GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED
AM CIRCLE OFFICE, GONDAL - 360311
Telephone No. (02825) - 220121, Fax No. (02825) 240457
E-mail: setrgondal.getco@gebmail.comWebsite: www.getcogujarat.com

E-TENDER FOR THE WORK OF

"Retrofitting & Renovation of Control Room Building & misc civil works at 66 KV Jetpar S/S under Morbi AM Division under GONDAL AM Circle. Retender"

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GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED
AM circle office, Gondal
Power House Compound, Station Plot, Gondal - 360 311
(CIN: U40100GJ1999SGC036018)
Telephone no. (02825) - 220121, fax no. (02825) 240457
Web site: www.getcogujarat.com Email: setrgondal.getco@gebmail.com

E - TENDER NOTICE

SE invites "On line Tenders" (e-tendering) for the **"Retrofitting & Renovation of Control Room Building & misc civil works at 66 KV Jetpar S/S under Morbi AM Division under GONDAL AM Circle. Retender"** From registered Contractors in appropriate class with GETCO / Central / State Government / Railway/Semi. Govt. and who has executed civil works successfully as mentioned in Qualification requirement criteria given in the tender document. Bidders should fulfill the all the qualification criteria. Otherwise, their bids will not be considered & price bid will not be opened. All the bidders should have valid e-tender vender registration.

Tender papers & specifications may be down loaded from web site https://tender.nprocure.com **(for view, download and online submission)** and GUVNL/GETCO websites www.guvnl.com & www.getcogujarat.com **(for view & download only).All tender documents are to be uploaded through online only (mandatory) on (n) procure portal including scanned copy of duly attested Tender fee, EMD and Integrity Pact. Tender fee, EMD (if by CASH up to Rs. 10,000/-only) is to be submitted physically by Registered Post A.D. or Speed Post addressed to:**

NO PHYSICAL DOCUMENTS TO BE SUBMITTED BY BIDDER

The Superintending Engineer
Gujarat Energy Transmission Corporation Limited.,
Circle office Gondal
Power House Compound, Station Plot,
Gondal - 360 311 District: Rajkot, Gujarat

"NO COURIER SERVICE OR HAND DELIVERY" will be allowed

Sr. No.	Name of Work	Tender Cost Rs. (Incl. Taxes)	Time Limit	Tender Fee Rs.	E.M.D. Rs.	Appropriate class
123/2026	"Retrofitting & Renovation of Control Room Building & misc civil works at 66 KV Jetpar S/S under Morbi AM Division under GONDAL AM Circle Retender."	Rs.988786.97	03 Months	1062.00/- [900.00 + 162.00 (GST at 18.00%)]	9888.00	Class - E-2 & Above
1	On line (E-tendering) tender/ offer submission last date up to 16.00 hours only (This is mandatory)				02/12/2026	
2	Date of opening of Tender Fee, EMD and technical bid - on line opening at 16:01 hrs. (If possible)				02/12/2026	
3	Tentative Date of on - line opening of Price bid,				Shall be intimated separately.	

IMPORTANT:

1. Bidder has to upload scanned copies of original (Notarized/self-attested copies of original – as specified in tender document) documents with bid and **no physical documents to be submitted by bidder.**
2. Bidder has to submit the only Tender fee, EMD (**by CASH up to Rs 10,000/- only**) in sealed cover superscripted with the Tender for **"Retrofitting & Renovation of Control Room Building & misc civil works at 66 KV Jetpar S/S under Morbi AM Division under GONDAL AM Circle Retender."** & **"Tender Notice No.140/2026"** on or before due date and time. All such documents should be strictly submitted by RPAD / Speed Post only. Otherwise, the offer will not be considered and no any further communication in the matter will be entertained.
3. Bidders have to submit Technical bid as well as Price bid in electric format only on above-mentioned website until the date and time shown above. It is required that physical submission of only tender fees, EMD by Cash **(up to 10,000/- only)** to be done. **However, of anywhere in tender documents submission of other than this document physical submission mentioned to be overlooked.**
4. The transaction slip of payment made by RTGS/NEFT is to be uploaded in N - procure with tender documents.
5. Submission and Evaluation of Documents / Clarification.

   5.1 The Bidder shall submit/upload all the documents, certificates, declarations, statements and other information required under the Tender Document along with its original online bid within the stipulated date and time for submission of bids. The Bidder shall be solely responsible for ensuring completeness, correctness, legibility and validity of all such documents.

   5.2 The Technical/Qualification Requirement (QR) evaluation of the bid shall be carried out only on the basis of the Data / Details / Documents submitted/uploaded by the Bidder as part of its original online offer on or before the stipulated last date and time for submission of the bid.

   5.3 After the stipulated last date and time for submission of bids, no new, additional, substitute or replacement document shall be accepted or considered for establishing or improving the eligibility, Qualification Requirement (QR), technical qualification or experience of the Bidder.

   5.4 In case any document, certificate, work order, completion certificate, experience certificate, registration certificate or other document required for establishing the eligibility/QR of the Bidder has not been submitted/uploaded with the original online bid, the same shall not be subsequently submitted or considered for establishing or improving the eligibility/QR of the Bidder.

   5.5 The Owner/Tendering Authority may, wherever considered necessary, seek clarification only in respect of the Data / Details / Documents already submitted/uploaded by the Bidder with its original online offer, provided that such clarification does not result in any change, addition, substitution or improvement in the substance of the original bid or in the eligibility/QR of the Bidder.

   5.6 No clarification shall be sought or accepted for introducing a new experience, new work order, new completion certificate or any other new document which was required to be submitted with the original online bid but was not submitted/uploaded within the stipulated bid submission period.

   5.7 No post-bid clarification or document submitted voluntarily by the Bidder shall be considered for evaluation. Any clarification, if required by the Owner/Tendering Authority, shall be sought in writing and shall be limited to the original online submission.

   5.8 In case the required Data / Details / Documents are not available in the original online offer, the bid shall be evaluated on the basis of the documents actually submitted/uploaded with the original online bid and dealt with in accordance with the Tender conditions.

5.9 In case any document uploaded/submitted by the Bidder along with the original online bid is found to be unreadable, illegible, corrupted, damaged or otherwise not accessible/openable, the Owner/Tendering Authority may seek clarification/re-submission only for such document(s) which are specifically required as per the duly filled online Annexures submitted by the Bidder, and only to the extent permissible under the Tender Conditions.

If the Bidder has not duly filled the relevant online Annexure(s), or has merely mentioned "As per attached documents" or any similar general remark in place of providing the required details in the prescribed Annexure(s), then no further communication, clarification or opportunity for submission/re-submission of such document(s) shall be entertained, and the bid shall be evaluated on the basis of the documents/data available in the original online offer.

The responsibility for ensuring that all uploaded documents are complete, properly filled, legible, accessible, valid and correctly linked/referenced through the prescribed Annexures shall rest solely with the Bidder.

6. It shall be sole responsibility of the bidder that the uploaded scanned documents (in PDF from) remain legible and should not be password protected.
7. Evaluation of Online Offer:

   Tender shall be evaluated on the basis of the Data / Details / Documents forming part of the original online offer submitted/uploaded by the Bidder on or before the stipulated last date and time for submission of the bid.

   No new, additional, substitute or replacement document submitted after the stipulated last date and time for submission of the bid shall be considered for establishing or improving the eligibility, Qualification Requirement (QR), technical qualification or experience of the Bidder.

   Clarification, if any, shall be governed strictly by Clause No. 6 of the Tender Document and shall not result in any change or improvement in the substance of the original bid.

8. It is mandatory for all the bidders to upload their tender documents by on line (E-tendering) in scheduled time.
9. Any deviation found in Data/Details/Documents in on line offer (e tendering) (Tender document fee, EMD, Vendor Registration, Technical and commercial documents etc.) of bidder, offer of the same bidder will not be considered and no any further communication in the matter will be entertained. Physical copy is for reference only and tender will be evaluated on Data/Details/Documents of the "on line" offer. **For any discrepancy between online & physical bid, online bid is considered as final.**
10. Online Annexures and Supporting Documents:
    Bidders shall fill all online Annexures, wherever required, and shall upload all supporting authentic documents as specified in the Tender Document.

    The Bidder shall ensure that all documents required for establishing eligibility, Qualification Requirement (QR), technical qualification and experience are duly uploaded/submitted along with the original online bid within the stipulated date and time for submission of the bid.

    The responsibility for submission/uploading of complete and valid documents required under the Tender Document shall rest solely with the Bidder.

    In case any required Data / Details / Documents are not submitted/uploaded with the original online bid, the same shall not subsequently be accepted or considered for establishing or improving the eligibility/QR, except for clarification strictly within the scope permitted under Clause No. 5.

The Owner reserves the right to evaluate the bid on the basis of the Data / Details / Documents available in the original online offer and in accordance with the provisions of the Tender Document.

11. Bidders are requested to remain in touch with the web site for any amendment/corrigendum or extension of due date etc.
12. No tender shall be accepted/opened in case of receipt after due date and time of tender, irrespective of delay due to postal services or any other reasons and the Corporation shall not assume any responsibility for late receipt of tender.
13. The Earnest Money Deposit and tender fee will be accepted by RTGS/NEFT **or in Cash up to Rs. 10,000/- Tender without EMD and tender fee** shall be rejected.
14. Submit completely tender document with seal and signature in all Tender pages with LOA (letter of acceptance) by Lowest-1 bidders.
15. The GETCO reserves the right to award the work to one or more bidders, considering their technical and financial capacity OR to reject any or all tenders or accept any tender without assigning any reason thereof.
16. The Performance Certificate / Certificate of Satisfactory Completion submitted against the qualifying work experience shall be issued by the competent authority of the organization for which the work was executed, as under:

    1. **For works executed for GETCO**: The Performance Certificate / Certificate of Satisfactory Completion shall be issued and signed by the **Chief Engineer of the concerned/related department of GETCO** under whose jurisdiction the work was executed.

    2. **For works executed for other Government Departments / Government Organizations / PSUs / Boards / Corporations / Local Authorities or other organizations**: The Performance Certificate / Certificate of Satisfactory Completion shall be issued and signed by the **Order Placing Authority** of the concerned organization, or by an officer duly authorized by the Order Placing Authority to issue such certificate.

    3. The certificate shall clearly indicate, at minimum, the **name of the work, Work Order/Contract No. and date, name of the contractor, scope/nature of work, contract value, actual executed value, date of commencement, date of completion and performance/completion status** of the work.

    4. Certificates issued by any other officer/authority not meeting the above requirements shall **not be considered for establishing the requisite qualifying experience, unless specifically accepted under the provisions of the tender. For Civil Works, the certificate shall also indicate the amount of penalty / Liquidated Damages (LD), if any, levied/recovered for extension of time/delay in completion of the work. Further, the certificate shall indicate the actual quantum of major works executed, such as Concrete/RCC, Reinforcement, Pile Diameter, number of piles, total pile length/depth and other major/specialized items relevant to the qualifying criteria prescribed in the tender.**

    5. The Tender inviting authority reserves the right to **verify the authenticity of the Performance Certificate / Certificate of Satisfactory Completion and the particulars stated therein from the concerned client organization.**

6. Also if required, work placing authority may ask the supply documents from the bidder like work order, work completion certificate etc.

Any technical questions, information and clarification that may be required pertaining to this enquiry should be referred to **The Superintending Engineer, Gujarat Energy Transmission Corporation Limited. Circle office Gondal.**
GETCO reserves the right to reject any OR all tenders without assigning any reasons thereof.

Yours faithfully,

(P K Varsada)
Superintending Engineer
Am Circle Office,
GETCO, Gondal

To view the PDF file please use "Acrobat Reader" software which can be downloaded from 'Adobe" website.

In case bidders need any clarifications or if training required to participate in online tenders, they can contact (n)Procure Support team:- (n)code Solutions-IT division of GNFC Ltd., (n)Procure Cell 304, GNFC Info tower, S.G. Road, Bodakdev, Ahmedabad – 380054 (Gujarat) **Contact Details** Phone : +91-79-40007517, 40007514, 40007515. E-mail : nprocure@ncode.in TOLL FREE NUMBER: 73590 21663

EMD refund application should be submit in Hardcopy with Attached documents with required RTGS detail in standard Format attached herewith

Special instruction if tender **Fee & EMD to be paid by NEFT/RTGS**

1. **The Tender fee should be submitted by RTGS/NEFT/online.**
2. The EMD fee amount is should be paid by either **by Cash up to Rs. 10,000/- otherwise it should be paid by RTGS/NEFT/online only.**
3. **In case of payment through RTGS/NEFT/online Bidder has to provide all below details by email on the same date of payment So that receipt can be generated.**

   A. **The transaction slip.**

   B. **Copy of Bank Statement (appeared Transition).**

   C. **Following details should be submitted on party's letter pad**

Sr. No	Required Details
1	Name Address of the bidder
2	**Bidder GST No**
3	**Tender No** -
4	Due date of tender-
5	Mode of Transfer
6	Ref.ID with Bank Details (**UTR number)**
7	Paid Amount **Tender Fee - Rs.**
8	Paid Amount **EMD- Rs.**

A. Bidder has to mail above details to
[1] cashier.gondalcircle@gebmail.com
[2]supdtgdl.getco@gebmail.com,
[3]decivilrnmcogondal.getco@gebmail.com

GETCO Beneficiary Bank detail is as under

Sr.	Particulars	Requisite Details
1	Name of Account Holder	GUJARAT ENERGY TRANS CORPO LTD
2	Account No.	66000402915
3	Name of Bank	STATE BANK OF INDIA
4	Branch Code	60073
5	Address of Bank	M G ROAD, GONDAL
6	IFSC Code	SBIN0060073
7	PAN No	AABCG4029R
8	TAN No	RKTG00914E
9	GST No	24AABCG4029R2ZC

Note: Please Mention Tender number during Online Transaction of Tender fee and EMD.

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Date:

INTEGRITY PACT

OUR ENEAVOUR

To create environment where Business Confidence is built through Best Business Practices and is fostered in an atmosphere of trust and respect between providers of goods and services and their users for the ultimate benefit of society the nation.

GETCO COMMITMENT	PARTY'S COMMITMENT
▪ To maintain the highest ethical standards in business and professional.	▪ Not to bring pressure / recommendations outside GETCO to influence its decision.
▪ Ensure maximum transparency to the Satisfaction of stakeholders.	▪ Not to use intimidation, threat, inducement or Pressure of any kind on GETCO or any of its employees under any circumstances.
▪ To ensure to fulfill the terms of agreement / contract and to consider objectively the viewpoint of parties.	▪ To be prompt and reasonable in fulfilling the contract, agreement, legal obligations.
▪ To ensure regular and timely release of payment on due dates for work done.	▪ To provide goods and / or services timely as per agreed quality and specifications at minimum cost of GETCO.
▪ To ensure that no improper demand is made by employees or by anyone on our behalf.	▪ To abide by the general discipline to be maintained in out dealings.
▪ To give maximum possible assistance to all the vendors / supplier / Service provider and other to enable them to complete the contract in time.	▪ To be true and honest in furnishing information including payment to agents / sub-agent.
▪ To provide all information to suppliers / contractors relating to contract / job which facilitate him to complete the contract / job successfully in time.	▪ Not to divulge any information, business details available during the course of business relationship to others without the written consent of GETCO.
_____ **Seal & Signature** **(GETCO Authorized Signatory)**	_____ **Seal & Signature** **(Party's Authorized Person)**
Name: Designation:	

PART.II
Technical Specification & Commercial Conditions

SECTION – A
INSTRUCTIONS TO THE BIDDERS

GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED
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(A) INSTRUCTIONS TO THE BIDDERS

(A1) SCOPE OF WORK:

Major works covered in this work are of the "Retrofitting & Renovation of Control Room Building & misc. civil works at 66 KV Jetpar S/S under Morbi AM Division under GONDAL AM Circle Retender."

(1) The site of proposed work is situated at **66KV Jetpar s/s under Gondal circle.** The works shall be carried out as per tender's specifications & detailed work order.

(2) Any activity not specifically mentioned in the tender but necessary in the opinion of engineer in charge of work must be carried out for successful completion of the job, on getting approval of competent authority of GETCO.

(3) Before taking up construction activity; the agency has to cut the trees which obstruct the working, of any diameter, bushes, vegetation, i.e. roots, plant, shrubs, grass etc. including stacking and crediting to GETCO as directed with no extra cost.

(4) Site visit: The bidder is advised to visit the site and examine the site condition. Where in the work is proposed to be carried out and to get himself fully acquainted at his own responsibility for all information that may be necessary for quoting the tender bid and entering in to contract. All cost and liabilities arising out of the site visit shall be at bidder account.

(A2) EARNEST MONEY DEPOSIT:

A. Bidders are requested to pay an earnest money deposit (As per GETCO purchase policy) by RTGS/ NEFT or by Cash (up to Rs. 10,000/- only) for the amount as specified in the tender notice. Payment of EMD in form of Cheque shall not be accepted.
B. If the EMD amount is more than Rs. 3 Lacs, it should be paid by RTGS/NEFT/Online or Demand draft or Banker's Cheque or Pay order or Bank Guarantee, otherwise RTGS/NEFT/online
C. In case of payment through RTGS/NEFT/ Demand Draft/ Banker's Cheque/ Pay Order, the scanned copy of original document/Payment slip shall have to be uploaded with the bid.
D. Tenders no accompanied by EMD shall be rejected.
E. If during the tender validity period, i.e. 180 days, the tenderer withdraws his tender, the EMD shall be forfeited and the tenderer may be disqualified from tendering for future works of GETCO. Validity of the offer for 180 days from the date of opening of the technical bid
F. The EMD will be returned promptly to the unsuccessful tenderer. The EMD will be returned to the successful tenderer after he furnishes the Security Deposit for performance and duly enters into the contract. If he fails to furnish the SD or to execute the contract for the work offered to him, his EMD shall be forfeited and the tenderer may be disqualified from tendering for further works for GETCO.
G. All the Bidders shall be required to pay EMD, except those who are exempted as per Industries & Mines Department, GoG New Purchase Policy Resolution No. SPO/1095/2636(97)/CH dated 23.09.1997 for Small and Micro Scale Industries.

H. In cases, where EMD need not to be paid, valid exemption Certificates Duly Notarized has to be produced / attached in place of EMD documents as per the Tender Terms and Conditions.

I. The Micro and Small Scale Industrial (manufacturing) Units registered under Small Scale Industries of Gujarat State and holding subsequent registration with CSPO / NSIC / DGS&D, Registration Certificates for the item under Tender will be eligible for exemption from payment of EMD on submission of attested copies of their SSI (SSI/ MSME Part-II) & CSPO / NSIC / DGS&D Registration Certificates in EMD Cover. This benefit of exemption will not be admissible if they take part in the tender indirectly either through their dealers, agents, distributors or other intermediators.

J. The Certificates should indicate the manufacture of items offered.

K. Government or Semi-Government Organizations, which are being run departmentally & are not Limited Companies, will be eligible for exemption from payment of EMD.

L. Participant not covered under these categories mentioned at Clause No.2.8 will have to pay EMD compulsory, as prescribed below, failing which the "Bid" will be treated as "Disqualified Bid" and automatically stand as "Rejected Bid" at the time of opening of Preliminary / Technical Bid.

(A) Guarantees issued by the following Banks will be accepted as SD / EMD on permanent basis.
1. All Nationalized Banks.

(B) Guarantees issued by following Banks will be accepted as SD /EMD **for the period up to March31,2027** Or the issuance of new Government Resolution on the same subject whichever is earlier. The validity cut – off date in GR is with respect to date of issue of Bank Guarantee is irrespective of date of termination of Bank Guarantee.

No.	Bank Name	No.	Bank Name
1	AXIS Bank	23	South Indian Bank
2	AU Small Finance Bank	24	Standard Chartered Bank
3	Bandhan Bank	25	Tamilnad Mercantile Bank
4	City Union Bank	26	Ujjivan Small Finance Bank
5	CSB Bank	27	YES Bank
6	DBS Bank India Limited	28	Ahmedabad Mercantile Co-Op Bank
7	DCB Bank	29	Nutan Nagrik Sahkari Bank Ltd.
8	Dhanlaxmi Bank	30	Rajkot Nagrik Sahkari Bank Ltd
9	Equitas Small Finance Bank	31	Saraswat Co-Operative Bank Ltd
10	FEDERAL Bank	32	SBPP Co-operative Bank Ltd.
11	HDFC Bank	33	SVC Co-Operative Bank Ltd.
12	HSBC Bank	34	The Cosmo Co-Op Bank Ltd.
13	ICICI Bank	35	The Gujarat State Co-Operative Bank
14	IDBI Bank	36	The Surat District Co-Operative Bank
15	IDFC First Bank	37	The Surat People's Co-Op. Bank Ltd
16	IndusInd Bank	38	The Baroda CentraI Co-operative Bank
17	Jammu and Kashmir Bank	39	The Panchmahal District Co-Operative Bank
18	Jana Small Finance Bank	40	The Kalupur Commercial Co-Op. Bank
19	Karnataka Bank	41	The Rajkot Commercial Co-operative Bank
20	Karur Vysya Bank	42	The Banaskantha Mercanttile Co-op. Bank
21	Kotak Mahindra Bank	43	Gujarat Gramin Bank
22	RBL Bank		

(A3) COMPLETION PERIOD:

- **"The time limit for the completion of the above work will be 3 (Three) calendar months from the commencement of the work, which will be given separately by engineer in charge as per tender condition."**

- One month additional will be considered for the rainy season if the scheduled execution period falls within the period from 1st July to 31st October. In case the duration of execution is not exactly falls for a period of 1st July to 31st October, the proportionate days shall be given based on the duration falls between periods 1st July to 31st October. e.g.
  - if entire duration falls between 1st July to 31st October, 30 days allowable towards rainy days.
  - If the execution period falls short by four months, then the proportionate days shall be calculated based on following formula:
    Delay allowable on account of rainy period = 30 x N / 120
    Where N=Number of days falling between period 1st July and 31st October.
    Note: While applying this formula no extension of time limit shall be permitted on account of delay due to rain.
- 15 days additional will be considered where hard rock strata are available.
- Delay due to power supply will be considered in TLE only if the agency applies for power supply to DISCOM within 5 days from the date of issue of LOI. It is necessary for the bidders to apply within first 5 days from the date of LOI for temporary power connection considering 5 days required by Distribution Company to provide the power connection as per their SOP, making thereby availability of power supply on 10th day of LOI.
- Any delay in making the application for temporary power connection beyond initial 5 days shall be on account of bidder.

(A4) SECURITY DEPOSIT:

As per prevailing rules of the Corporation, 5% of the contract value shall be paid as 'Security Deposit'. As per Government of Gujarat, vide circular No. JNV.10212/520A dtd. 26.06.2012& GERC audit report; contractor has to pay 100% SD upon placement of LOI within 10 days. Therefore, successful bidder shall have to enter contract agreements along with100% of S.D. shall be paid at C. O. **Gondal** within 10 days from receipt of letter of intent either

a) In form of DD in favor of "Gujarat Energy Transmission Corporation Ltd." of any Nationalized Bank payable at Local Branch GONDAL.

OR

b) In form of Bank Guarantee of any Nationalized Bank as per the approved format (attached) of the Corporation valid for minimum period of time limit plus guarantee period of one year.

The security deposit will be refunded only after the completion of 1 year guarantee period of work completed or finalization of final bill whichever is later.
If Security Deposit is not paid within 10 days of issue of LOI, EMD paid will be forfeited and Corporation will not deal with party for the period of two years.

(A5) OTHER INSTRUCTIONS:

1. Tenders must be submitted in the enclosed schedule of work & quantities. Those received in any other form will not be accepted. They should be accompanied by a covering letter in which the bidder should give all information as called for in the specifications & any other point which he would like to be considered along with the tender.

