફ. તથા ઇ.એસ.આઇ.સી. લાગુ પાડવા બાબતેનો અભિપ્રાય માંગવામાં આવેલ હતો જે અનુસંધાને પેનલના એડવોકેટશ્રી તરફથી સંદર્ભ - ૨થી અભિપ્રાય આવેલ છે. સદરહું અભિપ્રાય રાજકોટ મહાનગરપાલિકાની તમામ શાખાને તથા શાખા હસ્તકના કોન્ટ્રાકટરોને લાગુ પડતો હોય જેથી સંબંધિત તમામ શાખાને સદરહું અભિપ્રાય વંચાણે લેવા સુચિત કરવામાં આવે છે.

આ ઉપરાંત આપની શાખાના કર્મચારી તથા કોન્ટ્રાકટરશ્રીઓની ઇ.એસ.આઇ.સી. અન્વયેની માહિતી આપવાની બાકી હોય તે તમામે દિન - ૦૨માં પેનલના એડવોકેટશ્રીને માહિતી પહોંચતી કરે અને તેની જાણ લીગલ શાખાને કરે અન્યથા તેમાંથી ઉત્પન્ન થતી તમામ જવાબદારી માટે વ્યકિતગત રીતે જવાબદાર ઠેરવવામાં આવશે.

સદરહું પરિપત્રનો તાત્કાલિક અસરથી ચુસ્તપણે પાલન કરવું.

નાયબ કમિશનરશ્રી
રાજકોટ મહાનગરપાલિકા

બિડાણ: સંદર્ભ અન્વયેના પત્રો

નકલ સવિનય રવાના:

- નાયબ કમિશનરશ્રી (વે. ઝોન, ઇ. ઝોન)
- તમામ શાખાશિકારીશ્રીઓ (અમલ સારૂ)

રાજકોટ મહાનગરપાલિકા
જનરલ બ્રાંચ વિભાગ
ઈનવર્ડ નં. 2916
તારીખ 28/8/23

c-57

Shraddha Associates

LABOUR LAW CONSULTANT

Corrosp. Add. :
502, Accurate Square, Tagore Road,
Nr. Atul Motors, Above Cycle Zone, Rajkot.
Ph. O. 2463380, 93767 68952 E-Mail : dodiaparag@yahoo.in

Prop. : Parag J. Dodi
(Advocate & Labour Law Advisor)
Address : 2-Nalanda Bunglow
6-Pragati Society, Raiya Road, Rajkot-7

Ref.

Date : -૦૮-૨૦૨૩.

પ્રતિ,
લેબર ઓફીસરશ્રી,
રાજકોટ મહાનગરપાલીકા,
રા જ કો ટ.

વિષય :- ઈપીએફ તથા ઈએસઆઈસી લાગુ પડવા રામનપા/હીસાબી/જા.ન.૧૨૦૯ આબતે અભિપ્રાય.
રેફ. :- રા.મ.ન.પા./લીગલ/જા.નં. ૧૦૯૦, તારીખ ૧૦/૦૮/૨૦૨૩.

મે. સાહેબશ્રી,

સવિનય સાથ જણાવવાનું કે, ઉપરોકત વિષય અને રેફરન્સથી આપના તરફથી અભિપ્રાય માંગવામાં આવેલ. જેની સાથે મોકલેલ ફોર્મેટ મુજબ વિગતવાર રીમાર્કસ આપેલ છે.
રાજકોટ મહાનગરપાલીકાનાં શાખા અધિકારીએ બીલ બનાવતી વખતે બીલ બનાવતી વખતે નીચે મુજબનાં ડોકયુમેન્ટસ ચેક કરી બીલ સાથે સામેલ કરવા જરૂરી છે.

દર મહીને લેવાનાં ડોકયુમેન્ટ.

૧. પગારપત્રક (જેમાં દરેક કર્મચારી તથા કોન્ટ્રાકટરની સહી/સિકકો અને જે તે શાખા અધિકારીની સહી/સિકકો)
૨. હાજરી પત્રક.
૩. પી. એફ. ચલણ.
૪. પી.એફ. ઈ.સી.આર.
૫. ઈ.એસ.આઈ.સી. પેઈડ ચલણ.
૬. ઈ.એસ.આઈ.સી. લાગુ ન પડતો હોય તેવા કર્મચારી (રૂા.૨૧૦૦૦/- થી વધુ પગારવાળા) ની WC પોલીસી.
૭. પી.ટી. નાં ચલણ. (જે કર્મચારીનો પગાર રૂા.૧૨૦૦૦/- કે તેથી વધુ થતો હોય તેનાં.)