2. The Schedule-B shall be filled up with the quoted % above or below & shall be submitted online only.
3. The bidders shall note that no deviations from the technical specifications or commercial conditions with this bid are acceptable & it will be presumed that the bidder agrees entirely with the specifications & general terms &conditions of the contract.
4. The Corporation reserves the right to accept any tender irrespective of whether it is lowest or not or to reject all the tenders without assigning any reasons thereof. Tenders departing from the technical Specification or the method of bidding in a radical manner may also be rejected.
5. On acceptance of the tender the name(s) of the accredited representative(s) of the tenderer who would be responsible for taking instructions from the Engineers of the Corporation shall be communicated to the **Superintending Engineer (AM), Gujarat Energy Transmission Corporation, Circle Office, Gondal -360311.**
6. **Proof of payments of taxes made by the Contractor to the appropriate departments shall be produced to Gujarat Energy Transmission Corporation failing which appropriate amount shall be withheld on getting information / instruction from the concerned departments.**

6A: Goods and Service Tax (GST)

The F.O.R. Destination prices are excluding GST and Cess as applicable which will be paid extra on a given taxable goods and/or services within the original contractual delivery period. The amount and% of GST and Cess as applicable should clearly be indicated separately. (GST/Cess means all applicable Tax/Cess under GST Laws. GST Laws means IGST Act, GST (Compensation to the State for Loss of Revenue) Act, CGST Act, UTGST Act and SGSCT Act, 2017and all related ancillary legislations).

Bidder shall have to submit a C.A Certificate& duly authorized Signatory of successful bidder, certifying that you have not claimed Refund of any applicable GST and Cess, charged to COMPANY or shall not claim any such Refund, on a future date, from the concerned Authorities and if, any Refund, in respect of such GST and Cess, is claimed by you, it will be immediately passed on to the COMPANY, without COMPANY making any specific Claim, for the same, either from the Department or from you.

The offers having price INCLUSIVE OF GST and Cess is likely to be rejected if the rate of GST and Cess is not mentioned clearly unless the bidder has opted for Composition Scheme under GST Act, which should be clearly indicated in the price bid. COMPANY may at its discretion consider such offer with presumption of highest applicable rate of VAT/GST/Cess prevailing when the price quoted is inclusive of GST and Cess.

If the Supplier/Contractor has opted for the Composition scheme of GST, the same must be clearly specified with valid Declaration & Certificate from Department. In the event of withdrawal/cessation of the Supplier from Composition scheme during the tenure of the contract, the rate mentioned in the price bid shall be final and any additional GST will have to be borne by the tenderer. In no case additional amount towards tax or otherwise will be paid / reimbursed to supplier/contractor. Further Statutory Variation clause will not be applicable in case of Supplier / Contractor has opted for Composition Scheme under GST Supplier/Contractor should charge GST in Invoice at the rate as agreed to / mentioned in acceptance of tender only and any deviation in the same shall not be accepted. Further, any additional liability of GST (later on due to wrong mentioning of GST rate, mis-interpretation of HSN/SAC Code, etc.) over and above as charged in the invoice shall be borne by the Supplier/Contractor. However, any refund received by the supplier / contractor on account of GST charged from the company; such refund shall have to be passed on to the company, along with interest if any. Such refund along with interest needs to be passed on suo-moto by the supplier / contractor.

Further, the Company has a right to recover the amount of GST along with penal interest at the rate of 18% per annum if GST charged is not paid / short paid to the government or fail to upload the details or uploads inaccurate particulars on GSTIN portal by the Supplier / Contractor within the stipulated time limit.

In case, Govt. revises the rate of GST rate / Code during the tenure of the contract, the provision of GUVNL's statutory variation clause shall apply.

6A-2: STATUTORY VARIATION:

Any statutory increase or decrease in taxes and duties including GST and cess as applicable or in the event of introduction of New tax/cess or cessation of existing tax/cess subsequent to suppliers offer if it takes place within the original contractual completion date will be to company's account subject to the claim being supported by documentary evidence. However, if any decrease takes place after the contractual delivery date the advantage will have to be passed to the company.

6BWELFARE CESS: -

1. As per the Welfare Cess Act, the welfare cess @ 1% is applicable on supply and erection items for supply, erection, testing & commissioning of substation, transmission lines, EPC/Turnkey projects and civil works.
2. Contractor shall get registered under Welfare Cess Act before commencement of work. Office of the Factory Inspector is authorized at present as a registering authority.
3. The welfare cess@1% is considered in the price schedules so, the bidders are requested to quote accordingly.
4. GETCO shall pay the welfare cess by way of reimbursing to contractors on production of documentary evidence of payment.
5. The contracts for which supply or part supply of material are in the scope of GETCO, then contractors shall deposit welfare cess on estimated cost of supplied items to GETCO on progressive basis of utilization. As this part of welfare cess is on GETCO account, the same shall be reimbursed to the contractor on receipt of request letter along with documentary evidence of payment. For calculation of welfare cess on supply part, valuation as per MR shall be taken and informed to the contractor for payment. This will be over and above the A/T value.

The modality of payment/ reimbursement of welfare cess will be as under.

6. On receipt of A/T, the contractor / bidder will get them registered under Welfare Cess Act and submit the documentary evidence to the concern office.
7. Before release of payment of first R.A.Bill, the contractor has to submit the documentary evidence of registration. Only thereafter, the bill will be processed for payment.
8. Before release of payment of subsequent R.A. Bills, the contractor has to submit the documentary evidence of payment of welfare cess of previous R.A.Bill.
9. Before release of payment of final bill, the contractor has to submit documentary evidence of payment of welfare cess of previous R.A.Bill as well as of this final bill.
10. If the R.A.Bill happens to be first and final bill, then before release of payment, contractor has to submit documentary evidence of registration under Welfare Cess Act and evidence of payment of welfare cess.
11. The welfare cess shall be reimbursed to the contractor on submission of copy of documentary evidence of payment by observing due formalities.
12. The contractor will have to give indemnity bond for material on Non-Judicial Stamp paper of value Rs. 300/-to GETCO as per attached format. The cost of stamp paper will be borne by the contractor.
13. The contractor will have to give safety cum indemnity on Non-Judicial Stamp paper of value Rs. 300/- as per attached format. The cost of stamp paper will be borne by the contractor.
14. Also the successful bidder will have to execute Agreement on stamp paper of value Rs.300/- at our Circle office, GETCO, Gondal before commencement of works as per GETCO's prescribed Performa. The cost of stamp paper will be borne by the contractor.
15. 10 % amount of bill will be retained from each RA bill for the work executed after the scheduled date of completion and on finalization of time limit extension by competent authority; this amount will be released after deducting amount towards the time limit penalty if any.

16. As regard damage the materials, equipment and worker of the contractor, he himself will be responsible. If there is any compensation to be paid in respect of "WORKMAN" compensation act of any other statutory provisions, the same will have to be paid by the contractor direct. If he thinks fit he may take necessary insurance cover, at his cost.
17. The quantum of the work as mentioned in estimate/ schedule – 'B' is tentative and it can be varied or differed as per site condition. The payment shall be made only on actual work executed or order quantity, whichever is less.
18. The tenderer will be abided by and fulfill all the terms and provisions of the "Tender & Contract" for works as applicable and incase of any default there to the GETCO shall forfeit the SD or any other action as may be decided by Superintending Engineer, Gondal.
19. The cost of damages, if any will be recovered from the Contractor's bill. The assessment of which will be done by field Engineer at his sole discretion and his decision shall be binding to the contractor and shall be considered as final and unchallengeable.
20. GETCO shall deduct the Income Tax and other taxes as per prevailing rules from each and every bill.
21. No part rate or reduced rate shall be allowed in final bill.
22. The contractor has to follow all labor laws, safety rules and regulations. The GETCO does not take any responsibility in case of accident or injury to the workers. The safety/ security of men, materials and equipment's shall be sole responsibility of the contractor.
23. No higher rate or revised rate will be applicable for the work, if work is held up/ closed due to whatever so reasons.
24. GETCO will not pay any idle charge for any site conditions or any circumstances.
25. For shortages of any materials issued by the GETCO for the work, recovery shall be made from you, on the basis of prices of the materials (prevailing on the date of settlement of materials account) plus 15 % supervision charges plus GST as applicable.

6C: INPUT TAX CREDIT BENEFIT:

In the event of any statutory increase in the rate of Input Tax Credit and / or due to inclusion of any other additional item of their inputs / input services under the ambit of the Input Tax Credit provisions under the GST Act, subsequent to the date of submission of the offer, the same should be passed on to COMPANY and you should inform such changes to COMPANY from time to time.

6D: PENALTY FOR DELAY:

Penalty for delay, the contractor shall pay compensation, an amount equal to half percent per one week for the contract amount of work. However, the total amount of compensation to be paid by the contractor, under the provision of the clauses shall not exceed 10 percent of the amount of contract value as decided by the competent authority of the GETCO. The penalty will be invariably deducted from the bills of the contractor and no refund will be given unless the competent authorities approves the reduction the reasons for delay attributable to GETCO as well as to party will be brought out clearly while putting the proposal for waiver reduction in penalty. Penalty will be levied as par tender condition plus GST as applicable will be imposed.

6E: Contractor's Default:

If the Contractor shall neglect to execute the work with due diligence and expedition or shall refuse or neglect to comply with any reasonable order given to him, in writing by Engineer in connection with the works or shall contravene the provisions of the contract, the owner may give notice in writing to the contractor to make good the failure, neglect or contravention complained of should the contractor fail to comply with the notice within 30 days from the date of serving the notice, then and in such case the owner shall be liberty to employ other workmen and forthwith to execute such part of the work as the contractor may have neglected to do or if the owner shall think fit, without prejudice to any other right he may have under the contract to take the work wholly or in part out of the contractor's hand and re-contract with any other person or persons to complete the work or any part thereof and in that event the Owner shall have free use of all Contractor's equipment that have been at the time on the site in connection with the works without

being responsible to the contractor for fair wear and tear thereof and to the exclusion of any right of the contractor over the same, and **If the sum that the contractor is entitled to be paid plus the costs incurred by the owner in completing the works, exceeds the contract price or the entire works if entire works have been completed or the price for part of the work if part of the work have been completed, the contractor shall be liable for such excess.**

If such excess is greater than the sums due to the contractor, the contractor shall pay the balance to the owner and if such excess is less than the sums due to the contractor, owner shall pay the balance to the contractor. For facilitating such payment, over shall encash the Bank Guarantees of contractor available with Owner's retain such other payments due to the contractor under the contract in question or any other contract that the owner's may have with contractor. Such payment of excess amount shall be independent of the liquidated damages for delay which the contractor shall have to pay if the completion of work is delayed.

6F "RIGHTS OF THE POWER:

Whenever any claim for payment of a sum of money arises out of or under the contractor against the contractor, the Owner shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any, deposited by the contractor and for the purpose aforesaid, the Owner shall be entitled to encash and withhold the amount of Performance Bank Guarantee or other security, if any, furnished as the case may be. The Owner shall also have a lien over the same pending finalization or adjudication of any such claim. In the event to the security is insufficient to cover the claimed amount or amounts, the Owner shall be entitled to withhold and have lien to retain to the extent of the such claimed amount or amounts referred to above, from any sum or sums found payable or which at any time thereafter may become payable to the contractor under the same contract with the owner or GUVNL or its subsidiary companies pending finalization or adjudication of any such claim.

6G Lien in respect of Claims in other Contracts:

A. Any sum of money due and payable to the contractor (including the security deposit) under the contract may be withheld or retained by way of lien by the Owner against any of its claim in respect of payment of a sum of money arising out of or under any other contract made by the Contractor with the Owner or GUVNL or any of its subsidiary companies.

B. It is an agreed that the sum of money so withheld or retained under this clause by the Owner will be kept withheld or retained as such by the Owner till its claims arising out of the same contract or any other contract is either mutually settled or determined by the arbitrator or competent court, as the case may be, and the contractor shall have no claim for interest or damages whatsoever on this account or on any other ground in respect of any sum of money withheld or retained under this clause and as may be duly notified to the Contactor."

6H INCOME TAX:

Income tax at source at the prevailing rate will be deducted from bills in accordance with the provision of income tax laws and to that effect, a certificate will be issued to the contractor.

7. The successful contractor will have to sign an agreement as per the Gujarat Energy Transmission Corporation rules on stamped paper & the necessary stamp duty charges shall be borne by the contractor.

8. The bidder shall visit the site and carefully study the work to be carried. The Corporation will not pay any extra or rate for any reason in case the contractor claims, after acceptance of contract, to have misjudged the site condition.

9. The percentage quoted shall include cost towards of all materials, & machinery including equipment, fixtures, labor, constructional equipment, fuel, scaffolding, staging, ramps, walkways, approach and haul road, temporary works, etc. bearing permanent or temporary nature necessary for the completion of the work in all respects, except for those items specifically mentioned to be furnished by the Corporation. The contractor must also arrange

for the transport of materials & include all such costs in the rates quoted by him for finished work.

10. During the execution of the work if it is found that the work is not progressing as per the Scheduled Progress Program, approved by the Corporation & planned by the Contractor, due to the reasons attributable to the Contractor; suitable action shall be taken as per relevant clauses mentioned in General Conditions of Contract.
11. The contract or any part thereof shall not be subject to change without the written permission of the **Superintending Engineer (AM),** Gujarat Energy Transmission Circle, Circle Office, Gondal or their authorized representatives.
12. Tender shall remain open for acceptance for a period of **180 days** from the date of Technical bid opening & during this period no bidder shall be allowed to withdraw their tender. Any such withdrawals, during the said period will entail forfeiture of the earnest money deposited with the tender. The GETCO will take further action as deemed fit like not to deal with bidder in GETCO works.
13. Further information required, if any, can be had from the office of the **Superintending Engineer (AM)**, Gujarat Energy Transmission Corporation, Circle Office, Gondal. But it must be clearly understood that the tenders must be received complete in every respects by the due date & time
14. The notice inviting tender, general instructions to the contractors & all documents of this tender shall form part of the contract.
15. The works under this contract shall be completed in all respects within stipulated period from the date of commencement order issued by field office. However, interim mile stones to be jointly fixed after issue of LOI.
16. Bidders must quote firm price only, till completion of work under contract, & this is to be confirmed by bidder while submitting their offer. No escalation towards labor and material / fuel shall be paid in this execution of contract.
17. Contractor shall pay minimum wages to his laborers as per the Minimum Wages Act, 1948 & rules there under as applicable from time to time in pursuant to the State Government notification. The concerned contractor shall submit the details of the payment with due certificate of LWO/IRO of the Corporation
18. **Once the offer submitted will not be returned back for any reason thereof in any case.**
19. Each tender shall contain the name, residence & place of business of person or persons making the tender & shall be signed by the tenderer with their usual signature with seal of the company.
20. Tender by partnerships shall furnish the full names of all partners. It shall be signed with the partnership name by one of the members of the partnership or by an authorized representative followed by the name &designation of the person signing.
21. An attested copy of the constitution of the firm with the name of partners shall be furnished. Whenever, whether in submission of the tender or later in other matters, the signatures are made by one person on behalf of Directors or a firm or a corporation, an attested copy of the resolution of the partners or of law shall be supplied by the tenderer authorizing Witnesses & sureties shall be persons of status & probity, &their names, occupation & address shall be stated below their signatures. All signatures shall be dated.
22. Tenders by corporation shall be signed with the legal name of the corporation followed by the name of the state of incorporation & by the signature & designation of the president, secretary or other person authorized to bind it in the matter with rubber seal of the company.
23. The GETCO reserves the right to delete any item of Schedule-B for which contractor shall not have any right to claim on this account.
24. The Bidders shall study the Conditions of site & shall resort to dewatering, where necessary, by appropriate methods & maintain reasonably dry areas to work at and no extra claim will be entertaining on this account.
25. The Contractor shall prepare all required roads to execute various items of this Contract & arrange all transport of materials & all such costs shall be taken care of while quoting

the rates. No extra payments shall be admissible towards such costs. On completion, this shall be cleared if asked by GETCO at no extra cost.

26. Gujarat Energy Transmission Corporation shall not entertain idle charges for any site conditions or any circumstances.

27. The Contractor shall take all requisite & necessary care to observe that no damage is occurred to the Existing structures, if any. For any damage to the Existing Structures of Gujarat Energy Transmission Corporation the Contractor shall be held responsible.

28. The submission of any bid connected with these document and specification shall constitute an agreement that bidder shall have no cause of action or claim against the GETCO for rejection of their bid. The owner shall always be at liberty to reject or accept split any bid or bids at their sole discretion and any action will not be called into question and the bidder shall have no claim in that regards against the owner.

29. By successful submission of bid shall be considered as fully acceptance of all conditions & specifications mentioned in this tender booklet to bidder.

30. Recoveries:

(I) In case of any damage to equipment/machinery or structure/building of GETCO or any public property due to negligence's of contractor or any other reasons attributed to contractor the decision of E.I.C. regarding the amount of recovery shall be final and binding.

(II) If the contractor fails to execute the proportionate work as per direction of E.I.C. within the time frame given for completion of part / whole of the work GETCO shall get the work done through any other contractor and the cost of execution of such work along with 15% overhead charges shall be recovered from contractor.

31. Notwithstanding anything contained to the contrary in the specification or tenders in subsequent exchange of correspondence, the conditions of contract shall be binding on the contractor and any change or variations expressed or implied, however made in the said conditions shall not be valid or operative unless expressly sanctioned by the Corporation. The contractor shall be deemed to have fully informed himself and to have special knowledge of the provisions of the conditions of contract herein contained.

32. Submissions of tender by a contractor implies that he has read the instructions and condition of contract herein contained and has made himself aware of the scopes and specifications of the work to be done.

33. These rules and directions shall form part of the contract.

34. Drawings: Drawings required for the works are available with the **E.E. (Civil) of Circle Office GONDAL** They are indicative and for tender purpose only. Bidders shall have to execute the work as per construction drawings issued from time to time by GETCO.

35. Electricity Connection: The electric power, at site, will be made available at one mutually agreed point, free of cost (connection only) by Gujarat Energy Transmission Corporation only. Further distribution will have to be carried out by the contractor as per requirements at their own cost. The necessary consumption charges will be recovered as per the tariff rate of Gujarat Energy Transmission Corporation from time to time as per Corporation's rules.

36. The contractor has to make their own arrangement of water for construction activity at their own cost. The contractor shall be allowed to draw water from bore well / open well by making their own arrangement such as drilling, pump with all electrical accessories, pipe line & electricity to run the bore well /open well from the electric power point provided by DISCOM to them. Water shall be free of cost to the contractor. The electrical consumption charges to run the bore well / open well shall be borne by the contractor. In those cases, where in bore well has been constructed at the cost of GETCO as per contract, even then no water charges shall be charged, however electricity connection & electricity charges till the completion of work shall be to contractor accounts. In no case, GETCO is bound to supply water if the ground water sources are not available at site within premises.

37. Tenders / bids received after scheduled time period: The tenders received after time and date specified in the tender notice, will not be accepted. Once the offer submitted by

the contractor before due date of submission, the contractor will not be allowed to submit revised / additional / modified / other even before due date. However, if the issue and receipt of tender is extended by the Corporation due to any reason, the contractor may submit the revised offer before due date of submission, if they wish to submit.

38. The work shall be completed within the period stipulated in the contract. However, it may be noted that drawings shall be released progressively & site clearance arranged accordingly to the progress of work at site. Therefore, the contractor has to organize & coordinate the works to suit these. In the event of any delay due to the above or due to any other reason not attributable to the contractor, reasonable extension in the completing the work may be given at the discretion & as decided by the Corporation but no compensation or idle charges will be paid to the contractor under any circumstances.

39. The price bid/proposals will be opened in the presence of the bidder's representatives who choose to attend at the date and time and venue to be notified by the GETCO, after conclusion of the Technical Evaluation and Post Qualification process.

40. GETCO will not issue any material required for the work. All the materials – tools & tackles, labor etc. will have to be arranged by the contractor.

41. ACCEPTANCE OR REJECTION OF BID

a) The GETCO reserves the right to accept any tender irrespective of whether it is lowest or not or to reject all the tenders without assigning any reasons thereof. Tenders departing from the stipulated technical specifications, commercial conditions or the method of bidding in a radical manner are liable to be rejected.

b) The bid is liable for rejection prima facie, if it is without payment of EMD / Tender Fee or Payment of EMD / Tender fee in any form other than D.D. / Online payment not in prescribed form.

c) Not bearing signature of the bidder &seal of the company on all the documents accompanying the tender.

f) Not confirming to specifications or conditional tender.

g) Received after expiry of the due date & time.

h) Received by telex or telegram or fax.

i) Submitted by bidders who are listed under declaration of ineligibility for corrupt or fraudulent practices issued by GETCO, Govt. of Gujarat or its Public Sector under taking.

g) Tender not fulfilling all the above conditions and those specified in the documents attached or incomplete in any respect are liable to rejection.

SECTION- B
Qualification Requirement

QUALIFICATION REQUIREMENT

Technical Qualification requirement

1. **Registration:** Bidder quoting for the bid shall have registration in appropriate class with GETCO/ Central/State Government/ Railway/Semi Govt. Organizations.
2. **Experience:**
   2(A) Bidder should have experience of similar works/RCC frame structure works under single contract as main contractor for minimum of 50% value of estimated cost of the tender with GETCO/ GEB / Central / State Government / Railway / Semi-Government / Public Sector Organization within last 5 years.
   2(B) Attested Photocopy copy of work orders executed from GETCO/ GEB / Central / State Government / Railway / Semi- Government / Public Sector Organization and satisfactory completion certificate (Form 3A) from respective department should be submitted **Annexure-1 to 11** on with signature authorized person of firm & stamp of firm (format is given in this letter)

Financial Qualification requirement:

3. **Tender fee & EMD**: Payment of Tender fee & EMD.(DD must be from bidder's bank account only)

4. **Power of attorney**: Copy of Notarized power of attorney as the case may be.

5. **Solvency:** Latest bank solvency certificate from any Nationalized/Scheduled Bank of a sum of minimum 20 % of the estimated cost shown in the tender. The solvency should be in the name of "To whomsoever it may concern" or "GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED (GETCO)".

6. **Nature of Firm:** Attested copy of Partnership Deed with recent Form-G obtained from Registrar of firms for the current year, Power of Attorney, if any, for signing the bid documents in case of partnership firm &self-affidavit for proprietorship firm. In case the Form-G is not available for current year Affidavit cum Undertaking of the firm, declaring no change in Form-G is to be submitted. However, this affidavit cum undertaking should be executed only by partnership firm. The party shall be liable to give fresh affidavit cum undertaking, after completion of its one year. All such documents shall have to be NOTARISED.

7. **Goods & Service Tax (GST) Registration:** The Bidder shall be registered under the GST Act and a certified copy of such registration under the GST act indicating the GSTIN shall have to be submitted along with the bid by the bidder.

8. **I.T. PAN CARD:** The bidder should submit the attested photocopy of PAN Card of their fir &Income Tax Return& Balance sheet for last three years.

9. **Note:** EMD refund application format is given before Price bid in this tender, EMD refund application on party/company Letterhead in hard copy is also need required for EMD refund.

10. 1Copy of ITR along with Balance sheet & P&L A/C duly signed by CA.

HR Qualification requirement:

11. **Provident Fund Code:**-Separate provident fund code number towards firm registered with Regional P. F. Commissioner.
12. **Annexure -I:-**Address check & pf checking for HR Section Getco circle office, Gondal

Note: All the required documents submitted / uploaded must be Self-attested by bidder.

Note: Above criteria is for scrutiny after opening the technical bid. However, the GETCO reserves the right to award the work to one or more bidders, considering their technical and financial capacity OR to reject any or all tenders or accept any tender without assigning any reason thereof.

Signature of Contractor

Superintending Engineer
Am Circle Office,
GETCO, Gondal

CHECK LIST OF DOCUMENTS SUBMISSION

TABLE-A		
Mandatory to upload on-line only (.pdf file)		
No.	**Particulars**	**Check Mark**
1	Scan of Tender Fee Online payment receipt	
2	Scan of EMD Online payment receipt	
3	Firm Registration document as Approved Contractor in Appropriate Class	
4	Work completion certificate in Form No.3-A (Experience Certificate as main contractor) only as Per Qualification Requirement	
5	Bank Solvency Certificate	
6	Provident Fund Code Number Documents	
7	GST Registration Number Documents	
8	Income Tax Return (ITR) along with Balance sheet & P&L A/C duly signed by CA	
9	Nature of Firm:	
	Partnership deed/Latest Form-G/ POA/Authorized Signatory Certificate for Partnership	
	Self-Affidavit/POA/Authorized Signatory Certificate for Proprietorship	
10	PAN Number Document	
11	Duly signed of Filled with signature authorized person of firm &stamp Annexure / Annexure 1 to 11	
12	Duly signed Integrity Pact (Page no.06)	

AFFIDAVIT CUM UNDERTAKING
(On Rs.300/- stamp paper duly notarized)

We, Shri _____ (names of all partners and POA holder) of M/s. _____ (name of partnership firm) having registered place of business at _____ do hereby solemnly state and affirm on Oath as under:

1. That Form G up to last entry dated _____ has been submitted to GETCO by us.

2. That since this Form G is not of current year, it is affirmed that whatever entries specified by Registrar of Firms in this submitted Form G is true and correct and that, there is no any modification or change in any of the partners or other details. It is further affirmed that we are liable &bound to disclose to GETCO immediately, if there is any change and/or modification in partnership of this firm.

3. That if GETCO finds any undisclosed modification/amendment in partners or other details at any time, then they shall be entitled to take any legal action against us / partnership firm. GETCO shall be empowered to step-deal and /or black-list our firm for any contract, at such instances.

4. That whatever stated in aforesaid paras and contents therein are true and correct and shall be binding on all the partners of this partnership firm, which includes their heirs, representative, assignees, executors etc.

Hence solemnly affirmed on this _____day of _____ months of 2026_____at _____.

DEPONANTS
(Name& sign of all partners
/ or POA Holders)

Dated:

Place:

SECTION – C
GENERAL CONDITIONS OF CONTRACT

(C) GENERAL CONDITIONS OF CONTRACT

1. Definitions:

(a) The Contract means the documents forming the tender and acceptance thereof, together with the documents referred to therein or individual work order in the case of term contract, including these conditions, schedules and / or additional conditions attached to the form of tender or individual work, order, rate schedule, the specifications and the drawings and all these documents as applicable taken together shall be deemed to form the contract.
(b) The "Tender Document" means the form of tender, the applicable schedules and/or additional conditions and the specifications and/or drawings as issued to the contractors for the purpose preparing tender.
(c) The expression "works" or "work" when used in the conditions of contract shall, unless there be something in the subject or context repugnant to such construction means, the works or the work contracted to be executed under or in virtue of the contract whether original or altered.
(d) The "Contractor" means the individual, firm, or company, whether incorporated or not, undertaking the works and shall include their or its legal personal representative, successors and permitted assignees.
(e)"Corporation" means the Gujarat Energy Transmission Corporation Ltd. and the "Accepting Officer" means the officer who is authorized to sign and signs the contract on behalf of the "Corporation."
(f) The letter "EE" means Executive Engineer who in the case of measurement and lump sum contract, direct the contractor and the letters "ACE" means "Add Superintending Engineer" and "CE " means "Superintending Engineer" who administers and in the case of the term contracts directs the contract.
(g)The "Engineer-in-charge" means all officers of the Corporation appointed by the Superintending Engineer to supervise the works or part of the works.
(h)"Approved" and "Directed" means the approval or direction of the Superintending Engineer to Superintending Engineer or the person deputed by him for the particular purpose.
(i)"B.S." means the "British Standard" as issued by the British Standards institution. "A.S." means the American Standards as issued by the American Standard Institutions and "I.S." means the "Indian Standards" as issued by the Indian Standards Institutions. Wherever the above-mentioned abbreviations are preferred to, in the specifications and / or work orders, they mean the addition with all amendments current at the date of issue of tender documents of work orders.
In the case of measurement and terms of contracts "Specifications" means those contained in Gujarat Energy Transmission Corporation Ltd. schedule together with any amendments etc. embodied in the tender documents, "Drawings" refer to those accompanying the tender documents and/or any work orders referred therein.
(j)The "Contract Sum" means the sum accepted or the sum calculated in accordance with the prices accepted in the tender and/or the contract rate as payable to the contractor for the full and entire executing and completion of works.
(k)"The date of completion" is the date or dates of completion of the work or any part of the works set out or ascertained in accordance with the individual work orders and the tender documents or any subsequent agreed amendments thereto.
(l)GST/Cess means all applicable Tax/Cess under GST Laws. GST Laws means IGST Act, GST (Compensation to the State for Loss of Revenue) Act, CGST Act, UTGST Act and SGSCT Act, 2017and all related ancillary legislations.

2. Security Deposit

The contractor shall, within 10 days of the issue of Letter of Intent, pay 5 % as Security Deposit along with Contract agreements; The Bank Guarantee from schedule bank in lieu of cash or government securities towards Security Deposit will be accepted providing amount of Security Deposit payable exceeds Rs. 1,00,000/-.All damages, costs, charges, expenses and other sums which may be or may become due or payable by the contractor to the Corporation under the terms of the contract may be deducted from the cash in the proceeds of sale of the Securities/Bank Guarantee to deposited (which the officer or person to whom the same may be endorsed as aforesaid is hereby authorized to sell / to encash for that purpose) or from the interest of any such securities of from any sums due or which may become due to the contractor by the Corporation or from the whole or the balance unpaid as aforesaid of the encash securities so deposited being repaid or transferred and returned as may be to contractor after the date on which the final bill is paid or after the expiry of the date up to which the contractor has to maintain the work in good order whichever is later.

"For Water Proofing Treatment:-
The contractor shall submit performance guarantee of the waterproofing item at the rate of 20% of cost of item of work order in the form of DD or in the form of BG of Schedule Bank / Nationalized Bank in favor of GETCO (A/c Agency) for a period of 5 years from actual date of completion of work on non-judicial stamp paper of appropriate value in approved format of GETCO. In the event of unsatisfactory performance of waterproofing work, the agency shall carry out necessary remedial/rectification works that may be necessary in the opinion of GETCO at no extra cost, failing which BG shall been cashed by GETCO. The BG shall be released only after satisfactory completion of performance period of 5 years."

"For Anti-termite Treatment:-
The contractor shall submit performance guarantee of the anti-termite treatment item at the rate of 20% of cost of item of work order in the form of DD or in the form of BG of Schedule Bank / Nationalized Bank in favor of GETCO (A/c Agency) for a period of 5 years from actual date of completion of work on non-judicial stamp paper of appropriate value in approved format of GETCO. In the event of unsatisfactory performance of anti-termite treatment work, the agency shall carry out necessary remedial/rectification works that may be necessary in the opinion of GETCO at no extra cost, failing which BG shall be encashed by GETCO. The BG shall be released only after satisfactory completion of performance period of 5 years."

3. PENALTY FOR DELAY: - The bidder should note that the completion time allowed for carrying out the work should be strictly observed. Any delay that may take place in Civil works beyond contractual cutoff date stated as per stipulated delivery period shall be subject to the penalty ½% per week plus GST as per applicable or part thereof on delayed portion of work and / or supply value subject to ceiling of 10% of the total contract value plus GST as per applicable will be imposed.

In event of failure of the Contactor to pay the amount of Penalty as demanded, the Owner shall be entitled to deduct the amount of Penalty for delay from the amounts payable to the Contractors under any bills raised under this contract or any other amount payable under any other contract with the GUVNL and its Subsidiary Companies i.e. GETCO, GUVNL, GSECL, MGVCL, DGVCL, PGVCL, UGVCL. It is permissible for the Owner to adjust the amount of Penalty of delay against any Bank Guarantee furnished by the Contractor under this contract or any other contract with GUVNL and/or its subsidiary companies.

4. Compensation for the delay

The time limit allowed for carrying out the work as entered in the tender shall strictly observed by the contractor and shall be reckoned on the 10th day of issuance of DOC. The work shall throughout the stipulated period of contract proceeds with due diligence (time

being deemed to be essence of contract) and for delay, the contractor shall pay compensation @ 0.5% plus GST as applicable per week or part thereof on delayed portion subject to maximum 10% plus GST as applicable of the Total contract value of the civil works (End cost with GST &cess as applicable). For calculating the delayed portion, date of work completion mentioned in work completion certificate shall be considered.

5. Action when whole of Security Deposit is forfeited

In any case in which under any clause or clauses of this contract the contractor shall have tendered himself to pay compensation amounting to the whole of their security deposit (whether paid one sum or deducted by installments) or in the case of abandonment for the work owing to serious illness or death of the contractor or any other cause, the Executive Engineer on behalf of the Corporation, shall have powers to adopt, (a) below and any of the following courses under (b) and (c) as he may deem best suited to the interest of the Corporation.

(a) To rescind the contract (for which rescission notice of 10 days) in writing to the contractor under the hand of the Executive Engineer shall be conclusive evidence and in that case the security deposit of the contractor shall stand forfeited and absolutely at the disposal of the Corporation.

(b) To employ labour paid by the Corporation, to supply materials to carry out of the works or any part of the works debiting the contractor with the cost of the labour and the price of the materials (as to the correctness of which cost and price the certificate of the Executive Engineer shall be final and conclusive against the contractor) and crediting him with value of the work done, in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of this contract and in that case the certificate of the Executive Engineer as to the value of the work done shall be final and conclusive against the contractor.

(c) To order that the work of the contractor be measured up and to take such part thereof, as shall be unexecuted, out of his heads and to give it to another contractor to complete, in which case, any expenses, which may be incurred in excess of the sum, which would have been paid to the original contractor, if the whole work had been executed by him as to the amount of which excess expenses the certificate in writing of the Engineer-in-charge shall be final, conclusive and shall be borne and shall be paid by the original contractors and shall be deducted from any money due to him by the Corporation under the contract or otherwise from their security deposit of the proceeds sale thereof or a sufficient part thereof.

(d)In the event of the above courses being adopted by the Executive Engineer the contractor shall have no claim to compensation for any loss sustained by him by reason of their having purchased or procured any materials or entered into any engagements or made any advances on account of or with a view to the execution of the work or the performance of the contract. And in case the contract shall be rescind under the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum for any works thereof actually performed by him under this contract unless and until the Executive Engineer shall have certified in writing the performance of such works and the amount payable to him in respect thereof and he only be entitled to be paid the amount so certified.

6. Notice for unsatisfactory progress

If the progress or a particular portion of the work is unsatisfactory the Executive Engineer whose decision shall be final, shall notwithstanding that the general progress of work is satisfactory; be entitled to take action under Clause 4(c) after giving the contractor 10 days' notice in writing and the contractor will have no claim for compensation for any loss sustained by him owing to such actions.

7. Action in the case of Default by Contractor

If any case in which any of the powers conferred upon the Executive Engineer by Clauses 4 and 5 hereof, shall have exercised and the same shall not have been exercised, the non-exercised thereof shall not constitute a waiver of any of the conditions hereof and such powers shall not withstanding be exercisable in any further case of default by the contractor for which, by any

clauses hereof, he is declared liable to pay compensation amounting to the whole of his security deposit and liability of the contractor for past and future compensation shall remain unaffected in the event of the Ex. Engineer taking action under sub clause (a) or (c) of Clause 4 he may, if he so desires, take possessions of all or any tools, plants, materials, and stores in such upon the work or the site thereof belonging to the contractor, or procured by him and intended to be used for the execution of the work of any part thereof paying for allowing for the same in account at the contract rates, or in the case of a contract rates not being applicable to current market rates to be certified by the Executive Engineer whose certificate thereof shall be final. In the alternative, the Executive Engineer may by notice in writing to the contractor or his clerk of works, foremen or other authorized agent, require him to remove such tools, plants, materials or stores from the premises within a time to be specified in such requisition to decisions to the contractor failing to comply with any such requisition, the decision of the Executive Engineer as to the expenses of any such removal and the amount of the proceed and expense of any such sale, be final and conclusive against the contractor.

8. Extension of Time Limit

If the contractor shall desire an extension of the time limit for completion of the work on the ground of his having been unavoidably hindered in its execution or on any other ground, he shall apply in writing to the Executive Engineer and the Executive Engineer may, if in his opinion there are reasonable grounds for granting extension, recommend such extension as he may think necessary or proper. The decision of the competent authority in this regard shall be final and binding to the contractor. Any delay attributed to Corporation shall be compensated only by way of extending the limit.

9. Completion Certificate

On completion of the work the Contractor shall be furnished with Completion Certificate by the Executive Engineer of such completion but no such certificate shall be given nor shall be the work considered to be complete until works are taken over and/or duly tested and put to operative as the case may be, nor until the work shall have been measured by the Engineer-In-Charge or where the measurement have been taken by his subordinated until they have received the approval of the Executive Engineer the said measurement being binding and conclusive against the contractor.

10. Effect of the Certificate

No payment shall be made for any work estimated to cost less than Rs.1,000/- till after the whole of said work shall have been completed and certificate of completion given. But in the case of works estimated to cost more than Rs.1,000/- Contractor shall on submitting a monthly bill thereof, be entitled to receive payments. Proportionate to the part of the work then approved and passed by the Engineer-in-charge, whose certificate of such approval and a passing of the sum requiring bad, unsound, imperfect or unskillful work to be removed and taken away and reconstructed or rejected nor shall any such payment be considered as admission of the due performance of the contract or any part thereof in any respect of the accruing of the claim nor shall conclude, determine or effect in any way the powers of the Engineer-in-charge as to the final settlement and adjustment of the accounts otherwise or in any other way, vary or affect the contract. The final bill shall be submitted by the contractor within one month of the date fixed for completion of work. Otherwise the certificate of Engineer-in-charge of the measurement and of total amount payable for the work shall be final and binding on all parties.

11. Payment to Contractors

The rates for several items of works estimated to cost more than Rs.1,000/- agreed to within shall be valid only when the item concerned is accepted, having been completed full, in accordance with the sanctioned specification. In case, where the items of the work, are not accepted, as so completed the Engineer-in-charge, may make payment on account of such

items at such reduced rates, as he may consider reasonable in the preparation of final or running accounts bills.

11-A- APAYMENT TERMS UNDER MSME ACT:

Bidders have to update their MSME detail on GETCO's website by following link https:// qetco.co.https://qetco.co.in/msme/ (and intimate to concern bill submitting office with copy to this office).

(2) The payment will be made within 45 days from the ***date of acceptance or the "date of deemed acceptance of goods or services i.e. After submission of all required documents as per at Terms & time to time circular issued by GETCO's corporate Office as well as statutory requirement to process the Bill.

Date of acceptance means-

(a) The day of actual delivery of goods or the rendering of services: or

(b) Where any objection is made in writing by the buyer regarding acceptance of goods or services. The day on which such objection is removed by the supplier.

*** **"**Date **of deemed acceptance"** Means, where no objection is made in writing by the buyer regarding acceptance of goods or services within fifteen days to the delivery of the goods or the rendering of services, the day of the actual delivery of goods or the rendering or services.

12. Bills

The Bill shall be submitted by the contractor each month on or before the date fixed by the Engineer-in - charge, for all works, executed in the previous month and the Engineer-in-charge shall take or cause to be taken the requisite measurement for the purpose or having the same verified and the claim so far as it is admissible, shall be adjusted, if possible, within ten days from the presentation of the bills. If the contractor does not submit the bill, within the time fixed, as aforesaid, the Engineer-in-charge may depute a subordinate to measure up the said work in the presence of the contractor or his duly authorized agent, whose counter signature in the measurement shall be sufficient warrant and the Engineer-in-charge may prepare a bill from such list which shall be binding on the contractor in all respects. GETCO shall make effort for the payment of bills (RA & final bills) as early as possible, however no interest is payable on bill amount if there is delay in payment of GETCO for whatever reason.

13. Supply of Materials to Contractor

If the specification of the estimated work provides for use of any special description of material to be supplied from the Corporation's Stores or if it is required that the contractor shall use certain stores to be provided by the Engineer-in-charge (such material and stores and the prices to be charged thereof as here in after mentioned being so far as practicable for the convenience of contractor but not so as in any way to control, the meaning or effect of the contract specified in otherwise or from the security deposit or the proceeds of sale thereof if the deposit is held in Government Securities the same or a sufficient portion thereof, shall be sold for the purpose. All materials supplied to the contract shall remain the absolute property of Corporation and shall on no account be removed from the site of the work and shall at all-time be open to inspection by the used by him or for any wastage in or damage thereto. The contractor shall be responsible for the loss, destruction or deterioration of the materials, stores or articles supplied to him by the Corporation even if such loss, destruction or deterioration has occurred under any circumstances whatsoever beyond his control as if the materials, stores or articles so supplied were his property.

14. Works to be executed in accordance with specifications, drawings, orders etc.

The contractor shall execute in whole and every part of work in the most substantial and workmanlike manner and both as regarding materials and in every other respect in strict accordance with the specification. The Contractor also shall confirm exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Engineer-in - charge and lodged in his office and to which the contractor shall be entitled to have access for the purpose of Inspection at such office, or in the site of the work, during office hours and the

Contractor shall, also if he so requires, be entitled at his own expenses to make or cause to be made copies of the specification, and of all such designs, drawings and instructions as aforesaid.

15. Alteration in Specifications and Designs not to invalidate Contracts.

The Executive Engineer shall have powers to make any alteration, or addition to the original specification designs, and instructions that may appear to him to be necessary or advisable during the progress of the work and the contractor shall be bound to carry out the work in accordance with any instructions in this connection which may be given to him in writing, signed by the Engineer-in-charge and such alterations shall not invalidate the contract. Any additional work which the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respect on which he agreed to do the main works, and at the same rates as are specified in the tender for the main work. Where, however, the works is to be executed according to the designs, drawing and specifications recommended by the contractor and accepted by the competent authority, the alteration above referred to shall be within the scope of such designs, drawings, and specifications appended to the tender.

16. Rates for works not entered in Estimate or Schedule of Rate of the District

If the additional and altered work includes any class of work for which no rate is specified in this contract, then such class of work shall be carried out the rates entered in the Schedule of Rates of the Division or at the rate mutually agreed upon between the Executive Engineer and the contractor, whichever are lower. If the additional or altered work for which no rate is entered in the Schedule of Rates of the Division is ordered to be carried out before the rates agreed upon then the contractor within seven days of date of receipt by him of the order to carry out the work inform the Executive Engineer for the rate which in his intension to charge for such class of work and if the Executive Engineer does not agree to this rate he shall be noticed in writing be at liberty to cancel his order to carry out such class of work and arrange to carry it out in such manner as he may consider advisable provided always that if the rates shall have been determined as lastly here in before mentioned then in such case he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination of the rate as aforesaid according to such rate or rates as shall be fixed by the Executive Engineer. In the event of dispute, the decision of the Superintending Engineer of the Circle will be final.

17. Extension of Time Limit in consequence of Addition or Alteration.

The time limit for the work shall be extended in the proportion that the increase in its cost occasioned by alterations or additions bears to the cost of the original contract work and the certificate of the Engineer-in-charge as to such proportions shall be conclusive. No compensation shall be payable for Alternation in or Restriction of Work to be carried out. If at any time, after the execution of the contract documents the Engineer-in-charge shall, for any reason whatsoever, require the whole or any part of the work, as specified in the tender, to be stopped for any period or shall not require he whole or part of the work to be carried out at all or to be carried out by the contractor, he shall give notice in writing of the fact to the contractor who shall thereupon suspend or stop the work totally or partially as the case may be in any such case, except as provided here under the contractor shall have no claim to any payment or compensation what so ever 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 so derive in consequence of the full amount of work not having been carried out or on account of any loss that he may be put to on account of materials purchased or agree to be purchased or for unemployment of labour recruited by him. He shall not also have any; claim for compensation by reason of any alterations having been made in the original specification, drawings, designs and instructions which may involve any curtailment of the work as originally contemplated.

18. No claim to compensation on account of loss due to delay in supply of materials by Corporation.

The contractor shall not be entitled to claim any compensation from Corporation for the loss suffered by him on account of delay by Corporation in the supply of materials entered in Schedule-A where such delay is caused by: Difficulties relating to supply of railway wagons
I. Force Majeure
II. Act of God
III. Any other reasonable cause beyond the control of Corporation including Shortage of materials to be supplied by the Corporations & difficulties in time by reaching at the site of any materials equipment. In the case of such delay in the supply of materials, Corporation shall grant such extension of time for the completion of the works as shall appear to the Executive Engineer to be reasonable in accordance with circumstances of the case. The decision in the Executive Engineer as to the extension of time shall be accepted as final by the contractor.

19. Time Limit for Compensation Claims

Under no circumstances, whatsoever, shall the contractor be entitled to any compensation from Corporation on any account unless the contractor has claimed in writing to the Executive Engineer within one month of the cause thereof.

20. Action and Compensation payable in case of Bad Work

If at any time, before the security deposit is refunded to the contractor, it shall appear to the Executive Engineer or his subordinate in charge of the work that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of inferior quality or that any materials or articles provided by him for the execution of the work are unsound or of a inferior quality to that contracted for or are otherwise not in accordance with the contract, it shall be lawful for Engineer-in-charge to intimate this fact in writing to the contractor and then no withstanding the fact that the work, materials or articles complained of, may have been inadvertently passed, certified and paid for, the contractor shall be bound forthwith to rectify or remove and reconstruct the work so specified in whole or any part, as the case may require or if so required shall remove the materials or articles so specified and provided other suitable materials or articles at his own charge and cost, and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in the written intimation aforesaid the contractor shall be liable to pay compensation at the rate of one percent on the amount of the estimate for every day, not exceeding ten days during which the failure so continue and in the event of any such failure as aforesaid the Engineer-in-charge may rectify or remove and re-execute the work or remove and replace the materials or articles complained of, as the case may be, at the risk and expense in all respects of contractor should the Engineer-in-charge consider that any such inferior work or materials as described above may be accepted, or made use of, it shall be within his discretion to accept the same as such reduced rates as he may fix thereof. Provided that in the case of any work of which visible check is not possible, if the Engineer-in - charge or his subordinate in charge of the work feels that such work has been executed with unsound, imperfect or unskillful workmanship or with materials of inferior quality, he shall take sample tests at random, cost of which shall have to be borne by the contractor and if after taking such test, part of such work is found to be defective in any respect or to have been executed with materials of inferior quality, then the contractor shall be paid for the whole work such amount as may be fixed by the office of the Engineer-in-charge on the basis of the lowest quality of work found by him in such samples tests.

Explanation: I
Sample Test shall mean:
(i) In relation to poles fixed as line supports, the token of one pole out of every 100 poles after taking it out from its foundation for inspection.
(ii) In relation to any other work, such test as may be considered necessary, by the Engineer-in - charge or his subordinate in charge of the work.

Explanation: II
Cost of the sample test shall mean cost incurred for the purpose of taking Samples & test and for restoring tested work to its original condition.

21. Work to be opened to Inspection, Contractor or Responsible Agent to be present

All works under execution or in course of execution in pursuance of the contract shall at all times be open to the inspection and supervision of the Executive Engineer and his subordinate and contractor shall at all times, during the usual working hours and at all other times at which reasonable notice of the intension of the Executive Engineer or his subordinates to visit the works shall have been given to the contractor, during which period either he should be present to receive order and instruction, or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the contractor's duly authorized Agent shall be considered to have the same force and effect as if they had been given to the contractor himself.