વાર્ષિક લેવાનાં ડોકયુમેન્ટ.

૧. જો ૫૦ કે તેથી વધુ માણસો કોન્ટ્રાકટરમાં કામ કરતા હોય તો લેબર લાઈસન્સ.
૨. લેબર વાર્ષિક પત્રક.
૩. બોનસ પત્રક.
૪. જે તે ડીપાર્ટમેન્ટને લાગુ પડતા સરકારશ્રીનાં લાયસન્સની નકલ (ફુડ , ઈલેકટ્રીસીટી વગેરે)

દરેક શાખા હસ્તકનાં કોન્ટ્રાકટર / એજન્સી ઉપરોકત સંદર્ભ અન્વયે પાલન કરાવવાની જવાબદારી મુખ્ય માલીક તરીકે જે તે શાખાનાં શાખા અધિકારીની ઠરાવી શકાય.

સહકારની અપેક્ષા સહ.

આપનો વિશ્વાસુ,
SHRADDHA ASSOCIATES
PROPRIETOR

બિડાણ :- ઉપર મુજબ.

લીગલ ઈન્વર્ડ નં. 812
સરકારી ઈન્વર્ડ નં. -
25/08/23

EPF તથા ESI લાગુ પડે છે કે કેમ ?

ક્રમ	વારંવાર ઉદભવતા પ્રશ્નો.	લાગુ પડે છે કે કેમ ?	
		EPF	ESI
1	કોમ્પ્યુટર ખરીદી કરી અને રાજકોટ મહાનગરપાલીકાની જગ્યામાં ઈન્સ્ટોલેશન કરવાનું થાય તો લાગુ પડે કે કેમ ?	ના	હા
2	રાજકોટ મહાનગરપાલીકાની જગ્યાનું સંચાલન કરતા કોન્ટ્રાકટર, વેન્ડર , ટ્રસ્ટ ને લાગુ પડે કે કેમ ? (જેમ કે સ્પોર્ટ સંકુલ, ગાર્ડન, પાર્કીંગ વગેરેનું સંચાલન કોન્ટ્રકટર, ટ્રસ્ટ સંસ્થા વગેરે ધ્વારા કરવામાં આવે)	હા	હા
3	રસ્તા કામ, ડ્રેનેજ કામ, પાણી વિતરણની કામગીરી સાથે સંકળાયેલા કોન્ટ્રાકટરોને લાગુ પડે કે કેમ ?	હા	હા
4	જનરલ બોર્ડનાં માઈક સંચાલનનાં કોન્ટ્રાકટમાં લાગુ પડે કે કેમ ?	હા	હા
5	રાજકોટ મહાનગરપાલીકાનાં ગ્રાઉન્ડ સંચાલન કરતા કોન્ટ્રાકટરોને લાગુ પડે કે કેમ ?	હા	હા
6	આઉટ સોર્સીંગ સ્ટાફનાં કીસ્સામાં વેન્ડરને લાગુ પડે કે કેમ ?	હા	હા
7	રાજકોટ મહાનગરપાલીકાનાં રેનબસેરાનું સંચાલન કરતા કોન્ટ્રાકટરોને લાગુ પડે કે કેમ ?	હા	હા
8	રાજકોટ મહાનગરપાલીકાની જગ્યામાં ઈવેન્ટમેનેજમેન્ટ કરવામાં આવે ત્યારે ઈવેન્ટમેનેજમેન્ટ કંપનીને તથા ગાયક / આર્ટીસ્ટ / મ્યુઝીશીયનને લાગુ પડે છે કે કેમ ?	ના	ના
9	મશીન / વાહન ફકત પાર્ટસ ખરીદીનાં કિસ્સામાં લાગુ પડે છે કે કેમ ?	ના	ના
10	મશીન / વાહન ફકત પાર્ટસ ખરીદી અને ફીટીંગ / રીપેરીંગ રાજકોટ મહાનગરપાલીકાની જગ્યામાં કરવામાં આવતુ હોય તેવા કિસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
11	મશીન / વાહન ફકત પાર્ટસ ખરીદી અને ફીટીંગ / રીપેરીંગ રાજકોટ મહાનગરપાલીકાની જગ્યામાં કરવામાં આવતુ હોય તેવા કિસ્સામાં લાગુ પડે છે કે કેમ ?	ના	ના
12	કોઈપણ ઈલેકટ્રીક વસ્તુની ખરીદી તથા તેનુ ઈસ્ટોલેશન જેમ કે કેમેરા લાઈટ ફીટીંગ, કોમ્પ્યુટર, પ્રીન્ટર વગેરે કીસ્સામાં લાગુપડે છે કે કેમ ?	ના	હા
13	મિત્ર મંડળ તથા સખી મંડળનાં કિસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
14	ઓપરેશન અને મેઈન્ટેનન્સ સર્વિસીઝ કોન્ટ્રાકટનાં કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
15	ટુર્સ / ટાવેલ્સ ભાડે રાખવામાં આવેલ ડાઈવર સહીત તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
16	ઈલેકટ્રીક પોલ ફીટ કરવા શિફટ કરવા અથવા નવા ઈન્સ્ટોલ કરવા વગેરે કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા

	EPF તથા ESI લાગુ પડે છે કે કેમ ?		
17	એર કુલર, એ.સી. , વોટર કુલર રીપેરીંગ વગેરે કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
18	રાજકોટ મહાનગરપાલીકાનાં કરાર આધારીત કર્મચારીનાં કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
19	રજીસ્ટેશન સમયે કુલ પગાર ઈ.પી.એફ. / ઈ.એસ.આઈ.સી. નાં નિયમ મુજબનાં પગારમર્યાદા કરતા ઓછી હોય પરંતુ ત્યારબાદ પગાર ઈપીએફ, ઈએસઆઈસી નાં નિયમ મુજબ પગાર મર્યાદા કરતા વધી તો કયાં સુધી કપાત કરવી. (ફીકસમાંથી કાયમીનાં કીસ્સામાં / ફીકસ પગાર વધી જાય તેવા કીસ્સામાં)	હા	ના
20	ફીકસ / કાયમી થાય તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
21	વાલ્વ ઓપરેટર તથા પમ્પ ઓપરેટરનાં કીસ્સામાં લાગુ પડે છે કે કેમ?	હા	હા
22	લીગલ, પ્રોફેશનલ સર્વિસ રાજકોટ મહાનગરપાલીકાની જગ્યા પર આપવામાં આવે તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
23	રાજકોટ મહાનગરપાલીકા ધ્વારા વિડીયોગ્રાફી / ફોટોગ્રાફી કરાવવામાં આવે તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
24	રાજકોટ મહાનગરપાલીકાની જગ્યામાં ઝેરોક્ષ મશીન ચલાવે તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	ના	ના
25	ન્યુઝ પેપર અથવા કોઈપણ વસ્તુ કે જેની ખરીદી કરી હોય અને જે રાજકોટ મહાનગરપાલીકાના પ્રીમાઈસીસ સુધી પહોંચાડવાની જવાબદારી વેન્ડરની હોય તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	ના	ના
26	રાજકોટ શહેરમાં મોબાઈલ ડિસ્પેન્સરી ચલાવવા આપવામાં આવે તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
27	ફકત એક વખત કામગીરી કરવાની હોય તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	ના	ના
28	હોર્ડીંગ બોર્ડ ચડાવવા તથા ઉતારવાની કામગીરીનો એજન્સીને કોન્ટ્રાકટ આપેલ હોય તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
29	રાજકોટ મહાનગરપાલીકાની જગ્યામાં કાર્ટીઝ રીપેરીંગ તથા રીફીલીંગ તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા
30	કેટરીંગ સર્વિસ અથવા હોટલમાંથી ફુડ પાર્સલ તેમજ કુરીયર સર્વિસ રાજકોટ મહાનગરપાલીકાને ડીલીવરી કરવામાં આવે તેવા કીસ્સામાં લાગુ પડે છે કે કેમ ?	ના	ના
31	સોલાર પેનલ તથા રૂફ ટોપ સોલાર પેનલનાં રાજકોટ મહાનગરપાલીકાની જગ્યામાં ઈન્સ્ટોલેશન તથા મેઈન્ટેનન્સનાં કીસ્સામાં લાગુ પડે છે કે કેમ ?	હા	હા