22. Notice to be given before work is covered up.

The contractor shall give not less than 5 days' notice in writing to the Executive Engineer or his subordinates in charge of the work, before covering up or otherwise placing beyond the reach of measurement of any work, in order that the same may be measured and correct dimensions thereof, taken before the same is so covered up or placed beyond the reach of measurement and shall not covered up or placed beyond the reach of measurement and work without the consent in writing of Executive Engineer or his subordinate in charge of work, If any work shall be covered up or placed beyond the reach without such notice having been given or consent obtained, the same shall be uncovered at the contractor's expense, and in default thereof, no payment or allowance shall be made for such work, or for the materials, with which the same, was executed.

23. Contractor's Liabilities

The Contractor shall supply, at his own cost, all materials (except such special materials, if any as may be supplied form the Corporation stored in accordance with the contract) plant, tools, appliances, implements, ladders, cordage, tackles, scaffolding and any temporary works which may be required for the proper execution of the work., in the original, altered or substituted form and whether included in the specification or other document forming part of the contract or referred to in these conditions or not and which may be necessary for the purpose of satisfying or complying with the requirements of the Engineer-in-charge as to any matter on which under these conditions, he is entitled to be satisfied or which he is entitled to require together with carriage thereof to and from the work, the contractor shall also supply without charge, the requisite number of persons for setting out works, and counting, weighting and assisting in the measurement of, examinations at the time and from time to time of the work or materials, failing this, the same may be provided by the Engineer-in-charge at the expenses of the contractor and the expenses may be deducted from any money due to the contractor under the contract or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof the contractor shall provide all necessary fencing and light required to protect the public from accident and shall also be bound to bear expenses of defense of every suit, action or other legal proceedings of law that may be brought by any person for injury sustained. Owing to neglect of the above precautions and to pay any damage and costs which may be awarded in any such suit, action or proceedings to any such persons or which may with the consent of the contractor be paid in compromising any claim by any such person.

24. Contractor Liable for all Damages

Compensation for all damage done intentionally or unintentionally by contractor's laborer, whether in or beyond the limit of Corporation's property, shall be estimated by the Executive

Engineer, or such other office, as he may appoint and the estimate of the Executive Engineer, subject to the decision of the Superintending Engineer, on appeal, shall be final and the contractor shall be bound to pay the amount of the assessed compensation demand, failing which, the same will be recovered from the contractor as damages or deducted by the Engineer in charge from any sums that may be due to or become due from Corporation to the contractor under this contract or otherwise. The contractor shall bear the expenses of defending any action or other legal proceedings that may be brought by any person for injury sustained by him owing to neglect of precautions to prevent the spread of fire and he shall also pay any damage and costs that may be awarded by the court if in consequence.

25. Rescission of Contract and Forfeiture of Deposit.

The contractor shall not assign or sublet, without the written approval of the Engineer-in-charge and if the contractor assign or sublet his contract, or attempt to do so or become insolvent or commence any proceedings to be adjudicated as insolvent or make any composition with creditors, attempt to do so, the Engineer-in-charge may, by notice in writing rescind the contract. Also, if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise shall either directly or indirectly be given, promised or offered by the contractor or any of his servants, or agents, or any person to the employee of Corporation in any way relating to his office or employment or if any such officers or persons shall become in any way directly or indirectly interested in the contract, the Executive Engineer may, by 10 days' notice in writing, rescind the contract. In the event of a contract being rescinded the Security Deposit of the contractor shall there upon stand forfeited and be absolutely at the disposal of Corporation and the same consequences shall ensure as it the contract has been rescinded under clause 4 thereof and in addition the contractor shall not be entitled to recover or be paid for any work thereof actually performed under the contract.

26. Compensation

All sums payable by a contractor by way of compensation under any of these conditions shall be considered as a reasonable compensation to be applied to the use of Corporation, without reference to the actual loss or damage sustained and whether any damage has not been sustained.

27. Change in the constitution of firm to be notified

In the case of tender by partners of a firm, any change in the constitution of firm shall be forthwith notified by the contractor to the Executive Engineer for his information.

28. Works under direction of Superintending Engineer.

All works to be executed under the contract shall be executed under the direction and subject to the approval of the Superintending Engineer of the Circle, Engineer-in-charge for the time being who shall be entitled to direct at what point or points and in what manner they are to be commenced and from time to time carried on.

29. Decision of Superintending Engineer to be final.

Except where otherwise specified in contract and subject to the power delegated to him by Corporation under the Corporation's rule, then in force the decision of the Superintending Engineer of the Circle / EIC. for the time being shall be final, conclusive and binding on all of the specification, designs, drawings and instructions herein before mentioned and as to the quality of workmanship or material used on the or as to any other question, claim, right matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning, the works or the execution or failure to execute the same, whether arising during the progress of the work or after the completion or abandonment thereof.

30. Arbitration

'all questions, disputes or differences, whatsoever which may at a time arise between the parties to this contract in connection with the contract or any matter arising out of or in relation there to, shall be referred to the "Gujarat public works contracts disputes arbitration tribunal" as per the provisions of the Gujarat public works contracts disputes arbitration tribunal act, 1992.

The reference to arbitration proceedings under this clause shall not:

a)Affect the right of the Engineer-in-charge to take possession of all or any tools, plants, materials and stores, in or upon the work or site thereof or belonging to the contractor or procured by him and intended to be used for the execution of the work or any part thereof.
b) Preclude the Engineer-in-charge from utilizing the materials purchased by the Contractor in any work or from removing such materials to other place, during the period the work is stopped or suspended in pursuance of notice given to the contractor under General Conditions.
c) Entitle the contractor to stop the progress of the work or carrying out the additional or altered work in accordance with the provision of General Conditions for the work where there is no specification.
d) Preclude the Corporation from getting the work done by another agency.
Neither party is entitled to bring a claim to arbitration latest by the thirty days after the expiration of the defects liability period.
The provisions of the Arbitration & conciliation Act, 1996, Gujarat Public Works Contract Disputes Arbitration Tribunal Act, 1992 and rules made there under shall apply to the arbitration proceeding under this clause.

31. Stores to be obtained from Corporation

The Contractor shall obtain from the Corporation Stores, such articles as are mentioned in Schedule 'A' which may be required for the work or any part of the work or in making up any articles required therefore or in connection therewith, unless he has obtained permission in writing from the Executive Engineer or obtained such stores and articles from elsewhere. The value of such stores and articles as may be supplied to the contractor by the Engineer-in-charge will be debited to the contractor in his account at the rate shown in the Schedule "A" attached the contractor and if they are not entered in said schedule they shall debited to him at cost price which for the purpose of this contract shall include cost of carriage and all other expenses whatsoever which may have to be incurred in obtaining delivery of the same at the stores aforesaid and further overhead charges 15% plus GST as applicable . The Contractor shall be responsible for the loss destruction or deterioration of the materials, stores or articles supplied to him by the Corporation, even if such loss destruction or deterioration has occurred under any circumstances whatsoever beyond his control as if the material, stores or articles so supplied were his property. The contractor shall be responsible for returning the residual materials after completion of the contract and if fails to return, the balance material supplied to him by the Corporation, the cost of the residual materials will be recovered form the contractor at the market rate or stock issue rate whichever be higher at the time of materials account plus 15% plus GST as applicable.

32.1 Lump Sum in Estimate

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

32. A-1- Lump Sum Tenders

Whenever lump sum tenders have been invited for building or other structures of the same type, design, the contractor shall submit his bill stated in Clause No.11 and the Engineer-in-charge not below the rank of Executive Engineer shall certify by general measurement or by other method considered suitable to him, the value of work done and the contractor shall be paid monthly a sum equal to 90% of the total value the work so certified, since the last payment, after deducting a part or whole of the secured advance if not already paid for the materials utilized on the works. An additional secured advance for any fresh materials brought on site will also be paid if certified by the officer not below the rank of Executive Engineer. After the work is completed final bill would be paid on the certification of officer not below the rank of Executive Engineer, that the work is done according to drawing and specifications attached to the tender. If any additions and alteration have been carried out, detailed measurements in respect thereof shall be recorded and extra payment or deductions are regulated as per item rates quoted by the contractor while submitting the tender and if there are any items in the additions and alterations for which the contractor has not quoted a rate, the payment shall be as per Clause 15 above.

33. Action where no specifications.

In the case of any class of work for which there is no such specifications as is mentioned in clause 1. such work shall be carried out in accordance with the divisional specifications and in there event of there being no divisional specifications, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-charge / consultant of the Corporation etc.

1. **Wages to be paid and time of payment etc. by the Contractor: -**

a) The contractor shall pay minimum wages as fixed under Minimum Wages Act whichever is higher. The wages of every contract labour employed by him under this contract shall be paid by him before the expiry of 7th day of the last day of the month in respect of which the wages are payable (i.e. wages of a month have to be paid by him in the first week of the next month). The payment shall be disbursed in presence of Management Representative during the working hours in factory premises and the contractor shall get the entries certified in the register of wages by the Representative of the Corporation. Any default will result in cancellation of contract forthwith or else the contractor shall be punishable to the extend of Rs.100/- fine per each day.

b) The contractor shall give his telephone number and address to the Corporation so that in case of labour trouble etc., the contractor can be contacted. The contractor shall arrange to have his office outside the factory premises and the contractor keep himself present throughout the working hours.

Labour Laws:-

a) Persons below the age of 18 years shall not be employed for the work.
b) Female worker shall be employed according to latest labour laws
c) Contractor shall maintain a valid labour license under the Contract Labour (Regulation and Abolition Act) for employing necessary manpower to be required by him. In the absence of such license the contractor shall be liable to be terminated without assigning any reason thereof.
d) The contractor shall at his own expense comply with all labour laws and keep the Corporation indemnified in respect thereof. Some of the major liabilities under various labour and industrial laws which the contractor shall comply with are asunder:
i. Payment of contribution of wages of employer's contributions towards Provident Fund, Family Pension Scheme, Deposit Linked Insurance Scheme, Administrative Charges etc. at the rates made applicable from time to time by Government of Gujarat / Government of India or other Statutory Authorities.

ii. Payment of deposit in respect of each contract labour of the rate of RS.30/- with the office of the Commissioner of Labour as per the Contract Labour Act (Regulation & Abolition).
Iii.License Fee as prescribed under the contract Labour Act (Regulation and Abolition) and Rules framed there under depending upon the number of workmen employed by the contractor.
iv. Paid leave facility and wages as per the provision of the Factories Act at the rate of one day for every 20 days of working.
v. Identity cards as prescribed under the factories Act with photo affixed thereto, the same for identification.
vi. Payment of retrenchment compensation, notice pay and other liabilities as per Industrial Disputes Act. Any payment to the contractor's employees arising out of any claim of disputes under the Industrial Disputes Act – 1947 or any other laws.
vii.Provision of compensation in the case of accidental injury.
viii.Payment of crèche if the female labour employed is more than 30 numbers
ix. Maternity leave as per the provision of the Maternity Benefit Act.
The above are some of the major liabilities of the contractor in addition to other liabilities prescribed under the various Labour Las in force from time to time from Statutory Authorities like State Government / Government of India which the contractor shall have to comply with.

2. Provident Fund and Family Pension Scheme
The contractor shall submit along with his bill (month wise) a statement regarding deductions against employees provident fund and family pension scheme in respect of each concerned employees' Provident Fund and Family Pension scheme at the rate of 12 % (or at the rates made applicable by the Government from time to time) of the wages. Contractor's contribution and his workers contribution towards provident fund and family pension scheme shall be deposited by the contractor with regional Provident Fund Commissioner, Ahmedabad.

3. Deposit Linked Insurance Scheme:-
The contractor shall have to deposit ½ % of the wages in-respect of employees who is a member of the Provident Fund as the contribution to the Deposit Linked Insurance Scheme with Regional Fund Commissioner, Ahmedabad.

4. Administrative Charges:-
Administrative charges for maintaining Provident Fund Account shall be deposited by the contractor with Regional Provident Fund Commissioner, Ahmedabad at the rates applicable.

5. Paid Leave Facility
Paid leave facility at the rate of one day for every 20 days worked by the contract laborer shall be provided by the contractor to his workers. He shall maintain Leave records/ Leave Cards for individual laborer, which shall be duly verified and approved/ certified by the authorized officer of the Corporation.

6. Workmen's Compensation Fund and Employers Liability Insurance:-
The contractor shall cover all his employees under Workmen's Compensation Fund and under the Liability Insurance. The contractor shall employ adequate number of experienced staff at site for daily supervision and for maintenance of various registers and records required under the law and contract. No payment for supervision shall be admissible.

7. Contractor to Indemnify to the Corporation
The contractor shall indemnify and keep indemnified the Corporation and every officer and employees of the Corporation and also Engineer-In-Charge and his staff against all actions, proceedings, claims, demands, costs and expenses whatsoever arising out of or in connection with the matters referred in above clauses and elsewhere and against all actions, proceedings, claims, demands, costs and expenses which may be made against the Corporation by any workman/ employee of the contractor or any sub-contractor and / or from any liability may

arise to any workman / employees of the contractor or any sub-contractor under any laws, rules or regulation having the force of law including but not limited to claims against the owner under workman's compensation Act, 1923. The employee's Provident Act 1952, and / or the contract
Labour (Abolition and Regulation) Act 1979. The Corporation shall not be liable for or in respect of or in consequence of any accident or injury to any workmen or other person in the employment of the contractor or his sub-contractors, and the contractor shall indemnify and keep indemnified the Corporation against all such damage and compensation and against all claims, demands, proceedings costs, charges and expenses whatsoever in respect thereof or in relation thereto.

8. Workmen's Compensation and Employer's Liability Insurance:-
Insurance shall be affected for all the contractor's for all the contractor's employees engaged in the performance of this contract. If any of the work is sublet to the sub-contractor, the contractor shall require that he or his sub-contractor to provide workmen's compensation and employer's liability insurance for the latter's employees unless such employees recovered under the contractor's insurance.

9. The Corporation reserves the right to terminate this rate contract at any time during it tendency without giving notice of termination or any reasons thereof.

10. The Corporation will be entitled to deduct directly from the bills, to be paid to the Subcontractor and Laborers' any sum or sums payable by contractor and which sum/sums the Corporation is required to pay as a principal employer on account of contractor's default in respect of all liabilities referred to in above clauses.

11. Nothing in the contract document stated shall any wise constitute any workmen/ employees of the contractor or any sub-contractor as or to be workmen/employee of the power, or place obligation or liability in respect of any such workmen/ employee upon the Corporation.

NOTE: -The Prevailing Act at the time of execution of work over and above act specified herein shall be binding to the contractor

34. No Claim for Variation in Quantities of Work

Quantities shown in the tender are approximate and no claim shall be entertained for quantities of work actually executed, being either more or less up to any extent than those entered in the tender or less than those entered in the tender or estimate.

35. No Claim for Compensation for Delay in staring work

No compensation shall be allowed for any delay caused into starting of work on account of acquisition of land and in the case of clearance for works or any delay in according sanction to estimates**.**

36. No Claim for Compensation for delay in execution of work

No compensation shall be allowed for any delay, in execution of the work on account of water standing in borrow pits or compartment. The rates are inclusive for hard or cracked soil, excavation in mud, sub-soil water or water standing in borrow pit and no claim for an extra rate shall be entertained unless otherwise expressly specified & mentioned in the tender.

37. Entering upon or commencing any portion of work

The contractor shall not enter upon or commence any portion of work except with the written authority or instructions of the Executive Engineer or his subordinate in charge of the work, failing such the contractor shall have no claim to ask for measurement or payment for work.

38. Method of Payment

Payment to contractors shall be made by direct RTGS to contractor's bank account. Generally, payment may take 30 to 60 days after passing of bills depending on availability of fund.

39. Acceptance of conditions on tendering for work.

Submission to tender or acceptance of work order shall imply acceptance of these conditions of tender by contractor.

40. Employment of Scarcity Labour

If government declares a state of scarcity or famine to exist in any village situated within 20kms of the work, the piece worker / contractor shall employ upon such part of the work as are suitable for unskilled labour; any person certified to him by the Executive Engineer or by any person to whom Executive Engineer may have delegated this duty in writing to be in need of relief and shall be bound to pay such person wage not below the minimum, which Government may have fixed in this behalf from time to time. Any implementation of this clause shall be decided by the Superintending engineer / Engineer-in-Charge whose decision shall be final and binding on the piece worker/contractor.

41. Employment of Technical Persons

The contractor who are registered under class 'A', 'B' and 'C' or such contractors who executes the works of Rs.5 Lakhs and above shall employ the technically qualified personnel possessing minimum a Diploma of reconciled Technical institution, for executing the work of the Corporation.

Date:
(Signature of Contractor)
Address: GETCO Gondal
Seal:

Superintending Engineer (AM)
AM Circle office

GENERAL CONDITIONS OF CONTRACT

1.0 Contactor to inform himself fully:

The contractor shall be deemed to have carefully examined the work & site conditions, the general conditions, the special conditions, specifications, schedules, drawings shall be deemed to have visited the site of the works & to
have fully informed himself regarding the local conditions. Copy of Annexure V attached with tender shall have to be filled up before quoting the rate, for confirmation of site visit. If there shall have any doubts as to the meaning of any portion of these general conditions or special conditions of the scope of work of the specifications or any other matter concerning the contract, he shall in good time before submitting his tender, send for the particulars thereof & submit them to the Engineer in writing in order that such doubt may be removed.

2.0 Data to be furnished by Contractor:

Prior to the commencement of work, the contractor shall submit a bar chart showing detailed programme for completing the work within time limit to the S. E. for approval within a week of the date of LOI. No change in the approved plan & layout shall be carried out without specific written approval of the Executive Engineer in charge.

3.0 Errors, Omissions & Discrepancies:

In all cases of errors, omissions, doubts or discrepancies in the dimensions, or discrepancies in the drawings & items of work on specifications, reference shall be made to the Executive Engineer whose elucidation & elaboration shall be considered as authoritative. The contractor shall be held responsible for any error that may occur in the work thorough lack of such reference.

4.0

1. Temporary structures may be erected by the contractor for storage sheds, offices, and residential etc. for non-commercial use on land, handed over to him at his own expense & with the permission of the Corporation. In any circumstances for constructing temporary structures contractor's use, Corporation free supply of materials shall not be made. If it is found that Corporation's free supply material are used for the works other than approved drawings, it will be recovered at penalized rate.
2. The contractor shall preserve all existing vegetation such as trees on or adjacent, to the works site which, do not interfere with the construction as determined by the Corporation.
3. The contractor shall take all possible precautions in felling trees authorized for removal to avoid any unnecessary damage to vegetation & trees not to be felled & to structures or to workmen, & shall be responsible for any damage if it occurs in such operations.
4. All produce from cutting of trees grass etc. shall be the property of Corporation & shall be stacked at the directed places. No claim shall be made for such tree felling / cutting &stacking of trees/produce or grass etc. by the contractor.
5. The land shall as herein before mentioned be handed over to Corporation / Owner of Land immediately after the completion of the work under this contract. Also no land shall be held by the contractor longer than the Corporation shall deem fit & necessary & the contractor shall, on due notice by the Corporation, vacate & return the land which the Engineer In Charge may certify as no longer required by the contractor for purposes of the work.

5.0 Start of Work:

The contractor shall not enter upon or commence any portion of the work except with the written permission of the authority of the Corporation, failing which the contractor shall have no claim to ask for measurement of or payment for work & shall be responsible for any claims or damages that may arise due to such unauthorized commencement or entry.

No compensation shall be allowed for any delay caused in starting the work on account of any delay in clearance of the work site.

6.0 Work to execute to the satisfaction of the Corporation's Engineers:

The contractor shall proceed with the work with diligence & expedition & the whole of the work herein specified as well as the mode of execution shall be under the supervision & the direction & shall be carried on to the entire satisfaction of the Corporation's site Engineers, who shall have full powers to order the contractor to alter, enlarge or diminish the form, dimensions, positions, or quantities of any of the work or to make use of materials & workmanship of different descriptions & qualities from this herein specified. In the case of any class of work for which there are no Technical Specifications, these shall be carried out in accordance with the latest IS Codes & in the event of being no relevant IS Code, the works shall be carried out in accordance with the directions & instructions of the Corporation's Engineers at site.

7.0 Workmanship etc.:

The work shall be executed in thoroughly substantial manner with workmanship of best quality & strictly in accordance with the specifications & with the drawings, or with such other drawings or written instructions as may from time to time be furnished to the contractor, in accordance with terms of this contract & shall be completed in every respect with workmanship implied & necessary according to the fair interpretation & meaning of the same & should there be any discrepancy between the drawings & specifications or any difference or dispute as to the dimensions to be worked out or the mode of doing periodical quantity of the work to be executed or with respect to any subject arising out of this contract, the decision of the Corporation's authorized Engineers shall be final & binding on all parties.

8.0 Samples of descriptive Data:

Samples of descriptive data requiring approval shall be submitted by the Contractor to the Corporation's Engineers in good time before the use of such material to permit its inspection & testing & there-by the approval. The samples shall be properly marked to show the name of material, manufacture place or origin & the place where it is intended to be used etc. Failure of any samples to pass specified tests requirements. It shall be sufficient cause for the refusal to consider any further samples from that source.

9.0 Baselines & Grades:

The Corporation near to the site of work shall furnish one permanent Bench Mark. Semi-permanent baselines & cross lines shall be established at sufficiently spaced intervals with benchmarks by the Contractor at his own cost & risk. The contractor shall provide at his expense, all the required pillars, equipment, materials, &labour for the establishment of the grade lines & bench marks, for that the Contractor shall be responsible for their further maintenance during the execution of the actual work till the complete period of construction. The contractor shall be responsible for the proper execution of work to such lines & levels & grades as may be specified in the drawings, established, or indicated by the Corporation's Engineers. All the survey work, if required, shall be checked by the Corporation's engineers. However this shall not absolve the contractor for the correctness of survey/ temporary or permanent Benchmarks.

10.0 Contactor not to dispose of soil etc.:

The contractor shall not sell or otherwise dispose of or remove except for the purpose of this contract the sand, ballast, earth, rock or other substances or materials that may be obtained from any execution made for the purpose of this contract or produce upon the site at the time of delivery of the possession of the land but also such substances materials & produce shall be the property of the Corporation & shall be disposed off in the manner & place as directed by the Corporation's Engineers.

11.0 Gold, silver, Minerals, Oil Relics, etc. found on the Site:

All gold silver, oil relics, or other minerals, of any description & all precious stones, coins, treasures relic, antiquities, & other similar things that shall be found in or upon the site shall be the property of the Corporation. The contractor shall return the gathered things as above to the authorized representative of the Corporation.

12.0 Fencing, lighting & ventilation:

The contractor shall be responsible for the proper lighting, fencing, guarding & taking of all the necessary safety measures for all works comprised in the contract & or the proper provision of temporary roadways, footways, guards fences, caution notices etc. as far as the same may be rendered necessary by reasons for the work for the accommodation & protection of workmen foot passenger or other traffic & of the Corporation & occupiers of adjacent villages, property of the public & shall remain responsible for any accidents that may occur on account of his failure & timely precautions. All the works & approaches shall be adequately illuminated with electric lights to the satisfaction of the Corporation's Engineers. The power & lighting connections, wiring equipment shall be subject to the inspection & passing by Electrical Inspector to GOG authorized under the Indian Electricity Act. Any additions alterations or omissions shall be got approved from the Corporation's Engineers got certified from the Electrical Inspector. Work spots such as faces of excavation of borrow pits; filling area etc. shall be adequately illuminated with floodlights to the satisfaction of the Corporation's Engineers.

13.0 Explosive procurement & storage:

Explosives, petrol, oils, fuels, &other inflammable materials shall be stored strictly in accordance with the rules of the Explosive Department.

The contractor shall at his own expense construct & maintain proper magazines which are required for the storage of explosive & arrange for storage facilities for oils, petrol, fuels etc. for use in connection with the work. The contractor shall at his own cost obtain the necessary license for the storage & use of explosives, oils, petrol, diesel etc. The Corporation shall not take any responsibility whatsoever in connection with the storage or use of explosives on the site, any accident occurs in the connection at site or nearby village or vicinity. All operations of the contractor in which or for which explosives are employed shall be at the risk of the contractor & upon his own responsibility.

14.0 Liability for accidents to persons:

14.0.1 The contractor or subcontractor shall indemnity the Corporation against any claims which may be made under the workman's compensation Act, 1923, or any statutory modification or otherwise for or in respect of any damages or compensation payable in consequence of any accident or injury caused, by fault of contractor or subcontractor &sustained by any workmen or other person on the employment of the contractor or subcontractor. In every case in which by virtue of the provisions of subsection (1) of section 12 of the workman's Compensation Act, 1923, the Corporation is obliged to pay compensation to a workman employed by the contactor or subcontractor in execution of the work, the Corporation will recover from the contractor the amount of compensation so paid, and without prejudice to the rights of the Corporation under subsection 12 of the said Act, such amount will be paid back to the Corporation in 30 days, failing which the Corporation will be at liberty to recover such amount of any part thereof by deducting it from the dues by the Corporation to the contractor under this contract or otherwise. The Corporation shall not be bound to contract any claim made against either of them under section 12, subsection (1) of the said Act, except on written request from the contractor & upon his giving to the Corporation full security for all costs for which the Corporation might become liable in consequence for entertaining such claims.

14.0.2 The contractor and/or subcontractor named in the contract shall indemnity the Corporation against all claims based upon injury or death to any person in the employment of the contractor or sub contactor, or to the third parties under paragraph (a) 2 or condition no.47 to the extent of any sums recovered under the insurance policy.

14.0.3 On occurrence of the accident which result on the death of workman employed by the contractor or subcontractor, which is so serious as to be likely to result in the death of any workman, the contractor shall within 24 hours of happening of such event intimate in writing to the Engineers of the Corporation the fact of such accidents. The contractor or subcontractor shall indemnity the Corporation against all loss or damage sustained, by the Corporation resulting directly or indirectly from his failure to give intimation in the manner aforesaid including penalties or fine if any, payable by Corporation as a consequence of Corporation's failure, to give notice under workman's compensation Act or otherwise to confirm to the provisions of the said Act in regard to such accident.

Liability for damage to woks & materials:

14.0.4 The contractor shall during, the progress of the work, properly protect the works & the existing Ash Disposal pipelines & materials placed at his disposal or acquired for him by the Corporation, & shall remain answerable & liable for all accidents, damages. Loss etc. & shall be made good in the most complete & substantial manner by & at the sole cost of the contractor & to the reasonable satisfaction of the Corporation's Engineers. If the contractor fails to make good such losses, damages within the specified time given by the Corporation, the Corporation shall be at liberty to recover the amount towards such expenses fixed by the Corporation's Engineers & shall be recovered from the amount due under this contract to the contractor.

14.0.5 Further the contractor shall, at all times, protect & preserve all materials, machinery, equipment, Ash Disposal pipelines, allied structures such as spillway chambers, ADP, haul road and ramps etc., materials &so acquired by himself or Corporation for the execution of the work. All reasonable requests of the Corporation's Engineers to enclose or especially protect any of the above shall be expeditiously complied with at no extra cost.

14.0.6 If the Engineer considers that the work, asked for in the aforesaid Para, is not sufficiently & satisfactorily protected by the contractor, on requests made for, the Corporation shall be entitled to arrange for such protection at his unfettered discretion & recover the cost thereof from the contractor.

14.0.7 Until the work shall be or deemed to be taken, over as aforesaid, the contractor shall also be liable for &shall be deemed to have indemnified the Corporation in respect of all damage or injury to any person or any property of the Corporation or of others in villages nearby, occasioned by the negligence of the contractor or his workmen, or his subcontractor, or by defective /ill methods of working.

14.0.8 Materials, tools, machinery brought on the site of work: All materials, tools & tackles, machinery etc. of the contractor brought to & delivered upon the site for the work shall be the time of their being so brought shall be deemed to be the property of the Corporation in its possession to be used for the purpose of the work & for that purpose only & shall not on any account be removed or taken away by the contractor or any other person without the permission of the Corporation's Engineers in charge, but the contractor shall be fully responsible for & loss, destruction thereof or damage thereto. The Corporation may have a lien on such materials, tools, tackles, machinery for any sum or sums which may at any time prior to the completion of the works be or owing to the Corporation by the contractor, under in respect of & dispose of any such materials, tools. Tackles, machinery in such a manner as the Corporation may think fit & to apply the proceeds in or towards the satisfaction of such sum or sums due or owing as aforesaid but subject to such lien & power of sale & disposal such surplus materials, tools, tackles, machinery shall belong to the contractor & may be removed & disposed off by him as he may think fit.

15.0 Access to site & work on site:

The Engineer or his authorized representative may if he considers fit from time to time enter upon any lands which may be in the possession of the contractor under this contract, for the purpose of executing any work not included in this contract & may execute by other contractors at his opinion & the contractor shall in accordance with the requirements of the Engineer, afford all reasonable facilities for execution of the works including occupation of lands by structure or otherwise for any other contractor employed by the Corporation & his workmen or for the execution on or near site of the works not included in the contract. The contractor shall not be entitled for any extra claims on such executions.

16.0 Inspection of Works:

The Corporation's Engineers or their authorized representatives shall have at all times power to inspect the works, wherever in progress, either on site, on the contractor's premises in connection with this contract. Further, the contractor shall not allow any person other than Corporation's Engineers or their authorized representatives to the work sites. The contractor shall, during working hours, maintain supervisors of sufficient training & experience to supervise the work as a whole. All orders & directions given to such supervisors or other staff shall be deemed to have been given to the contractor. Further the Corporation may be due notice, desire a high ranking member of the supervisor staff of the contractor to be present on any specified inspection & the contractor shall comply with such directions.

17.0 Action & compensation payable in case of Bad Work:

If at any time before the refund of Security Deposit to the Contractor it appears to Gujarat Energy Transmission Corporation's Executive Engineers or subordinate and / or any authorized officer of the Corporation that the work has been executed with unsound, imperfect or unskilled workmanship or with materials of inferior quality or any materials or articles provided by him are unsound or of quality inferior to that contracted as specified in the Technical Specifications or otherwise not in accordance with the contract, it shall be lawful for the Gujarat Electricity Corporation to intimate that the works , materials, articles which may have been inadvertently passed, certified & paid to the Contractor. The Contractor shall be bound to rectify or remove & reconstruct the said work so specified at his own charge & cost & in the event of being failure to do so within specified period by the Corporation, the Contractor shall be liable to pay compensation at the rate of 1% per day on the amount of the estimate for the specified work. For the period up to 10 days this shall be attended by the Contractor else the Corporation shall get these rectifications at the risk & expense in all respects of the Contractor. Any levy of GST on such compensation payable to GETCO shall be on contractor's account.

18.0 Cleaning up:

18.0.1 The contractor shall at all-time keep the construction areas & his labour colony & storage areas free from accumulation of waste, or rejected materials.

18.0.2 Prior to the completion of the work the contractor shall remove all rubbish from & about the premises, & tools, tackles, machinery, left out materials consumable, rejected materials, scaffolding etc. which are not the part of the permanent work/structure. The premises will be left fully satisfactorily to the Corporation's Engineers/representatives; thereafter only the completion certificate will be issued.

19.0 Contractor's inventory of equipment's& machinery:

The contractor shall prepare & maintain an inventory of all machinery, equipment's, temporary rolling stock, and plant purchased or hired for the use of this contract's execution.

19.1 Progress Schedule:

Contractor shall furnish a Construction Schedule on receipt of LOI or Work Order whichever is earlier, in quadruplicate, indicating the date of start, the monthly progress

expected to be achieved & anticipated completion of each major items of the work under this contract & procurement of equipment's, machinery & other materials. The schedule should be such as is practicable of achievement the whole work in the time limit & of the particular items on due date specified in the contract & shall have the approval of the Corporation's Engineers. Detailed schedules for each working season showing the progress month by month to be achieved is to be submitted to the Corporation. The Corporation is empowered to ask for more detailed progress schedule week by week for any item or for all items & the contractor shall comply when asked for.

19.2: The Corporation shall have, at all times the right without in any way violating this contract, or forming grounds for claim to alter the order of the works or any part thereof & the contractor shall after receiving such direction proceed in the order directed. The contractor shall revise the progress schedule accordingly & submit to the Corporation in four copies.

19.3: The contractor shall furnish sufficient machinery, equipment, labour& materials shall work for such hours & shifts as may be necessary to maintain/achieve the progress of the scheduled, after getting written permission of Engineer in Charge.

19.4 The progress schedules shall be in the form of bar charts, statements &/or reports as may be necessary & directed by the Corporation's representatives.

19.5.1 Unsatisfactory Progress: In the case of unsatisfactory progress by the contractor not proceeding as per the Scheduled Programme approved by the Corporation, suitable actions shall be taken in accordance with Clauses No. 3 & 4 of the booklet prescribed by the Corporation for ``Tender & Contract for Works''.

Recoveries:

Recoveries due from the contractor, up to the end of the month previous to the one in which the bill is prepared shall be made from bills approved for payment every month or at other periods when the bills are prepared, for the enlisted, but not limited to, in the order of priorities & extents. (a) Penalty, if Leviable,

Expenditure, in full, incurred by the Corporation on contractor's behalf in labour, machinery, equipment etc.,

(c) Charges for services such as water & power supply, etc. in full,

(d) Hire charges for Corporation's or Government machinery if any,

(e) Other recoveries not specifically mentioned but recoverable.

(f) GST as applicable on recoveries due from the contractor enlisted as above.

20.0 Date of completion:

The contractor shall complete the whole work & hand over to the Corporation on or before the date specified in the work order. Provided always that if in the opinion of the Corporation the completion of the works shall be delayed by any change of original design or by the order of the Corporation, of any altered, modified substituted or additional works or materials omitted or by strikes, lock outs or stoppages of labour, or revolution, riots, civil or political disturbance or by the contractor not being given possession of the site or by the Corporation taking possession of & using the site or part thereof or the works or part thereof or any part of the work or delayed supply of material by the Corporation or by the not receiving any orders, drawings, instructions or directions in time or by the suspensions if the works or by fire, flood exceptionally bad weather tempest , storm or by from unforeseen circumstances(& whether the same shall be due to any act or omission of the Corporation or it's representatives) the Corporation may in the unfettered discretion thinks fit either forthwith or at a later time & from time to time not withstanding that the prescribed or extended time for completion has expired or work have been completed, extend the date for the completion of the works to such a date as deemed fit as practical & acceptable.

21.0 Subletting of contract

There will be generally no objection on the component parts if the work, being given over to responsible subcontractors but Corporation shall under no circumstances recognize

these subcontractors & the responsibility of executing the work in the accordance with the conditions of contract will entirely rest on the main contractor. However written consent of EIC shall be obtained before subletting. The main contractor will therefore always have the very responsible member, preferably a technical hand present on the works with power to sign all work orders issued on the site of work & to take requisite actions in the interest of efficient execution of work.

22.0 Other contracts for the suspension stoppage or curtailments of work:

If during the tendency of the contract the Engineer shall for any reason (which shall be unquestioned) whatsoever require the whole or any part of the work as specified in the contract to be suspended for any period or shall not require the whole or any part of the work as specified in the contract to be carried out at all by the contractor, he shall give notice in writing of the fact to the contractor who shall thereupon suspend or stop the work totally or partially as the case may be. In any case except as provided hereunder, the contractor 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 he did not so derive in consequence of the full amount of the work not having being carried out, or on account of any loss that he may be put on account of materials purchased or agreed to be purchased or for unemployment of labour recruited by him. He shall not also have any claim for compensation but reason of any alterations having been made in the original specifications, drawings, designs & instructions that may involve any curtailment of the work as originally contemplated. Where however, materials have already been purchased or agreed to be purchased by the contractor, before receipt of the aforesaid notice, the contractor shall be paid for such materials at the rate determined by the Corporation, provided they would have been useful for the work curtailed or stopped are not in excess of requirements are of approved quality & cannot be used on other contract works or otherwise by the contractor &/or shall be compensated for the loss if any, that he may put to, on respect of materials agreed to be purchased by him, the amount of such compensation to be determined by the Corporation, whose decision shall be final. The Corporation may order the contractor to suspend any work on account of bad weather; rain or storm & such other adverse climate conditions & the contractor shall comply with the same. The contractor shall not be entitled to any compensation for such suspensions of work.

23.0 Other contractors:

Apart from this work, the other works connected with this work will be simultaneously going on either departmentally or through any other contractors. The contractors shall co-operate with others to their fullest extent & shall allow each other every facility & coordination for the execution of their works simultaneously & satisfactorily, during their action of machinery or execution of any other co-ordination works, the contractor will have to co-operate as directed buy the Corporation's Engineers in the charge of the works. In such cases the contractor shall not be entitled for any compensation on account of reduction or stoppage of labour force/machinery/equipment etc. In the matter of dumps, haul, roads, drainage, diversion & the like, each contractor shall take into considerations the needs & the requirements of the other contractors if any working in the vicinity. Further no contractor shall take or cause to be taken any stops or action that may cause disruption, discontent or disturbance to the work, labour arrangements etc. to other contractors. Any action, by any contractor, which the Corporation in the unquestioned discretion may consider as infringement of the above code, would be considered as a breach of the contract conditions & the Corporation may take such action as may deem fit against the contractor & the action taken shall be considered as final & binding.

24.0 Speed of work:

The contractor shall at all times maintain the speed of work to confirm to the latest operative progress schedule but the Corporation may at any time with sufficient notice in

writing direct the contractor to slow down or to accelerate any part or the whole work for any reason (which shall not be questioned whatsoever) & the contractor shall comply with such orders of the Corporation. The compliance of such orders shall not entitle the contractor to any claim or compensation.

25.0 Contract document & matters to be treated as confidential:

All documents, correspondence, decision & other matters concerning the contract shall be considered as of confident & restricted nature by the contractor & he shall not divulge or allow access there to any unauthorized persons of any kind.

26.0 Access to the contractor's book:

Whenever it is considered necessary by the Corporation to ascertain the actual cost for execution of any particular item of work, the Corporation may do so by directing the contractor to produce the original invoices.

27.0 Interest on money due to the contractor:

The contractor shall not be entitled to receive the interest on the payment due to him upon measurements or otherwise or on any balance payable to the contractor. Also, contractor shall not be allowed to relate it with the progress of work at site in any case.

28.0 Measurements to be provisional & subject to correction:

Every measurement for running payment on account of work done shall be subject to adjustment or final measurements. In case there is disagreement between such intermediate & final measurements, the latter shall prevail.

29.0 R. Bills:

The contractor shall submit his R/A bill every month, which shall be processed in reasonable time after checking and recording the MB. The contractor shall be responsible to submit R/A bills well in time and shall depute his representative for joint checking of the measurements; so that the bills can be processed in time. The contractor shall take due care in this regard, failing to which consequences will be up to him.

30.0 Breach on part of Corporation not to annul contract:

No breach or non-observance on the part of the Corporation of any the agreements contained herein, shall annul this contract of discharge the contractor from the observance &performance thereof, or of any part thereof, but on application by the contractor & in the unfettered discretion of the Corporation an extension of time may be given to the contractor in respect of such breach or non-observance by the Corporation.

31.0 Labour conditions:

31.1 The contactor shall comply with the labour laws laid as may be current & shall furnish the returns & information as may be specified from time to time.

31.2 The contractor shall as far as possible obtain his requirements of labour, skilled & unskilled from the local areas.

31.3 The contractor shall pay wages as per the latest circulars applicable at the times for the minimum wages to be paid to unskilled, semiskilled & skilled labour prescribed by the Govt. of Gujarat.

31.4 The Corporation shall have the authority to remove from the work site any person, who may be considered unfit or undesirable & no responsibility shall be accepted by the Corporation for any delay or extra expense caused towards the completion of the work by such removal.

31.5 If Govt. declares a state of scarcity or famine to exist in any village situated within 10 Km. of the work site then the piece worker or contractor shall employ upon such parts of work, as are suitable for unskilled labour any person certified by the Corporation or by

any person to whom the Corporation has authorized, & shall pay the minimum wages as fixed by the Govt. of Gujarat in this behalf. Any dispute that may arise in the implementation of the clause the decision of the Supdt. Engineer (civil) shall be final & binding.

31.6 The contractor shall provide reasonable facilities to the labour employed by him. The usual facilities are weatherproof shelter for rest &meal; supply of whole some drinking water, facilities for obtaining food, reasonable washing & sanitary facilities, special facilities for women workers, suitable residential accommodation, general sanitation & health measures etc.

31.7 The implementation of any & all provisions of this clause in no way entitles the contractor to claim in this contract.

32. Local Laws:

31.1 All local laws in force at the time entering into the contract & those enacted there after shall be binding on the contractor & he shall abide by the same.

All import duties, sales tax & other local taxes shall be borne by the contractor & they shall be deemed to have covered by this quoted rate.

33. Performa returns:

The contractor shall maintain the Corporation may specify Performa, charts & details regarding machinery, equipment, materials labour, personnel & other matters astime-to-time.

34. Maintenance:

The contractor shall maintain the works under contract for a period of one year from actual date of completion and during this period all maintenance expenditure incurred shall be borne by the contractor.

35. Insurance:

The contractor shall procure, or arrange for the Subcontractor to procure insurance coverage in amounts approved by the Corporation & sufficient to protect against the following risks arising out of the work. Accidents & professional & non-professional sickness of all labourers& personnel engaged in the work as required by Law pursuant to Workmen's Compensation Act, 1923 or Revised version thereof. Injury or death to third parties including without limitation injury or death caused by any of the construction aids or vehicles or rented machinery, equipment used by the contractor or subcontractor whether at the site or elsewhere. Damage to contractors tools machinery construction equipment form works, scaffolding materials etc. due to floods, earthquake or any such cause. Damage to the existing permanent structures of the Corporation & nearby villages, equipment of the Corporation or of the co-contractors working in the area for other works. All the above conditions referred for the insurance cover, shall be in effect from the date of commencement of the work until the Corporation has accepted the work. In the policies covering the insurances referred to above, the Corporation, contractor & the subcontractor shall be as co-ensured where possible.

The cost of insurance shall be borne by the contractor.

36. Liens:

Final payment to the contractor shall not be made until the contractor shall deliver to the Corporation receipts in full in lieu thereof, & in either case, an affidavit that so far he has knowledge or information the releases & materials for which in lien could be filed. If any lien remains unsatisfied after all the payments are made, the contractor shall refund to the Corporation all money that the latter may be compelled to pay in discharging such a lien, including all costs & a reasonable attorney.

SECTION –D
TECHNICAL SPECIFICATIONS:

GUJARAT ENERGY TRANSMISSION CORPORATION LTD

STANDARD FIELD QUALITY PLAN (REVISED-R1)

FOR CIVIL WORKS OF GETCO PROJECTS

Sr. No.	Component/Operation & Description of Test	Sampling Plan With Basis	Ref. Document for Acceptance	Testing Agency	Specific Guideline	Approving Authority
1	MATERIAL					
A	CEMENT (FROM APPROVED LIST ONLY)					
(i) (ii) (iii)	Fineness Compressive Strength Initial & final setting time	As per mix Design requirement	IS: 456,IS: 269 IS: 8112,IS: 12269 IS: 1489	Govt. Approved Lab	The tests for cement Coarse aggregates & Fine aggregate shall be conducted during Mix design for Concrete. Mix design shall be subject to approval by GETCO	B-3
B	COARSE AGGREGATES (FOR CONCRETE)					
(I) (ii) (iii) (iv) (v) (vi) (vii) (viii) (ix)	Determination of Particle size (Sieve Analysis) Flakiness Index Crushing Value Specific Gravity Bulk Density Absorption Value Moisture Content Soundness of Aggregate Presence of deleterious materials.	As per mix Design requirement	IS: 383,IS: 2386 IS: 456	Govt. Approved Lab	In case of change of source of coarse& Fine aggregates, mix Design should be revised.	B-3
C	COARSE AGGREGATES (FOR ROAD AND YARD)					
(i) (ii) (iii) (iv) (v) (vi) (vii) (viii) (ix) (x) (xi) (xii) (xiii)	Particle Size Distribution Elongation Index Flakiness Index Deleterious Material Specific Gravity Water Absorption Impact Value Los Angeles Abrasion Value Aggregate Crushing Value 10% Fines value Soundness Alkali Aggregate Reactivity Petrography	As per relevant IS	IS ; 2386, IS : 383	Govt. Approved Lab	To be approved by GETCO	B-3
D	FINE AGGREGATE					

(I) (ii) (iii) (iv) (v) (vi) (vii)	Gradation /Determination ofParticle size Specific Gravity and density. Moisture content Absorption Value Bulking Silt Content Test Presence of deleterious materials	As per mix Design requirement	IS: 383,IS: 2386,IS: 456	Govt. Approved Lab	In case of change of source of coarse& Fine aggregates, mix Design should be revised.	B-3
E	**BURNT CLAY BRICKS**					
(i) (ii) (iii) (iv)	Dimensional tolerance Compressive Strength Water Absorption Efflorescence	As per relevant IS	GETCO Specs. IS: 3495) (Part I to Iv)	Govt. Approved Lab	To be approved by GETCO	B3
F	**FLY ASH LIME BRICKS**					
(i) (ii) (iii) (iv) (v)	Dimension Water absorption Drying Shrinkage Compressive Strength Efflorescence	As per relevant IS	GETCO Specs. IS: 3495 and IS : 12894	Govt. Approved Lab	To be approved by GETCO	B-3
G	**SOLID CC BLOCKS**					
(i) (ii) (iii) (iv) (v)	Dimension Block Density Compressive strength Water absorption Dry Shrinkage	As per relevant IS	GETCO Specs. IS: 2185 Part 1	Govt. Approved Lab	To be approved by GETCO	B-3
H	**BELLA STONE**					
(i) (ii)	Water absorption Compressive Strength	As per relevant IS	GETCO Specs. IS: 2386 Part 3	Govt. Approved Lab	To be approved by GETCO	B-3
I	**PRECAST CC PAVER BLOCKS**					
(i) (ii) (iii) (iv) (v) (vi)	Shape and Dimension Compressive Strength Flexural Strength Abrasion Resistance Split Tensile Strength Water absorption	As per relevant IS	GETCO Specs. IS: 15658	Govt. Approved Lab	To be approved by GETCO	B-3
J	**SOIL TO BE USED FOR BACK FILLING**					
(i) (ii) (iii) (iv) (v) (vi) (vii)	Grain Size Analysis Atterberg's limit Classification of Soil Free Swell Index Swelling Pressure Proctor Test SO_3 (Sulphate) Content	As per relevant IS	IS :2720	Govt. Approved Lab	To be approved byGETCO	B-3
K	**WATER**					
(i)	Cleanliness (Visual Check)	Random	IS: 456,IS: 3025 and Specification. The Water used for mixing concrete shall be fresh, clean and free from oil, acids and alkalis,	Contractor / GETCO	Each source to be Approved by GETCO	C