રાજકોટ મહાનગરપાલિકા
સોલિડ વેસ્ટ મેનેજમેન્ટ શાખા
WOW Cell
'ડો. આંબેડકર ભવન, ઢેબરભાઇ રોડ, રાજકોટ

Azadi@75 મારું રાજકોટ સ્વચ્છ રાજકોટ
સ્વચ્છ સર્વેક્ષણ
#MeraShahar,MeriPehchan 2024

રા.મ.ન.પા./સો.વે.મે./જા.નં.-6445 તા.30-03-2024

હુકમ:

સંદર્ભ: રા.મ.ન.પા./સો.વે.મે./જા.નં ૮૬૬, તા. ૦૪-૦૬-૨૦૧૯

રાજકોટ મહાનગરપાલિકા વિસ્તારમાં વિકાસ કામો અને બાંધકામ પ્રવૃત્તિનો ખૂબ જ ઝડપથી વિકાસ થઈ રહેલ છે. જેના પરિણામે શહેરમાં કન્સ્ટ્રક્શન એન્ડ ડિમોલિશન વેસ્ટ પણ ખૂબ બહોળા પ્રમાણમાં ઉત્પન્ન થાય છે. આથી તેના કલેક્શન તથા યોગ્ય પદ્ધતિથી નિકાલની ખૂબ જ વિકટ સમસ્યા ઊભી થાય છે. કન્સ્ટ્રક્શન એન્ડ ડિમોલિશન (સી & ડી) વેસ્ટ રૂલ્સ -2016 પ્રમાણે આ વેસ્ટનું કલેક્શન, સ્ટોરેજ તથા પ્રોસેસિંગ કરી યોગ્ય નિકાલ કરવો જરૂરી છે. જે અન્વયે આ અગાઉ ઉપરોક્ત સંદર્ભિત હુકમથી શહેરમાં ઉત્પન્ન થતા સી & ડી વેસ્ટના નિકાલ અન્વયેની માર્ગદર્શિકા નિયત કરવામાં આવેલ. જેની વધુ અસરકારકતા તથા કાર્યક્ષમતા સાથે પરિણામલક્ષી કામગીરી થઇ શકે તે માટે હવે પછીથી નીચે જણાવ્યા મુજબની વિગતે અમલવારી કરવા હુકમ કરવામાં આવે છે.

(૧) રાજકોટ મહાનગરપાલિકાની ટાઉન પ્લાનિંગ શાખા દ્વારા શહેરમાં આવેલ હયાત/જુના બાંધકામ ધરાવતી ઈમારતોને સ્થાને નવું બાંધકામ કરવા માટેની બાંધકામ પરવાનગી ઇસ્યુ કરતા પહેલા હાલની વ્યવસ્થા મુજબ જે ડિમોલિશન ચાર્જ લેવામાં આવે છે તેની સાથે શહેરમાં આવેલ આવી જૂની ઈમારતોનું બાંધકામ માલિક/કબજેદાર/ડેવલપર દ્વારા દૂર કરવાથી કેટલો સી & ડી વેસ્ટ ઉત્પન્ન (Generate) થશે તે બાંધકામ પરવાનગી અર્થે પ્લાન સહીતની વિગતો રજૂ કરનાર પરવાનેદાર એન્જિનિયરશ્રી/આર્કિટેકટશ્રી મારફત પ્રમાણિત કરાવી તેના જથ્થા મુજબ અને બાંધકામની પરવાનગીના પ્રકાર મુજબ આ ઉત્પન્ન થનાર સી & ડી વેસ્ટને નાકરાવાડી ખાતે આવેલ સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટ ખાતે નિકાલ કરવા માટેની ડિપોઝિટની રકમ પેટે રૂપિયા ૫૦૦૦/- (અંકે રૂપિયા પાંચ હજાર પુરા) વસુલવાની રહેશે. આ પ્રકારના તમામ કિસ્સાઓમાં ડીપોઝીટની રકમ જમા થયા બાદ જ ટાઉન પ્લાનિંગ શાખા દ્વારા શરતી બાંધકામ પરવાનગી (Conditional Permission) આપવાની રહેશે, તથા સદરહુ શરતી બાંધકામ પરવાનગીમાં સંલગ્ન જૂની ઈમારતના સી & ડી વેસ્ટને ટ્રાન્સપોર્ટ કરી સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટ ખાતે મોકલી આપવામાં આવ્યાનું પ્રમાણિત થયા બાદ જ ટાઉન પ્લાનીંગ શાખા દ્વારા બાંધકામ પરવાનગી આપવામાં આવશે અને ત્યારબાદ જ અરજદારશ્રી દ્વારા નવું બાંધકામ શરૂ કરવાનું રહેશે તેવો ઉલ્લેખ કરવાનો રહેશે.

શરતી બાંધકામ પરવાનગી મેળવ્યા બાદ અરજદારશ્રી દ્વારા તેઓના જુના મકાન/ઈમારતના ડીમોલીશનને કારણે નીકળેલ સી & ડી વેસ્ટને રાજકોટ મહાનગરપાલિકાના નાકરાવાડી ખાતે આવેલ સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટ પર મોકલવાની વ્યવસ્થા કરી નિકાલ કરવાનો રહેશે, તથા સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટ ખાતેથી આ અંગેની પહોંચ (રીસીપ્ટ)/પ્રમાણપત્ર મેળવી લેવાનું રહેશે.

સી. & ડી. વેસ્ટ પ્રોસેસિંગ પ્લાન્ટ ખાતે શહેરમાંથી સી & ડી વેસ્ટના નિકાલ અર્થે આવેલ મટીરીયલ અંગેનું રજીસ્ટર નિભાવવાનું રહેશે, તથા પ્લાન્ટ ખાતે સી & ડી વેસ્ટ લઇને આવેલ તમામ વાહન તથા તેના સી & ડી વેસ્ટના જથ્થાની નોંધ ઓનલાઈન નિયત એપ્લીકેશનમાં કરવાની રહેશે. પ્લાન્ટ ખાતે મેળવવામાં આવેલ સી & ડી વેસ્ટ મટીરીયલની પહોંચ (રીસીપ્ટ)/પ્રમાણપત્ર આપવા અંગેની જરૂરી તમામ વ્યવસ્થા સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટની એજન્સી દ્વારા કરવાની રહેશે.

ટાઉન પ્લાનિંગ શાખા દ્વારા ઉપરોક્ત જણાવ્યા મુજબ જુના બંધકામ/ઈમારતના ડીમોલીશનને કારણે ઉત્પન્ન થયેલ સી & ડી વેસ્ટને અરજદારશ્રી દ્વારા નાકરાવાડી ખાતેના સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટ ખાતે

મોકલ્યાની ખરાઇ (Confirmation) કર્યા બાદ જ અરજદારશ્રી દ્વારા જમા કરવામાં આવેલ ડીપોઝીટની રકમ રૂ.૫૦૦૦/- (અંકે રૂપિયા પાંચ હજાર પુરા) પરત કરી બાંધકામ પરવાનગી ઇસ્યુ કરવાની રહેશે.

(૨) ટાઉન પ્લાનિંગ શાખા દ્વારા કન્સ્ટ્રક્શન એન્ડ ડીમોલિશન વેસ્ટ રૂલ્સ 2016 ની માર્ગદર્શિકા મુજબ શહેરમાં જૂનો ઇમલો દૂર કરનાર એજન્સીઓ - કોન્ટ્રાક્ટરો દ્વારા સી & ડી વેસ્ટનું કલેક્શન તથા તેનું જરૂરી સેગ્રીગેશન કરી રાજકોટ મહાનગરપાલિકાના નાકરાવાડી ખાતે આવેલ સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટ ખાતે નિકાલ કરવાનું ફરજીયાત હોવાની બાબતની સમજ આપી તેઓનું રજીસ્ટ્રેશન કરાવી રાજકોટ મહાનગરપાલિકાની વેબસાઇટ પર શહેરમાં ઈમલો દૂર કરવાની કામગીરી કરતી આવી તમામ એજન્સીઓ – કોન્ટ્રાક્ટરોની યાદી મૂકવાની રહેશે.