(II)	Chemical and physical properties of water for checking its suitability for construction proposes.	One sample per Source	organic materials, or other deleterious materials IS: 456,IS: 3025 and GETCO Specification	Govt. Approved Lab		
L	**REINFORCEMENT STEEL(FROM APPROVED LIST ONLY)**					
(i) (ii) (iii) (iv) (v) (vi)	Identification & size Chemical Analysis Test Tensile Test Yield stress\proof stress Percentage Elongation Bend/Re-bend Test Reverse Bend Test for HYSDWire	Random One sample per Heat One sample per Each size One sample per Each size One sample per Each size One sample per Each size One sample per Each size	IS: 432,IS: 1139, IS: 1786 &GETCO Specification	Contractor should produce manufacturer's test Certificate. i.e. From approved Manufacturer. Govt. Approved Lab	Approved by GETCO.	B-3
M	**STRUCTURAL STEEL**					
(i) (ii) (iii) (iv) (v) (vi) (vii) (viii)	Chemical Composition Tensile Strength Yield Strength Percentage Elongation Bend Test Impact Test Y Groove Crackability Test Dimensions	One sample per Heat One sample per Each size One sample per Each size One sample per Each size One sample per Each size One sample per Each size One sample per Each size Random	IS :2062, IS :228, IS : 1608, IS : 1599, IS : 1757, IS : 10842	Govt. Approved Lab	Approved by GETCO.	B-3
N	**FOUNDATION BOLTS**					
(i) (ii) (iii) (iv) (v) (vi) (vii)	Identification & size Chemical Analysis Test Tensile Test Yield stress/Proof Stress Percentage Elongation Bend / Rebend Weight/Thickness/Uniformity of Galvanizing	Random One sample per Each One sample per Each One sample per Each One sample per Each One sample per Each One sample per Each	IS : 209, IS : 2016, IS :2062, IS : 2633, IS :12427,& GETCO Specification	Govt. Approved Lab	Approved by GETCO.	B-1
O	**PVC WATER STOPS**					

(i) (ii) (iii) (iv) (v) (vi) (vii)	Tensile strength Elongation Hardness Water absorption, percentage by mass Cold bend temperature at which sample does not crack Accelerated extraction test: (a) Tensile strength (b) Elongation Stability in effect of alkalis test : (a) weight increase at 7 days, % by mass (b) weight decrease by mass at 7 days, % by mass (c) Change in hardness at 7 days (d) Weight increase at 28 days (e) Weight decrease at 28 days **(f)** Dimension change	One sample per Each One sample per Each One sample per Each One sample per Each One sample per Each One sample per Each One sample per Each	IS : 15058, IS :8543 (Part4 / Sec 1), IS : 13360 (Part 5 / Sec 1), IS ; 9766 & GETCO Specification	Contractor should Produce manufacturer's test Certificate. i.e from approved Manufacturer.	Approved by GETCO.	B-3
P	**Bought out item (shown as annexure - II)** Check the bought out items are as per Technical specification / IS codes before use. Approval of all bought out items.	Check all the items	GETCO Specification	Joint inspection By GETCO. And Contractor	Approval by GETCO.	**A**
2	**WORKS**					
	GANTRY/EQUIPMENT FOUNDATION/CABLE TRENCH					
A	**BEFORE EXCAVATION**					
(i) (ii)	Checking of pegs location asPer line and alignment Checking of pit making as perDrawing& RL	100% on each Location 100% on each Location	IS: 4091,IS: 3764 &GETCO approved Drawing/ specification	Contractor	Approved by GETCO.	C
B	**EXCAVATION**					
(i) (ii) (iii)	Dimensional conformity Verticality/slopes &Squareness of each pit Verification of classification of	Each location Each location Each location	IS: 4091,IS: 3764 &GETCO approved Drawing/ Specification.	Contractor Contractor Joint inspection	Approval by GETCO. (1) Foundations will not be placed on filled up soil	B-3

	foundation wherever applicable.			By GETCO. And Contractor	(2) Minimum depth Of foundation will be 750 mm in Virgin soil.	
C	**ANTITERMITE TREAMENT**					
(i) (ii) (iii) (iv)	Check for material to be used Check for proportion Depth and c/c distance of holes Check for pouring of required quantity of liquid in holes	100% Random Random Random	IS : 6313 & GETCO Specification	Joint inspection By GETCO. And Contractor	Approval by GETCO.	B-3
D	**P.C.C. PADDING**	For all locations	IS:456,GETCO Approved foundation Drawing & specification	Joint inspection By GETCO. And Contractor	Approval by GETCO.	C
E	**SHUTTERING(Form work)**					
	Check for materials, breakage or damage Check for plumb, alignment Parallelism,squareness and equidistance from stubDimensional check. Check for level & height Check for rigidity of frame/tightness Cleaning and oiling Diagonal bracing if required as per drawings/site conditions. Checking of joints to avoid undue loss of cement slurry	**100%**	IS: 456,GETCO Specification/ Approved drawings.	Joint inspection By GETCO. And Contractor	Approved by GETCO.	C
F	**PLACEMENT OF REINFORCEMENT STEEL.**					
(i) (ii) (iii)	Check the steel bars for rust, cracks, surfaceflaws, laminate etc. (Visual check) Check as per the bar bendingSchedule before placement ofConcrete. Check cutting tolerance for bars as per check List/drawings. Check whether all bent bars and lap lengths are as per approved bar bending schedule.	**100%**	IS: 456,GETCO Specification/ approved drawings.	Joint inspection By GETCO. And Contractor	Approved by GETCO.	B-3

(iv)	Check whether all joints & crossing of bars are tied properly with right gauge & annealed wire as per specification.					
(v)	Check for proper cover distance spacing of bars, spacers, & chairs after the reinforcement cage has been put inside the formwork.					
(vi)	Check whether lapping of bars are tied properly with right gauge and annealed wire as per specification.					
G	**PILE FOUNDATION** (Additional Tests)					
(i)	Check of center line of pile group	Each pile group	IS:2911 &GETCO Approved pile Foundation Drawings/ Specification.	Joint inspection by GETCO and Contractor	Checklist to be prepared And signed jointly	B-3
(ii)	Check pile location	Each pile				
(iii)	Temporary casing tube & permanent line also check Thickness of liner material (if applicable)	Each pile				
(iv)	Bentonite slurry (if applicable)	Each pile	GETCO Approved pile foundation Drawings/specification			
(v)	Pile depth, level, size and alignment	Each pile				
(vi)	Chipping of pile head	Each pile				
(vii)	Pile load testing	As per GETCO GBOQ/Specifica-Tion IS: 2911				
(viii)	Anchor bolts if applicable					
(ix)	Level, centre to centre distance of bolts.	100% on each Location				
(x)	Visual check for galvanizing	100% on each Location				
H	**SETTING OF TEMPLATE**					
(i)	Identification	Each foundation	GETCO Approved specifications	Joint inspection by GETCO. and Contractor	Approval by GETCO	C
(ii)	Check for orientation of template to match with drawing	Each foundation				
(iii)	Check for line and level of template	Each foundation				
(iv)	Check for center line of foundation and template	Each foundation				

(v)	Check for diagonal dimensions	Each foundation				
(vi)	Check for diameter and distance of holes	Each foundation				
I	**PLACEMENT OF FOUNDATION BOLTS**					
(i)	Identification (Diameter and length)	Each foundation	GETCO Approved specifications	Joint inspection by GETCO and Contractor	Approval by GETCO	C
(ii)	Check the foundation bolts for rust, cracks, surface flaws, laminate etc. (Visual check)	Each foundation				
(iii)	Check for height of bolts above concrete level as per drawing	Each foundation				
(iv)	Check for bolt to bolt distance as per drawing	Each foundation				
(v)	Check for verticality of bolts	Each foundation				
(vi)	Check for Fixity of bolts	Each foundation				
J	**PLACEMENT OF WATER STOP**					
(i)	Check the water stops for blisters, pinholes, cracks, and embedded foreign matters (Visual Check)	Random	GETCO Approved specifications	Joint inspection by GETCO and Contractor	Approval by GETCO	B-3
(ii)	Check for width and thickness	Random				
(iii)	Line and level	100%				
(iv)	Fixity during concreting	100%				
K	**CONCRETING**					
a	Approval of mix design.	For each grade of Concrete.	IS: 456 &GETCO Approved specifications	Contractor	Approval by GETCO	B-3
b	Batching, mixing & placing of concrete and compacting	Random	IS: 456 &GETCO Approved drawings And specifications	Contractor	Approval by GETCO	B-3
	Placing concrete, and compacting	Random				
c	**Concrete testing**					
	Slump test	Random	IS:456,IS:516,IS:1199 And GETCO Specifications	Contractor	Results to be recorded and signed Jointly	B-3
	Check for quantities for cement, fine aggregate, coarse aggregate and water while batching	Random				
d	**Concrete cube testing**					

	Compressive Strength	Sample (Consisting of minimum 6 cubes-3 cubes for 7days and 3 cubes for 28 days test) 1-5 Cmt : 1 6-15 Cmt : 2 16-30 Cmt : 3 31-50 Cmt : 4 Above 50 Cmt : 4+1 additional for each additional 50 Cmt	Is:1199,IS:456, IS:516	Govt. Approved lab	To be witnessed for important structure (slab)& Approved by GETCO	B-3
L	**BACKFILLING**					
	Check for thickness of Layer & watering Visual check for correction/ramming Compaction test (Percentage ofMax dry density	100%	GETCO Specifications.	Govt. Approved lab	To be witnessed & Approved by GETCO	C
M	**BRICK-WORK**					
	Mortar mix/proportion Plumb & Alignment Joints	Random Random Random	IS:2250, GETCO Specification	Joint inspection by GETCO and Contractor	Approval by GETCO	C
N	**PLASTERING**					
	Plastering thickness and evenness Mortar mix proportion	Random Random	GETCO Specification GETCO Specification	Joint inspection by GETCO and Contractor	Approved by GETCO	**C**
O	**FLOORING**					
(i) (ii) (iii) (iv)	Thickness of flooring material (Kotah stone/Vitrified tiles/glazed tiles) Mortar mix proportion Line and level Joints	Random Random 100% 100%	GETCO Specification	Joint inspection by GETCO and Contractor	Approved by GETCO	**B-3**
P	**WATERPROOFING**					
(i) (ii) (iii) (iv) (v) (vi)	Check for material to be used Cleaning of terrace Proportion of mortar Level Joints Pond Test	100% 100% Random 100% 100% 100%	GETCO Specification,.	Joint inspection By GETCO. And Contractor	Approval by GETCO	**B-3**
Q	**CURING FOR CONCRETE, MASONRY,PLASTERING ETC.**	100% on all locations	IS 5613 &GETCO Specification,.	Contractor.	Approval by GETCO	**C**
R	**ALLUMINIUM DOORS/WINDOWS**					

(i) (ii) (iii) (iv) (v) (vi) (vii)	Check for size of different members Check for weight of different members Check for anodizing Check for joints of various members Check for thickness of glass Fixing (line, level, plumb) Gap between frame and wall	Random Random Random Random Random 100% 100%	IS : 733, IS: 1285, IS : 1868, & GETCO Specification	Joint inspection By GETCO. and Contractor and test report from Manufacturer	Approval by GETCO	B-2
S	FALSE CEILING					
(i) (ii) (iii) (iv) (v) (vi) (vii)	Type of false ceiling Thickness of false ceiling panel Check for size and weight of different members of false ceiling skeleton Fixing with wall Line and level Check for hangers Cutouts for lighting fixtures	Random Random Random Random Random Random Random	GETCO Specification	Joint inspection By GETCO. And Contractor	Approval by GETCO	B-2
T	GI PIPE FOR WATER SUPPLY					
(i) (ii) (iii) (iv) (v)	**Check for weight as per diameter of pipe** **Depth of excavation for pipe line** **Laying of pipe line as per layout given** **Fixing of pipe with clamps on walls** **Watertight ness of joints**	Random Random Random 100% 100%	IS : 1239 & GETCO Specification	Joint inspection By GETCO. And Contractor	Approval by GETCO	**B-3**
U	SITE SURFACING					
(i) (ii) (iii) (iv)	Check for layers of 200mm Check for watering Check for rolling Check for density (% Compaction)	100% 100% 100% 100%	GETCO Specification	Contractor and Govt. approved Laboratory	Approval by GETCO	**B-3**

V	ROAD WORK					
(i)	Visual check for material	One sample	IS383 & 2386 GETCO Specs. GETCO Specification	Contractor	Approval by GETCO	B-3
(ii)	Stacking of material	100%				
(iii)	Preparing the land for road	Random				
(iv)	Spreading of metal in required thickness	Random				
(v)	Camber	Random				
(vi)	Rolling	Random				
(vii)	Watering	Random				
W	YARD QUARRY DUST/METAL SPREADING					
(i)	Visual check of material	One sample	IS383 & 2386 GETCO Specs.	Contractor	Approval by GETCO	B-3
(ii)	Stacking of material	100%				
(iii)	Preparing the land upto required level	Random				
(iv)	Spreading of material of required thickness	Random				
(v)	Compaction	Random				
X	FALSE FLOORING					
(i)	Type of false flooring	Random	GETCO Specification	Joint inspection By GETCO. And Contractor	Approval by GETCO	B-2
(ii)	Thickness of false flooring panel	Random				
(iii)	Check for size and weight of different members of false flooring skeleton	Random				
(iv)	Fixing with floor	Random				
(v)	Line and level	Random				
(vi)	Check for studs	Random				
(vii)	Cutouts for panel to be supported on MS channel	Random				
Y	PERIPHERAL/ROAD SIDE DRAIN					
(i)	Alignment as per lay out	100% on each Location	As perapproved drawings	contractor	Approval by GETCO	**C**
(ii)	Invert level as per outlet points	100% on each Location	As per approved drawings	contractor	Approval by GETCO	**C**
(iii)	Concrete and masonry as per FQP		As per Approveddrawings	contractor	Approval by GETCO	**C**

: GENERAL GUIDELINES FOR IMPLEMENTATION:

1. Details of categories of check codes A,B& C including accepting and deviation dispositioning authorities are indicated at annexure-I

2. GETCO specification shall mean GETCO technical specification, approved drawings data sheets and Law provisions applicable for the specific contract.

3. Acceptance criteria and permissible limits shall be as per relevant Indian Standards and/ or prevalent code of practice / GETCO specifications.

4. It is clarified that the tests indicated at column 2 of this FQP i.e. against column "component operation & Description of test ", are only generally required to be conducted. However, GETCO reserves the right to carry out any additional tests at any stage if the situation so warrants.

5. SE (TR) of circle shall approve testing laboratory before accepting the test results from the lab.

6. SE (TR) of circle shall approve the sources for cement, coarse aggregate, fine aggregate & water before actual utilization.

7. All the testing & measuring equipment used by the contractor for testing are required to be calibrated. A Copy of valid calibration report shall be retained by GETCO based on the joint inspection.

8. Classification of foundations shall be approved by GETCO based on the joint inspection report & Soil investigation reports.

9. Zone-IV fine aggregate shall be used for nominal mix. Reinforced cement-concreting work.
   Zone-IV fine aggregate shall be avoided for design mix reinforced cement concreting work unless tests have been done to ascertain the suitability of proposed with the prior approval GETCO sit.

10. Bricks should be free from cracks, flaws and modules of free lime. They should have smooth rectangular faces with sharp corners and should be uniform in color.

11. Cement
    In case of cement is in the scope of the contractor, the same shall be procured from sources approved by GETCO site and got tested on sample basis for specified acceptance tests as specified in the FQP at a reputed third party lab approved by GETCO site.
    The samples of cement for site testing shall be taken within three week of the delivery and all the tests shall be commenced within one week of sampling. If the cement remains in store for a period of more than Six months. All the site tests are required to repeated before usage.
    The source and grade of cement shall be as per approved design mix.

12. Reinforcement steel & structural steel used in cable trenches & foundations
    In case supply of steel is in the scope of the contractor, the same shall be procured from the main producers i.e. SAIL, TISCO, IISCO or RashtriyaIspat Nigam or the rerollers approved by main producers.

    The results of testing of cement and reinforcement steel referred in 12.1 and 13.1 above shall be got approved from GETCO site before cement and reinforcement steel are put to use. However, in exceptional cases due to exigencies of work, GETCO site may authorize the contractor to use cement and reinforcement steel even before the test results are received. However, in all such cases, if the test results subsequently received are found to be not complying with the specified acceptance criteria, the contractor shall have to dismantle and recast all such foundations cast with such non-conforming materials at his own cost. Confirmation to this effect shall be obtained from the contractor by the project authorities beforehand in all such cases.

13. The contractor shall submit welding procedure specification (WPS) including the type of electrode used for approval of GETCO site before staring the welding work. The welder with proper certificate shall be deployed

14. Approval/acceptance of individual test results by GETCO in the course of execution of contract will neither relieve the contractor from his contractual obligations and responsibilities, nor does it limit the owner's right under the contract.

15. In case, requirement of special items like super sulphate cement, corrosive resistant reinforcement
Steel (CRS) etc. arise due to site conditions, the specific approval of GETCO may be obtained before using the same and all the tests as per relevant standards shall be carried out.

16. All the materials shall be stored by the contractor in a manner affording convenient access for identification and inspection at all the times. Storage of material shall be in accordance with IS: 4032 (latest edition).

ANNEXURE-A
GUJARAT ENERGY TRANSMISSION CORPORATION LIMITED

Accepting and deviation dispositioning authorities for different Categories of checks as envisaged in field quality plan

Category	type of Check	100%Checking/ witnessing by	counter check/ surveillance check by	Accepting Authority, if Test results Are within Permissible Limit	Deviation Dispositioning Authority
A	Critical	EE (civil) of circle With Contractor's Engineer	SE(TR) Plus EE(C)	SE(TR) Plus EE(C)	CE, Corporate Office
B-1	Major	D E (Quality Deptt)	E E (Quality Deptt)	EE (Quality Deptt)	CE (Quality Deptt)
B-2	Major	EE (civil) of circle With Contractor's Engineer	SE (Civil)	SE (Civil) plus EE (C)	CE, Corporate Office
B-3	Major	DE(C)	EE(C)	EE(C)	SE(TR) Plus EE(C)
C	Minor	JE(C)	DE(C)	DE(C)	EE(C) Plus DE(C)

ANNEXURE-B

BOUGHT OUT ITEMS

Check the following bought out items for their specifications / IS codes before use

1. Cement.
2. Murrum or yellow earth for filling in yard or plinth.
3. Bricks/Block.
4. Reinforcement.
5. Structural steel.
6. Foundation bolts.
7. Fine aggregate.
8. Coarse aggregate for all type of concrete, WBM road and metal spreading in yard.
9. PVC water pipe line with fixtures.
10. PVC drainage pipe line with fixture.
11. PVC rain water pipe with fixture.
12. PVC casing pipe for bore well.
13. 4 mm thick flat copper cable for submersible pump
14. Teak wood for frame and shutter.
15. Aluminum door, window and ventilator.
16. FRP door.
17. Steel cupboard shutter.
18. False ceiling material.
19. Glazed tiles.
20. Kotah stone and marble strips.
21. Vitrified tiles.
22. Granite or Marbo granite tiles.
23. Metallic hardener topping.
24. Paver concrete block.
25. Prestressed concrete cover for cable trench.
26. Oil bound distemper.
27. Acid/Alkali resistant paint.
28. Apex or equivalent exterior paint.
29. Epoxy paint for flooring in GIS room.
30. Rolling shutter.
31. Chain link fencing panel and angle.
32. Wash basin.
33. Orissa pan/European pan.
34. Glass mirror.
35. Marble year plate.
36. Towel rod for bath room.
37. Sliding gate.
38. RCC Hume pipe. (Pressure/Non pressure).
39. Submersible pump for bore well.
40. Substation Sign boards.
41. Acrylic name plates.
42. MS cover for cable trench in control room/GIS room.
43. Ear thing strips.
44. Grout materials for foundation/flooring.

(D) TECHNICAL SPECIFICATIONS:

(E1) General Conditions:

1. The contractors shall at their own expense make all necessary provisions for housing, water supply, and sanitary arrangements for their employees as well as for works and shall pay direct to the authorities concerned, all rates and taxes.
2. The contractor shall make their own arrangements for the necessary approach, road, for transport of their materials and be responsible for the compensation on account of damage to crop etc. & shall till completion of work.
3. All the royalty charges, Octroi and other duties & all taxes will be paid by the contractor and no extra be claimed on this account.
4. Godowns or sheds hired or constructed for storing of controlled materials and more particularly of cement shall be such as would prevent the materials from getting damaged in any way.
5. It will be absolutely incumbent on the contractors to have on the site of work only such of the materials as have been duly passed by the Engineer-in-charge. Materials that have been rejected must on no account be allowed to remain on the site, and in spite written order to do so, any such rejected material is on the site beyond a period of 48 hours' notice, the Engineer-in-charge shall have the right to remove it, at the risk and cost of the contractors and even to destroy it.
6. It must be distinctly understood that conditions of contract and of claims in respect of extra work, will not be allowed unless the works to which they relate is clearly without the spirit and meaning of the specifications or unless such works are ordered in writing by the Engineer-in-charge and claimed for in specified manner.
7. On completion of the work, the site shall be cleared by the contractor within the stipulated period, and ground brought to original state and they shall not be entitled for any extra claim on this account.
8. General Specifications of the relevant Indian standard specification shall also apply.
9. Damage to work clause:

The works whether fully constructed or not and all materials, machinery plant tools, temporary buildings and other things connected there shall be at the risk and in the sole charge of the contractor, until the works have been delivered, completed to the satisfaction of the Engineer-in – charge and certificate from him to the effect is obtained. Until such delivery, the contractor shall at their own cost, take all the precautions reasonably necessary, to keep all the aforesaid works, materials, machinery, plant tools. Temporary buildings and other things connected with the works, free from any loss or damage and in the event of the same or any part thereof being lost or damaged, shall forthwith within the possible speed, reinstate and made good such loss or damage at contractor's own cost.

10. Any components or part of the work shall not be given to any sub-contractor without approval of the competent authority of the Corporation. The whole responsibility of the execution of the work, as per the terms and conditions of the contract, will entirely rest of the main contractor. The main contractor shall always keep his responsible representative, preferably a technical hand, on work site with powers to sign M.R.s. and take necessary decision and implement the instructions issued in the interest of efficient execution of the works.
11. The Engineer-in-charge will fix the hours of work, and no work shall be executed beyond that period, during night time or in absence of the Engineer-in-charge of his authorized agent. The box measures shall be filled only in the presence of the engineer-in-charge or his authorized agent.
12. Contractor will be asked to present the sample of materials, and the approved samples will be preserved at the site of work, and no charge in the approved sample will be allowed, without the written permission of the Engineer-in-charge.
13. In any work is not executed according to the specifications, and the directions of the Engineer-in - charge, the same will be rejected, and the contractor has re execute the same without any financial implication to the Corporation.
14. Contractor will have to communicate the name of his authorized agent, who shall be present on the works, and shall be authorized to sign the material requisitions, receive instruction given verbally or on the order book, on behalf of the contractor.
15. The contractor will have to sign the conditions of contract, and execute the agreements, send the list of previous works executed, solvency certificate and pay up the security deposits, falling to that, the tender will be rejected and earnest money deposited will be forfeited. The value of the stamp paper and stamp duty charges shall be borne by the contractor.