(૩) સોલિડ વેસ્ટ મેનેજમેન્ટ વિભાગ દ્વારા હાલ રાજકોટ મહાનગરપાલિકાના ત્રણેય ઝોનના જુદા જુદા વોર્ડ – વિસ્તારના પ્લોટ તથા રસ્તાઓની સાઈડમાં પડેલ સી & ડી વેસ્ટને કલેકટ કરી નાકરાવાડી ખાતે આવેલ સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટની જરૂરીયાત મુજબ પ્લાન્ટ ખાતે પહોંચાડવા (Transportation) ની વ્યવસ્થા કરવાની રહેશે, તથા શહેરના જાહેર રસ્તાઓ કે રાજકોટ મહાનગરપાલિકાના પ્લોટ પર અનઅધિકૃત રીતે સી & ડી વેસ્ટ ડમ્પિંગ ન થાય તે અંગેની તકેદારી રાખવા માટેની જરૂરી વ્યવસ્થા ઉભી કરવાની રહેશે.

(૪) રાજકોટ મહાનગરપાલિકાની તમામ તાંત્રિક શાખા દ્વારા તેમના કાર્યક્ષેત્ર હેઠળ સિવિલ કામ કરતી તમામ એજન્સીઓ (ઝોનલ તથા ટેન્ડર કામ) ને સોંપવામાં આવેલ સિવિલ કામગીરી અંતર્ગત ઉત્પન્ન થનાર સી & ડી વેસ્ટના સંપૂર્ણ જથ્થાનો નિકાલ રાજકોટ મહાનગરપાલિકાની નાકરાવાડી ખાતે આવેલ સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટ ખાતે કરાવવાનો રહેશે.

આ માટે ઉત્પન્ન થયેલ સી & ડી વેસ્ટના જથ્થાને સંલગ્ન તાંત્રિક કામગીરી સંભાળતા એ.એ.ઈ.શ્રી તથા એ.ઈ.શ્રી દ્વારા તેમના નાયબ કાર્યપાલક ઇજનેરશ્રી મારફતે પ્રમાણિત કરાવી તે સી & ડી વેસ્ટના જથ્થાને સિવિલ કામની સંલગ્ન એજન્સી દ્વારા ટ્રાન્સપોર્ટેશનની વ્યવસ્થા કરી શહેરમાં અન્ય કોઈપણ જગ્યાએ નિકાલ ન કરી માત્ર નાકરાવાડી ખાતે આવેલ સી & ડી વેસ્ટ પ્રોસેસિંગ પ્લાન્ટ ખાતે જ જમા કરાવવાનો રહેશે, તથા પ્લાન્ટ ખાતેથી તે અંગેની પહોંચ (રીસીપ્ટ)/પ્રમાણપત્ર મેળવવાનું રહેશે. જે પહોંચ (રીસીપ્ટ)/પ્રમાણપત્ર સંલગ્ન તાંત્રિક શાખામાં રજુ થયા બાદ તેને સંલગ્ન તાંત્રિક સ્ટાફ દ્વારા ચકાસણી કર્યા બાદ જ સંલગ્ન નાયબ કાર્યપાલક ઇજનેરશ્રી દ્વારા એજન્સીએ કરેલ કામની રકમનું ચૂકવણું કરવા માટેની બીલ અંગેની કાર્યવાહી હાથ ધરવાની રહેશે.

(૫) રાજકોટ શહેરમાં ઉત્પન્ન થનાર સી & ડી વેસ્ટનો મહત્તમ રીયુઝ તથા રિસાયકલ થાય તે માટે કઈ કઈ બાંધકામ ઉપયોગી વસ્તુઓ (મટીરીયલ) બનાવી શકાય તથા તે તમામ મટીરીયલનો રાજકોટ મહાનગરપાલિકાના વિવિધ તાંત્રિક કામોમાં ઉપયોગ થાય તેવા મટીરીયલનો રાજકોટ મહાનગરપાલિકાના શેડ્યુલ ઓફ રેઇટસ (S.O.R.) માં સમાવેશ કરવા તથા રાજકોટ મહાનગરપાલિકાના વિવિધ સિવિલ કામમાં તેનો ઉપયોગ થાય તે સુનિશ્ચિત કરવા માટેની જરૂરી કાર્યવાહી હાથ ધરવાની રહેશે.

ઉપરોક્ત વિગતે સોંપવામાં આવેલ કામગીરીનો રિપોર્ટ નાયબ કમિશનરશ્રી (ઈસ્ટ ઝોન)ને કરવો. સદરહુ હુકમનો અમલ તાત્કાલિક અસરથી યુસ્તપણે કરવાનો રહેશે.

કમિશનર
રાજકોટ મહાનગરપાલિકા