16. Tenderer must return the form of tender, with the specifications and the schedule of quantities, and rates and other schedules only signed on each page. Any tender not bearing signature of the tenderer on all the documents accompanying the tender is liable to be rejected.
17. Before submitting his tender, unit rates, which shall be for the finished work complete, including charges involved in testing, maintenance for a period of 12 months, the tenderer shall closely examine the specifications and carefully study the drawings and all documents, which form a part of the contract, to be entered into by the accepted tenderer.
18. The Tenderer must visit the site of works and see for himself the site conditions regarding water, labour conditions rates approach road during all seasons and all other matters affecting the works before submitting the tender.
19. The submission of tender by a contractor implies that, he has read these instructions, the conditions of contract etc. and has made himself aware of the scope and specifications of the work to be done, and of conditions and rates at which stores will be issued to him, and local conditions and other factors bearing on the executions of the work. The Corporation will not therefore, after acceptance contractor's rate, pay any extra charge for lead or for any other reason. In case the contractor is found later on, to have misjudged the site conditions.
20. The tender document shall be written legibly and free from erasure, over writing or conversions of figures. Correction where unavoidable, shall be made by crossing out, initialing, dating and rewriting.
21. The Corporation or its officers, who accept tender, shall have the right of rejecting all or any of the tenders, and will not be found to accept the lowest offer not to assign any reasons whatever, for the rejection of any tender or all tenders.
22. The tender notice to tenderer shall from a part of the contract.
23. The entire work is to be completed, within the stipulated time limit from the date of issue of letter for commencement of the work by field office. The contractor will not be eligible for any extra for the idle period of works, or waiting period that may be required to suit other consideration, and no claims for compensations on account of such, will be considered. However in case of delay due to circumstances beyond the control of contractors, either in date of commencement or due to, waiting during construction, extension in time may be considered for completion of works, without any penalty to the Corporation.
24. The contractor shall keep full time qualified Civil Engineers at the site, who shall be fully authorized to receive and comply with such instructions, as given by the Executive engineer. The name of such Engineer with his qualifications and experience shall be intimated by the contractor.
The Executive Engineer shall have the right to demand the removal of any technical personnel, skilled or unskilled workmen, who in his opinion are considered to cause bad workmanship in the execution of works or to cause indiscipline.
25. The department reserves the right to make any change in the design and the plans of the works and the contractor shall be bound to carry out them at the rates tendered. No claim or compensation will be allowed on this account.
26. Bills shall be submitted by the contractor monthly on or before the date fixed by the Executive Engineer, for all works executed in the previous months.
27. Should this tender be accepted I /We hereby agree to abide by and fulfill all the terms and provisions of the "Tender & contract for works" as applicable, and in default thereof to forfeit and pay to the Corporation the sums of money due.
28. The contractor shall keep instruction book on site, for taking site instruction from time to time. This book shall be made available on site whenever asked for.
29. The contractor shall pay wage to the workers, as per minimum wages act as declared by the Government time to time.
30. The contractor shall follow all labour laws of Govt.
31. Contractor shall arrange for testing of material to be used in the work or finished product, if desired by the Executive Engineer. The provision shall be made in the unit rate quoted for this.
32. The full value of the "Earnest Money Deposit" paid herewith, shall be forfeited to the Corporation, if the contractor fails to deposit the full amount of specified security deposit, within stipulated time.

(E2) Use of Materials:

I. The contractor shall have to use the best quality of materials in the work, as per the specifications and relevant I.S. codes. In case Corporation desires to carry out any field test/laboratory test for any materials required for the work, the contractor shall arrange for the same at his own cost.

Further, for any finished works such as masonry, plastering, cube testing for all important concreting work etc., if any testing is required same shall be arranged by the contractor at his own cost. The contractor shall have to maintain the regular records for such testing and shall submit along with each R.A. bills.

II. No collection of materials shall be made before it is go t approved from the Engineer-in-charge.

III. Materials, if and when rejected by the Engineer-in-charge shall be immediately removed from site of work.

IV. All installations pertaining to water supply and fixtures thereof as well as drainage lines and sanitary fittings shall be deemed to be completed only after giving satisfactory tests by the contractor.

V. Approval to the samples of various materials given by the EIC shall not absolve the contractor from the responsibility of replacing defective material brought on site or materials used in the work found defective at a later date. The contractor shall have no claim to any payment or compensation whatsoever on account of any such material being rejected by E.I.C.

VI. Approval to any of the executed item for the work does not in any way relieve the contractor of his responsibility for the correctness, soundness and strength of the structure as per the drawing and specification.

VII."Contractor has to bring the Cement, Reinforcement steel, Structural steel and Testing Laboratories from approved brand list published on GETCO's website only".

Special condition for use of cement in work:

1). The rate in Schedule-B is inclusive of cement cost. Contractor has to purchase fresh 43-53 grade cement confirming to as per IS: 8112 and of approved brand by G. E. T.C.O.
2). Contractor has to construct pucca go-down at site of work so that cement bags can be properly preserved to avoid damage due to any kind of water.
3). Contractor has to bring sufficient of cement bags and at no time less than 200 (two hundred.) bags to maintain progress of work .The work should not suffer for want of cement.
4). Cement should give the required strength.
5).To bring sufficient and timely cement at site is full responsibility of contractor Nothing extra will be paid on account of any reason to maintain progress of work and to complete the work in schedule time.
6). Contractor has to submit material account for consumption of cement used with every bill. In case of not submitting the same, bill will not be passed. Party has to submit the copy of cement/purchase bill along with each RA Bill/Final Bill.
7).No negative variation will be allowed for consumption in cement then prescribed as per booklet of technical specification of Corporation/mix design and nothing will be paid extra for over consumption.
8).Contractor is fully responsible for safety of cement at site; nothing will be paid extra on account of safety.
9). If Corporation's authorized representative wants to check cement stock at site, contractor has to allow for the same at any time.
10). Contractor has to maintain day-to-day cement consumption / balance account at site.
11). As far as possible contractor has to maintain supply of cement of only approved brand and grade throughout the work.
12). Minimum cement consumption considered for cement concrete having grade of M-15/M-20/M-25/ M-30 is 300 Kgs/320-Kgs/370Kgs/396Kgs respectively. Contractor has to use minimum cement as above. Contractor should not use less than the prescribed quality of cement even in the case of mix design recommends lower quantity.
13). Contractor will be allowed to carry out work only after physical verification of cement brought at site.

(E3) CEMENT CONSUMPTION SCHEDULE:

The proportion of cement with coarse aggregate and the fine aggregate for cement concrete works & with sand in case of cement mortar will be in accordance with the under mentioned schedule showing the consumption of cement in bags. The Engineer-in-charge will adjust the proportion of cement irrespective of the mix mentioned in the description of the items, to ensure the consumption of the cement as per prescribed schedule. The tendered rate will be considered to have been based on the consumption of cement in this schedule and nothing extra will be paid on this account.

a. If the quantity of cement shown as utilized in the work, is observed to be less than permitted, as below then work will be accepted at reduce rate at the discretion of EIC, if deemed fit.

Table showing the cement required to be consumed in civil work items.

Sr. No. Item Description	Unit	Cement to be consumed in Bags
1. Masonry Works		
B.B. Masonry in C.M. 1:6.	1 CMT	1.4
U.C.R. Masonry in C.M. 1:6	1 CMT	1.7
U.C.R. with pointing in C.M. 1: 2	1 CMT	2.0
115 mm thick B. B. Partition in C.M. 1:4	1 SMT	0.2
–do- but with both sides plaster in C.M. 1:3;12 mm thick.	1 SMT	0.46
2. Cement Concrete works without finishing	1 SMT	0.46
C.C. 1:1 ½ : 3	1 CMT	8.12
C. C. 1 : 2 : 4	1 CMT	6.27
C.C. 1 : 3 : 6	1 CMT	4.42
C.C. 1 : 4 : 8	1 CMT	3.00
C.C. 1 : 5 : 10	1 CMT	2.47
3. Flooring		
25 mm thick I.P.S. in C.C. 1:2:4	1SMT	025
–do- 40 mm thick	1SMT	0.35
–do- 50 mm thick	1 SMT	0.45
–do- 75 mm thick	1SMT	0.60
–do- 100 mm thick	1SMT	0.75
Cement for fixing marble Mosaic Tiles	1SMT	0.13
–do- White glazed tiles with 12 mm thick coating cement plaster for leveling.	1SMT	0.25
Terrazzo floor finishing 20 mm thick with mm thick back coating cement plaster.	1SMT	0.25
Kotah stone flooring	1SMT	0.20
4. Bedding Below Flooring		
110 mm thick C. C. 1 : 4 : 8	1 SMT	0.35
– do – C. C. 1 : 5 : 10	1SMT	0.28
5. Plastering & Pointing		
12 mm thick C.P. in C.M. 1 : 3	1SMT	0.13
20 mm thick C.P. in C.M. 1:3	1SMT	0.19
20 mm thick sand faced in two layers.	1SMT	0.20
Cement Pointing 1 : 1	1SMT	0.07
6. Ground Sink 750 x 750 mm with dwarf wall 115 mm thick 40 mm IPS with 110mm. thick 1: 5: 10 bedding,	1NO	0.75
7. RCC water tank 1000 liter. (1.2x1.2x0.9M with free Corporation)	1NO	0.75
– do – size (2x2x0.9 M with free Corporation) (3000 Liters)	1NO	13.0
8. Kitchen Platform with 75 mm thick slab with 2 partitions with 12 mm smooth plaster.		
Size 2000 x 675 mm	1NO	1.50
Size 3000 x 675 mm	1NO	2.50
9. 75 mm quarter round vata in C.M. 1:2.	100RMT	4.0

100 mm – do –	100RMT		5.0
150 mm – do –	100RMT		7.0
10. Fixing W.C. Pan	1 No.	0.50	
11. Gully trap with chamber or 300x300mm.	1NO		0.75
Nahni trap	1NO		0.05
12 50mm thick RCC shelf in C.C. 1:1 ½ : 3	1 SMT		0.60
13 - do - precast cover 300 mm, wide 50 mm thick with smooth finishing on all sides.	1SMT		0.60
14 Manhole chambers with 230 mm, thick masonry in C.M. 1:6 and depth up to av. 1000 mm incl. cement plaster in C.M. 1:3 inside, top and outside up to 150 mm depth.			
Size 900 x 450 mm	1NO		2.5
Size 600 x 450 mm	1NO		2.0
Size 600 x 600 mm	1NO		2.25
Size 900 x 900 mm	1NO		3.70
Size 450 x 450 mm	1NO		1.25
Size 300 x 300 mm with 110 mm partition wall.	1NO		0.75
15 RCC hume pipe with filling joints in C.M. 1:1 and bed concrete 1:4:8 below joints 150 mm. thick			
750 mm Dia	1RMT		0.45
650 mm Dia	1RMT		0.35
450 mm Dia	1RMT		0.24
300 mm Dia	1RMT		0.16
225 mm Dia	1RMT		0.12
150 mm Dia	1RMT		0.08
16. Porcelain Pipes (S.W.G. Pipes)			
100 mm Dia	1RMT		0.06
150 mm Dia.	1RMT		0.08
17 150 mm Dia half round gutter in C.C. 1:3:6	1 RMT		0.15
18 2500 mm Dia x 300 mm deep of hollow Masonry in C.M. 1:6 with C.C. 1:4:8 bedding & RCC slab cover, for soak pit.	1NO		21.00

Note: (1) Consumption figures mentioned against each item is for theoretical consumption. This consumption may very + 5 %.

(2) In the case of plaster to masonry walls, an extra quantity of 1 Cft to mortar for every 100 sq. ft. of area may be allowed at the discretion of EIC.

General: Please refer latest edition of relevant Indian Standard Specification of Code i.e. B.I.S. General relevant I.S. of B.I.S. shall prevail for all items including materials, measurements etc. The Item wise detailed specifications are intended for full description of items covered by Schedule "B". The specifications are not however intended to cover every detail and the works shall be executed according to the spirit of the specifications below and the best prevailing P.W.D. practice. The clarification to any clause in detailed specifications shall be sought from the latest edition of relevant I.S. specification and codes. Where these specifications are at variance with the specification laid down in the I.S. Books stated above, the former will be applicable. As regarded matters not covered by any of the above specification, the decision of the Executive Engineer-in-charge shall be treated as final and shall be binding upon the contractor. The contractor is expected to get clarified any doubt about specification, etc. before tendering by discussing with Executive Engineer.

(E4) TECHNICAL SPECIFICATIONS OF VARIOUS ITEMS:

Tolerance:

Single pile 50mm in alignment group of piles – 75mm

Concrete:

* Grade M-30 or M-25 as specified. Aggregate size – 20mm down.

* Designed water cement ratio shall be maintained.

* Minimum cement content shall not be less than 370 kg. Per cu.mt. for M-25 & 396 kg. For M-30 cement concrete and slump of concrete should not be less than 150mm.

Concrete Placing:

The concreting shall be done by tremie with minimum diameter 200mm of pipe – when concreting is carried out under water, casing/liner should be installed to the full depth of the bore hole or 2m into non-collapsible stratum, so that fragments of ground cannot drop from the sides of the hole into concrete, as it is placed. This shall be done strictly as per the directive of GETCO Engineer-in-Charge.

The hopper and tremie shall be a closed system embedded in the placed concrete by 1.50m concrete so that water cannot pass. The pile should be concreted wholly by tremie only and uninterrupted.

The quantity of concrete used shall be compared with calculated quantity at various depths, as per drawing to have check against fall of debris, or side caving.

Reinforcement:

Reinforcement cage shall be prepared as per design & drawing, with cover blocks and shall be placed centrally, so that sides of pile bore are not disturbed.

The length of cage shall be determined as per the actual depth of bore including socketing length of pile into rock if any.

Sufficient care shall be taken to avoid any lifting or tilting of reinforcement cage, at the time of concreting.

Boring operation:

Boring operation shall be done by rotary or percussion type drilling rigs using direct mud/bentonite circulation or reverse circulation methods to bring the cuttings out.

Pile bore log shall be maintained and shall be compared with soil investigation report and design & drawing.

The size of cutting tool should not be less than the pile diameter by more than 75mm.

Proper cleaning of pile bore after lowering the reinforcement and before concreting shall be done. On completion of bore as per required depth as per design, the bottom of the bore shall be flushed to remove debris till clear water comes out.

When liner is used and the pile bore is filled with water or drilling mud, the bottom part may be concreted using termite so that the liner is effectively sealed against ingress of ground water.

For execution of piling work relevant latest IS Code of materials and working method shall be followed.

A. CONCRETE
I PROPORTION:
The Proportion of fine, coarse aggregates and cement shall be as specified in item of tender where nominal mix is to be used. Proportion of martial shall be carried out such that the proportion of materials is readily verifiable. Material must be measured in boxes of steel or wooden, approved by EIC. Box to be used for

which aggregate, its size etc. shall be clearly marked on box. No ramming of boxes will be permitted. Slight variation in proportion for technical requirement will have to be carried out without any extra cost. Boxes shall be filled in presence of authorized agent of Corporation and work shall be carried out during working hours fixed by Corporation or approved by Engineer-in-charge.

Where strength of concrete is specified instead of nominal mix, contractor will have design mix for the specified strength as provided in IS code for design mix. Proportion shall be used on weight of ingredients of concrete using specified size of the coarse aggregate in item. If ordered, contractor will have to get economical design from Gujarat Engineering Research Institute or other approved institution.

Where permitted, in case of small works, proportional of weight basis can be converted to volumetric for use at site with maintaining same quality of aggregates as used in designing the mix. Design mix shall be got approved and minimum cement if specified shall have to be used. Any charge in source of aggregate will require redesigning of the concrete mix. The engineer shall have right to inspect the source of materials used and contractor will have to arrange for testing of material, if ordered, without any extra cost.

II MATERIALS:

Coarse aggregate & fine aggregate i.e. black Trap metal, Grit, sand etc. shall confirm to IS 353 for aggregate form natural source. Aggregates shall be strong, hard, durable, free from foreign materials and adherence. If found necessary, contractor shall have to arrange testing of aggregate according to IS 2386 & IS 576.

Coarse aggregate shall be of specified size in the item viz 40 mm, 20 mm, 10 mm etc. Where gradation is to be done in mix design, it shall be properly graded. Coarse aggregates shall be free from mica, shale etc. The pieces shall be angular in shape having granular or crystalline surface, triangular, flaky & laminated should not be used. If ordered by Engineer-in-charge, aggregates shall have to be screened or washed. Samples of coarse aggregates to be used shall be got approved and source of approved quality material shall not be changed without prior approval.

Sand shall be clean river sand of quality approved as per IS confirming to gradation zones. Sand shall have fineness modulus of not less than 2.2 or more than 3.2.

When sufficient quantity of aggregates are to be collected. they shall be stacked separately in piles to avoid inter mixing. Mixing or earth, organic materials and other foreign materials shall be avoided. Rakers shall be used for lifting of coarse aggregates. Coarse aggregate having specific gravity of less than 2.6 shall not be used.

Cement shall be ordinary Portland cement unless otherwise specifically specified. One bag of cement is considered 50 kg. of cement. If cement is to be procured by contractor from outside, certified report that cement confirms to the provision of I.S. shall be furnished if demanded. If necessary, testing will have to be carried out, in approved laboratory without any extra cost. For compressive strength and initial setting time test as per I.S.456.

Water to be used for mixing and curing shall be potable water free injurious and deleterious materials confirming to IS 3025, proper storing facility at site shall be provided by contractor and see that water do not get contaminated – The suitability of water for making concrete shall be ascertained. Water shall confirm to the test as given in I.S.3025.

(III) MIXING

Ingredients i.e. cement, sand and coarse aggregates shall be measured by weigh batcher or volumetric boxes as specified or approved. Boxes for each component shall be prepared for such quantity that will be required for one bag of cement.

All ingredients shall be mixed in mechanical mixer. Ingredients shall be first mixed dry for 1 minute and than required quantity of water is added as per design and mixed for minimum 1 ½ minutes till concrete is uniform. Entire concrete in the mixing drum shall be discharged in pre operation before raw materials for second batch is feed into the drum.

Concrete which can be laid before initial setting time of cement shall be prepared. Party set or tempered concrete shall not be used. Mixer machine, weigh batcher etc. shall be cleared after completion of work. Mechanical mixture shall comply to I.S.1791.

For checking consistency and workability of concrete, slump test shall be carried out as per IS 1199 if desired by Engineer-in-charge.

(IV) LAYING

Before laying of concrete, shuttering and reinforcement shall be got checked. Where inserts are to be provided, they shall be fixed properly at places shown. Concrete shall be laid on cleaned surface. Concrete shall be laid such that ingredients do not get separated and on segregation of concrete is caused. Concrete shall be consolidated properly with vibrators or other approved method according to the requirement of jobs. Joints in concrete shall be left as shown or as directed by Engineer-in-charge. Where concrete is to be place from height, necessary chute shall be provided.

(V) CURING

Concrete work shall be cured for minimum period of 15 days. Horizontal surface shall be cured by ponding and vertical surface shall be kept wet by tying gunny cloth or gunny bags and keeping them wet by spraying or sprinkling water. Where structure is at higher-level contractor shall arrange for pumping arrangement for water. Watertight sump may be prepared on site or storing of water for curing and other uses.

Curing is important for gaining strength of cement structure. Hence full proof arrangement is required to be made. If curing is found sufficient, the same shall be arranged by department as risk and cost of contractor and charges as per rules shall be recovered from contractor's bills.

(IV) FINISHING

Concrete work where specified in item as exposed surface shall be plastered 12mm thick in CM 1:3 as per specifications of plastering item. Any finishing required to make surface in level of flush to adjoining surface shall be made by contractor with mortar specified portion of concrete.

Cement required to plastering of finishing shall be drawn separately. In plastering of slab bottom, Chhajja etc. wherever patta, groove, bend etc. are shown same shall be executed in this item without any extra cost. Where slopes are to be given for drainage and are not provided properly will have to be done without any extra cost. Edges of beam, pillars, etc. where chamfering is shown or instructed shall be done without extra cost.

If concrete surface is found honey combed and same is rejected by Executive Engineer, it shall have to be dismantled and recast by contractor without any extra cost at his risk and cost.

(**VII**) **SHUTTERING:**

The form work shall be rigid, sufficiently strong and well anchored to bear the load which it has to take without any distortion. It shall be backed sufficient so as not to budge of twist. Form work shall be of steel plates or plywood. Where exposed surface is desired, plywood shuttering will have to be provided. All surface coming in contact with concrete shall be applied with shuttering oil after cleaning properly. Props supporting from work shall rest on pucca platform. Adjustment of height shall be done with wooden wedges. Spacing of props shall be as instructed by Engineer-in - charge of work.

Form work shall be got checked form the Executive Engineer or his authorized agent and on clearance only, further work should be done. Necessary opening, in form work, for providing hooks, kada or other inserts will have to be made by contractor, as instructed, without any extra cost. Removal of from work shall be carried out slowly and at the specified period as under. In case it is ordered to contractor to keep for more period, considering quality of cement or other factors, same will have to be done by contractor. Minimum period of de-shuttering shall be as under.

1. Vertical surface 24 hours.
2. Slab up to 4.5M span 8 days

More than 4.5M span 14 days

3. Beam soffits (bottom) 20 days

Removal of shuttering shall be done only on getting clearance from Ex. Engr. in change of work.

Various IS. Specifications for scaffolding materials and code of practice shall be followed.

(VIII) MEASUREMENT &PAYMENTS:

Unless otherwise specified separately, item of concrete work shall be inclusive of shuttering work required for the same with scaffolding, ladders etc., No separate payment should be made for keeping holes, pockets, keeping inserts in position etc.
Payment of concrete work shall be made on Cu. Mt. basis. No deduction will be made for reinforcements, opening of less than 1/20 Sq. Mt. in area where measurement is in sq.m. and 1/150 cu.m. Where concrete is to be measured in CU. M.
Rate quoted for the item shall be inclusive of all materials, ingredients, labour, mixer & other machinery, scaffolding, laying in position and fixing of all inserts curing other requirements for the complete execution of item.

B. WATER SUPPLY

G.I. piping

G.I. pipe be used for water supply shall be of class 'c' confirming to I.S. Specifications. It shall be fixed with suitable clamps, for concealing with necessary groove in wall and finishing with C.M. When pipe is to be laid underground necessary excavation shall be done to level required. Pipe shall be given 3 coats of coal tar. For joining pipes specials of approved quality (extra thick) shall be used. If item provide painting of pipe same shall be painted with approved brand quality and tint enamel paint. All specials shall be provided as instructed.
Skilled plumber shall be employed on job. Pipes shall be laid as per detailed drawings or as directed on site. Generally shortest route shall be followed. At connection of pipe with special, joint shall be made water tight with hemp rope and zinc white or Teflon tape.
On completion of laying of pope and before sealing of concealed pipe and underground pipe, leak proof test shall be given.
All the piping work shall be measured in running meter and rate quoted shall be inclusive of all special required and all operations required for cutting, threading, joining, excavation, making groove in wall, sealing grout, backfilling, providing clamps with screws, painting etc. complete.

C. WOOD WORK GENERAL FOR DOORS WINDOWS, CUP BOARD etc.

The timber shall be of best quality Bulsar teak or equivalent teak approved by Executive Engineer. Decision of Executive Engineer in this connection will be final. If desired by Executive Engineer, contractor shall have to arrange testing of wood samples selected by department at random, in the laboratory as instructed by department. Sample of wood approved shall be preserved and contractor shall procure wood of the approved quality only. The source of wood shall be informed to the Engineer-in-charge.
The timber to be used for wood work shall be well seasoned, closed grains, uniform texture, free from knots, rots, soft, cracks, mend, spongy spots etc. The size of frame and all members shall be final size after planning and finishing. Undersized wooden members shall not be accepted. Wood of inferior quality, undersize shall be liable to rejection.
When frames or other members are ready they shall be got checked from Engineer-in-charge and got approved for quality and workmanship. Primer coat of paint shall be applied only after clearance by Engineer-in-charge. If the wooden members are found warped, shrunk or with bad workmanship within guarantee period, the same shall have to be replaced by contractor without any extra cost and to the satisfaction of engineer-in-charge.
Before fixing, the frame of door it shall be provided with six nos. M.S. flat 37mm x 6mm and 300 mm long hold fasts fixed to the frame, with screws as directed. Hold fast shall be with split end and bent at right angle to hold fast. Holes shall be provided at other end of hold fast for fixing of screws. Sample of holdfast shall be got approved from Engineer-in-charge. Windows and cupboard shall be provided with 4 Nos. or 2 Nos. of hold fast according to the size of frame and as instructed by Engineer-in-charge in addition to horns projecting minimum 75 mm on both sides of top & bottom members. The side of frame to be embedded in the wall or in touch with wall or floor, shall be applied uniform thick coat of coal tar.
The frame shall be rebated on one side (or both sides) 12 mm deep and of full thickness of shutter and to have a return bead on the other to be chamfered or rounded as directed by Engineer-in-charge. Wherever M.S. Bars of 16 mm diameter are specified in frame as grill in windows or ventilator, they shall be provided at 100 m c/c and shall be locked in frame for minimum 40mm deep. if M.S. flat is to be provided the flat of size 50 x 10 mm, 1 or 2 Nos. as specified, they shall be provided.

Shutters

The thickness of shutter and members of shutter frame shall be as per details given in drawing or supplied at site. Size specified shall be after planning & finishing without painting. Where single plank is specified single plank shall be used. The joint shall be tongue and groove joint. Shutter shall be single or double

shutter as per drawing and details given or as directed at site. For paneled doors the panel to be raised feather tongued into style and rails with beaded edges on both sides. Thickness of styles & rails shall be 37 mm and that of panel shall be 30 mm.
The arrangement of panels shall be as directed by the Engineer-in-charge and his decision will be final. The shutter styles, top, bottom, lock and frieze rods to be molded on both sides. The sample of shutter shall be got approved before taking work on full scale. Size of bottom, top & lock rail and ledges shall be as instructed by Engineer-in-charge.

Joints:

All jointing shall be brought on all faces and finished off by hand with sand paper with slightly rounded edges.
The joints shall be pinned with hard wood pins and put together with fevicol. Joining shall be by means of mortise and tennon or dovetailed joints as approved. Any joinery work, which shall split, fracture, shrink or shows flap or other defects shall be removed and replaced with sound material at the contractor's expenses.

Fixtures and fastening:

Oxidized iron, brass or aluminum fixtures as specified in item shall be provided in best workmanship, maintain level and line with approved quality and size screws. Screw shall be never hammered but driven with screwdriver. The fixture to be used shall be got approved first and approved samples of all fixtures shall be kept on site easily available for inspection.

1. For main door.

1. 300 mm long 16 mm dia aldrop 1 No.
2. 300 mm long flat latch. 1 No.
3. 100 mm long but hinges or 150 mm
long or suitable parliamentary hinges. 3 Pairs.
4. 150 mm long tower bolts. 2 Nos.
5. 100 mm long handles (150 mm long). 2 Nos.
6. Door catchers 2 Nos.
7. Magic eye. 1 Nos.

2. Internal door.

1. 250 mm long 16 mm dia aldrop 1 No.
2. 250 mm long flat latch. 1 No.
3. 100 mm butt or 150 mm hinges or suitable
Parliamentary hinges. 3 Pairs.
4. 100 mm long tower bolts. 2 Nos.
5. 100 mm long handles 150 mm long. 2 Nos.
6. Door catchers 2 Nos.

For bath & door 16 mm dia 250 mm long aldrop and one handle on both sides shall be provided.

3. Windows

1. 75 mm long butt hinges or parliamentary hinges 2 to 3 pair as per size.
2. 100 mm tower bolts 4 Nos.
3. 100 mm handles. 2 Nos.
4. 150 mm hook eye or stopper of approved quality. 2 Nos.

4. Ventilator.

1. 75 mm butt hinges. 1 Pair
2. 100 mm tower bolts. 1 Nos.
3. 150 mm long hook eye. 2 Nos.

5. Cup Board

1. 75 mm long butt hinges 2 Pairs.
2. 100 mm handles 2 Nos.
3. 100 mm tower bolt. 2 Nos.
4. Pivot. 2 Nos.
5. Ball catcher. 1 No.

The Nos. of fixtures shown above is for general arrangement but in case some change is felt necessary on site it shall be made by Executive Engineer on site and shall be binding to the contractor.

Glazing:

For all glazing of doors, windows, ventilators and cup Boards all glasses shall be of best quality free from bubbles, smoke wanes, air hole, specks and other defect. Sheet glass, ground for clear as approved and instructed shall be of 3 mm thickness. The glasses shall be fixed with wire nails and putty of best quality or

wooden bead of required size to flush with style or sash bar etc. The putty and the wooden battens should be finished with 3 coats of oil paints matching with other paint of doors, windows and ventilators. At the time of handing over the glazing work shall be intact. Any damage shall have to be replaced by the contractor without any extra cost.

Erection:

All doors, windows, ventilators, cupboards shall be erected in line, level and in one plane to the elevation shown in the drawing or directed by Engineer in charge at site.

Painting:

All doors, windows, ventilators, cupboard shall be given 3 coats of approved quality, brand and shade of oil paint. Each coat of paint shall be allowed to dry thoroughly before next coat is applied. The work shall not show any brush marks, ridges or drops of paint and no puddles in the corner of panels or molding etc., shall be left.

Measurement:

For payment purpose of doors, windows, ventilators and cupboard, measurement will be paid outside to outside of the frame in square meter basis.

D. GRILL/FABRICATION/RAILING

General

All workmanship and finish shall be of first class quality, in all respects and shall confirm to the best accepted standards of practice. Finish surface should not have any defect. The greatest accuracy shall be observed to see that all parts properly fit with each other on erection.

Before cutting & fabrication work is taken up, it is necessary, to see that if any twisting, bending etc. is there, the same is removed and made straight or in plane. The process to be adopted shall be such that original material is not injured.

Members shall be fabricated on site or in workshop, as approved, by Engineer in charge. Allowance for camber shall be made in case of truss etc. similarly in tension member and compression members. IS standards shall be followed. Based on design and/or detailed drawings, cutting schedule with no, of members shall be prepared and got approved from competent authority. Shearing machine or gas cutting may be adopted as approved.

All holes to be drilled shall be marked on members and drilled after proper checking. If necessary, a template shall be made for this. All holes shall be perpendicular to the face of the member and 1/6" larger than the nominal size of rivet or bolt. All holes shall be so drilled and reamed that more than 85% of continuous holes in any group in same plane shall not show any offset greater than 1/32" between adjacent thickness of metal. Burns, resulting from reaming or drilling, shall be removed with a tool making 1/16" bored.

All welding shall be done with electric arc method. Welding electrodes shall be heavily coated type designed for all position. The size, type and manufacturer of electrodes shall be subject to approval of Engineer. Electrodes and welding work shall be as per I. S. standards. All the cutting and needed surface shall be properly grinded with electric grinder. Fabricated members shall be joined either by welding or by rivets or nut & bolt arrangement as specified or shown on drawing or instructed. One assembled shall be got approved for alignment, riveting, welding etc. For bolted joints necessary washers shall be provided as shown in the drawing or as instructed on site.

Fabricated structure shall be given one shop coat of red oxide. Erection of the structure shall be done by approved method. Care shall be taken during erection so that no accident occurs. All the workers shall be provided with safety belts, helmets etc, during working.

Care shall be taken to see that no damage is done to the members during transportation of fabricated/assembled structure. Contractor shall provide necessary derricks, gantry, scaffolding and staging, inflammable etc. for erection work, No. gas cutting shall be allowed for the widening of holes when it is not matching. It shall be drilled.

After erection of structure one more coat of red oxide and 2 coats of approved oil painting should be provided to the structure. Paint to be applied shall be got approved for brand, quality, tint etc.

If desired test shall have to be carried out for welded joints. IS 816 shall be followed for general construction in mild steel. Bolts shall be confirm to IS 1363 & IS 1364. Electrodes shall confirm to IS 814.

(E5)GENERALTECHNICALSPECIFICATIONSFORBUILDING WORKS:

GENERAL:

1. In the specifications " as directed "/"approved" shall be taken to mean " as directed "/"approved by the Engineer-in-Charge.
2. Wherever a reference to any Indian Standard appears in the specifications, it shall be taken to mean as a reference to the latest edition of the same in force on the date of agreement.
3. In " Mode of Measurement" in the specifications wherever a dispute arises in the absence of specific mention of a particular point of aspect, the provisions on these particular points, or aspects in the relevant Indian Standards shall be referred to.
4. . All measurements and computations, unless otherwise specified, shall be carried out nearest to the following limits :

(i) Length, width and depth (height) 0.01 meter
(ii) Areas 0.01 Sq.Mt.
(iii) Cubic Contents 0.01 Cu.Mt.

In recording dimensions of work, the sequence of length, width and height (depth) or thickness shall be followed.

5. "The distance which constitutes lead shall be determined along the shortest practical route and note necessarily the route actually taken. The decision of the Engineer-in-charge in this regard shall be taken as final.
6. Where no lead is specific, it shall mean “all leads ".
7. Lift shall be measured from plinth level.
8. Up to " floor two level" means actual height of floor (Maxi. 4 .M) up to 3 Mt. above plinth level.
9. Definite particulars covered in the items of work, though not mentioned or elucidated in it specifications shall be deemed to be included therein.
10. Reference to specifications of materials as made in the detailed specification of the items of works is in the form of a designation containing the number of the specification of the material and prefix "M" e.g. 'M-5'.
11. 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 or materials used in the work found defective at a later date. The contractor shall have no claim to any payment or compensation whatsoever on account of any such materials being rejected by the Engineer-in-charge.
12. The contract rate of the item of work shall be for the work completed in all aspects.
13. No collection of materials shall be made before it is got approved from the Engineer-in-charge.
14. Collection of approved materials shall be done at site of work in a systematic manner. Materials shall be stored in such a manner as to prevent damage, deterioration or intrusion of foreign matter and to ensure the preservation of their quality and fitness for the work.
15. Materials, if and when rejected by the Engineer-in-charge, shall be immediately removed from the site of work. .
16. No materials shall be stored prior to, during and after execution of a structure in such a way as to cause or lead to damage or overloading of the various components of the structure.
17. All works shall be carried-out in a workmanlike manner as per the best techniques for the particular item.
18. All tools, templates, machinery and equipment for correct execution of the work as well as for checking lines, levels, alignment of the works during execution shall kept in sufficient numbers and in good working condition on the site of the work.
19. The mode, procedure and manner of execution shall be such that it does not cause damage or over-loading of the various components of the structure during execution or after completion of the structure.
20. Special modes of construction not adopted in general Engineering practice if proposed to be adopted by the Contractor, shall be considered only if the contractor provides satisfactory evidence that such special mode of construction is safe, sound and helps in speedy construction and completion of work to the required strength and quality. Acceptance of the same by the Engineer-in-Charge shall not, however absolve the contractor of the responsibility of any adverse effects and consequences of adopting the same in the course of execution of completion of the work, 21. All installations pertaining to water supply and fixtures there of as well as drainage lines and sanitary fittings shall be deemed to be completed only after giving satisfactory tests by the contractor
22. The contractor shall be responsible for observing the rules and regulations imposed under the "Minor Minerals Act", and such other laws and rules prescribed by Government form to time.

23. All necessary safety measures and precautions (including those laid down in the various relevant Indian Standards) shall be taken to ensure to ensure the safety of men materials and machinery on the works as also of the work itself.
* 24. The testing charges of all materials shall be borne by the Contractor
25. Approval to any of the executed items for the work does not in any relieve the contractor of his responsibility for the correctness, soundness and strength of the structure as per the drawings and specifications

(E6) SPECIFICATIONS OF MATERIALS:

M-1. Water

1.1 Water shall not be salty brackish and shall be clean, reasonably clear and free objectionable quantities of silt and traces of oil bad 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 R.C.C. Container for transport, storage and handling of water shall be clean. Water shall conform to the standard specified in I.S.456-1978.

1.2 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 time of setting and mortar strength as specified in I.S. 269-1976 Any indication of unsoundness, charge in time of setting by 30 minutes or more or decrease of more than 10 per cent 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.

1.3 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 surfaces

1.4 Hard and bitter water shall not be used for curing.

1.5 Potable water will generally found suitable for curing mortar or concrete.

M-2 Lime

2.1 Lime shall be hydraulic lime as per I.S. 712-1973 Necessary tests shall be carried out as per IS .6932 (Parts I to X) 1973

2.2 The following field tests for Times are to be carried out:

(1) 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 limestone.

(2) Acid tests for determining the carbonate content in lime Excessive amount of impurities and rough determination of class of lime.

2.3 Storage shall comply with I.S. 712-1973. The slaked lime, if stored, shall be kept in a weatherproof and damp-proof shed with impervious floor and sides to protect it against rain, moisture, weather and extraneous materials mixing with it: All lime that has been damaged in any way shall be rejected and all rejected materials shall be removed from site of work.

2.4 Field testing shall be done according to I.S. 1624-1974 to show the acceptability of materials.

M-3 Cement

3.1 Cement shall be ordinary Portland slag cement as per I.S.269-1976 or Portland slag cement as per I.S. 455-1976

M-4 White Cement

4.1 The white cement shall conform to I.S 8042-E-19.78.,

M-5 Coloured Cement

5.1 Coloured cement shall be with white of grey Portland cement as specified in the item of the work.

5.2 The pigments used for coloured 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 colour and shade. The pigments shall have such properties as to provide for durability under exposure to sunlight and weather.

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

M-6 Sand

6.1 Sand shall be natural sand, 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 contain more than 8 percent of silt as determined by field test. If necessary the sand shall be washed to make it clean.

6.2. CourseSand: The fineness modulus 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 Designation	Sieve Passing sieve	Percentage by weight Designation	I.S. Sieve percentage weight passing sieve
4.75mm	100	600 Micron	30-100
2.36mm	90 to 100	300 Micron	5-70
1.18mm	70-100	150 Micron	0-50

6.3. Fine Sand :

The fineness modulus shall not exceed 1.0. The sieve analysis of fine sand shall be as under :

I.S Designation	Sieve Passing sieve	Percentage by weight Designation	I.S. Sieve percentage by weight passing sieve
4.75mm	100	600 Micron	40-85
2.36mm	100	300 Micron	5-50
1.18mm	75-100	150 Micron	0-10

M-7 Stone Dust

7.1. 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

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

7.3. 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 dust containing more than 8% silt shall be washed so as to bring the content within the allowable limit. The fineness nodules of stone dust shall not be less than 1, 80.

M-8. Stone Grit

8.1. 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 flakey elongated pieces shall be avoided. It shall generally comply whit the provisions of I.S. 383-1970. 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 with cement.

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

I.S Designation	Sieve Passing sieve	Percentage by weight Designation	I.S. Sieve percentage by weight passing sieve
1250mm	100 %	4.75mm	0-20 %
10.00mm	85-100 %	2.36mm	0-25%

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

8.4 The necessary tests for grit shall be carried out as per the requirements of I.S.2386- (parts-l of VIII) 1963, as per instructions of the Engineer-in-Charge. The necessity of test will be decided by the . Engineer-in-Charge.

M-10. Lime Mortar

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

10.2. Proportion of Mix:

10.2.1. Motor 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.

10.3 Preparation of mortar:

10.3.1. Lime mortar shall be prepared by wet process as per I.S.1625-1971.Power driven mill shall e 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 sufficient water. Water shall be added as required during grinding (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.

10.4. Storage:

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

10.5 Use:

10.5.1. 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

11.1 Water shall conform to specification M-1 Cement: Cement shall conform to specifications M-3 Sand: Sand shall conform to M-6

11:2 Proportion of Mix

11.2.1. 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 0.0342 Cu.m. The mortar may be hand mixed of machine mixed as directed.

11.3. Proportion of Mortar:

11.3.1. In hand mixed mortar, cement and sand in the specified proportions 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 colour 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 from a stiff plastic mass of uniform colour 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 be used within 30 minutes.

M-12 Stone Coarse Aggregate For Nominal Mix Concrete

12.1 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.

12.2 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 stone as approved. Aggregate shall Have no deleterious reaction with cement. The size of the coarse aggregate for plain cement 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 or 6 mm. less than the cover whichever is smaller

TABLE

IS. Sieve	Percentage passing for single			IS. Sieve	Percentage passing for single		
Designation	Sized aggregates of Nominal size			Designation	Sized aggregates of Nominal size		
	40mm	20mm	16mm		40mm	20mm	16mm
80mm	-			12.5mm	0.5		0.20
63mm	100			10 mm		0.5	0.5
40mm	85-100	100		4.75mm			
20mm	0.2	85-100	100	2.35 mm			
16mm		85-100					

Note: This percentage may be varied somewhat by the Engineer-in-Charge when considered necessary for obtaining better density and strength of concrete.

12.3. The grading test shall be taken in the beginning and at the change of source of materials. The necessary tests. Indicated in IS. 383-1970 and 456-1978 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 mixing of different aggregates. If she aggregates are covered with dust, they shall be washed with water to make them clean.

M-13 Black Trap or Equivalent Hard Stone Coarse

13.1. 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,

13.2. 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 with cement.

13.3. The necessary tests indicated in IS. 383-1970 and IS.456-1978 shall have to be 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-15 Brick

15.1 The brick shall be shall be machine moulded and made from suitable fly ash, cement, lime, gypsum, etc. They shall be free from cracks and nodules of free lime. They shall have smooth rectangular faces with sharp corners and shall be of uniform colour. The bricks shall be moulded with the frog of 100mm x 40 mm and 10mm to 20mm deep on one of its flat sides. The bricks shall not break when thrown on the ground from a height of 600mm.

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

15.3 The size of the conventional bricks shall be 225 x 110 x 75mm.

15.4. Only bricks of one standard size shall be used on one work. The following tolerance shall be permitted in the conventional size adopted in a particular work. Length + 3.0mm, Width + 1.50mm, Height +1.50mm.

15.5 The crushing strength of the brick shall not be less than 35.0 Kg / Sq cm. The average water absorption shall not be less than 20 per cent by weight. Necessary test for crushing strength and water absorption shall be carried out as per IS 3495 : (Part I to Part IV) 1976.

M-16 Stone

16.1 The stone shall be of the specified variety such as Granite/Trap Stone/-Quartzite Or any other type of good hard stones. The stones shall be only from the approved quarry and shall be hard sound, durable and free from defects like cavities, cracks, sand holes, flaws injurious veins, patches of loose or soft materials etc., and weathered portions and other structural defects or imperfections tending to affect their soundness and strength. The stone with round surface shall not be used The percentage of water absorption shall not be more than 5% of day weight. When tested in accordance with I.S. 1124-1974.Theminimumcrushingstregth of stone shall be 200 Kg/Sq. Cm. unless otherwise, specified 16.2 The samples of the stone to be used shall be got approved before the work is started 16.3 The Khanki facing stone shall be dressed by chisel as specified in the item for khaki 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

17.1 Laterite stone shall be obtained from the approved quarry. It shall be compacted in texture, sound, durable and free from soft patch. It shall have minimum crushing strength of 100Kg/Sq.Cm.in its-dry condition. It shall not absorb water more than 20% of its own weight, whenimmersedfor24hoursinwater. After quarrying, the stone shall be allowed to weather for some time before using in work.

17.2 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.

17.3 Those types of stone in which white clay occurs should not be used. Special corner stones shall be provided where so directed.

M-21. Mild Steel Binding Wire

21.1. The mild steel wire shall be of 1.63 mm. or 1.22 mm. (16 to 18 gauges) diameter and shall conform to I.S. 280-1972.

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

M-22. Structural Steel

22.1. All structural Steel shall conform to I.S. 226-1985. The steel shall be free from the defects mentioned in I.S. 226-1975 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 I.S. 1148-1973. When the steel is supplied by the Contractor test certificate of the manufacturers shall be obtained according to I.S. 226-1975 and other relevant Indian. Standards.

M-26 Shuttering

26.1: The shuttering shall be plywood sheet. The shuttering shall be supported on battens and beams and tubular steel supports properly cross braced together so as to make the centering rigid.

26.2. The form work shall be sufficiently strong and shall have camber, so that it assumes correct shape after deposition of the concrete and shall be able to resist forces caused by vibration of live load of men working over it and other incidental loads associated with it. The shuttering shall have smooth and even surface and its joints shall permit leakage of cement grout.

26.3. If at any stage of work during or after placing concrete in the structure, the form work sags or bulges out beyond the required shape of the structure, the concrete shall be removed and work redone with fresh concrete and adequately rigid form work. The complete formwork shall be got inspected by and got approved from the Engineer-in-Charge, before the reinforcement bars are placed in position

26.4. The props shall consist to tubular steel support shall be placed as per design requirement. These shall rest squarely on steel sole plates and minimum bearing area of 0-10 sq m. laid on sufficiently hard base.

26.5. Double wedges shall further be provided between the sole plate and the wooden props so as to facilitate tightening and easing of shuttering without jerking the concrete.

26.6. The timber used in shuttering shall not be so dry as to absorb water from concrete and swell or bulge nor so green or wet as to shrink after erection. The timber shall be properly sawn and planed on the sides and the surface coming in contact with concrete, Wooden form work with metal sheet lining or steel plates stiffened by steel angles shall be permitted,

26.7. As far as practicable, clamps shall be used to hold the forms together and use of nails and spikes avoided.

26.8. The surface of timber shuttering that would come in contact with concrete shall be well wetted and coated with soap solution before the concreting is done. Alternatively coat of raw linseed oil or oil of approved manufacture may be applied in place of soap solution. In case of steel shuttering either soap solution or raw linseed oil shall be applied after thoroughly cleaning the surface. Under no circumstances black or burnt oil shall be permitted.

26.9. The shuttering for beams and slabs shall have camber of 4 mm. per metre

26.10. (1in250) or as directed by the Engineer-in-Charge so as to offset the subsequent deflection. For cantilevers, the camber at free end shall be 1/50 of the projected length or as directed by the Engineer-in-Charge.

M-29 Teak wood

29.1 The teak wood shall be of good quality as required for the item to be executed. When the kind of wood is not specifically mentioned, good Indian teak wood as approved shall be used.

29.2 Teak wood shall generally be free from large, loose dead or cluster knots, flaws shakes, warps, twists, bends or any other defects, it shall generally be uniform in substance and of straight fibres as far as possible. It shall be free from rot decay, harmful fungi and other defects of harmful nature which will affect the strength, durability or its usefulness for the purpose for which it is required. The colour shall be uniform as for as possible. Any effort like paining using any adhesive materials made to hide the defects shall render the pieces liable to rejection by the Engineer-in-Charge.

29.3 All scantlings, planks etc., shall be sawn in straight lines and planes in the direction of grains and of uniform thickness.

29.4 The tolerances in the dimensions shall be allowed at the rate of 1.5 mm. per face to be planed.

29.5. First class teak wood

29.5.1. First class teak wood shall have no individual hard and sound knots, more than 6 sq. cm. in size and the aggregate area of such knots shall not be more than 1% of area of piece. The timber shall be closed grained.

29.6. Second Class Teak Wood:

29.6.1.No individual hard and sound knots shall be more than 15 sq. cms. in size and aggregates area of such knots shall be not exceed 2% of the area of piece.

M- 31. Aluminum doors, windows ventilators

31.1. Aluminum alloy used in the manufacture of extruded window sections shall conform to I.S. designation HEA-WP of I.S. 733-1975 and also to I.S. Designation WVG-WP of I.S. 1285-1975.Thesection shall be as specified in the drawing and design. The fabrication shall be done as directed.

31.2. The hinges shall be cast or extruded aluminum hinges of same type as in window but of larger size. The hinges shall normally be of 50 mm. projecting type. Non-projecting type of hinges may also be used if directed. The handles of door shall be of specified design. A suitable lock for the door operable either from outside or inside shall be provided. In double shutter door, the first closing shutter shall have concealed aluminum alloy bolt at top and bottom.

M-32. Rolling Shutters

32.1. The rolling shutters shall conform to I.S.6248-1979. Rolling shutters shall be supplied of specified type with accessories. The size of the rolling shutters shall be specified in the drawings. The shutters shall 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 mm. thick and 80 mm. wide for shutters up to 3.5 m. width not less than 1.25 mm. thick and 80 mm. wide for shutters 3.5 m. in width and above, unless otherwise specified.

32.2. Guide channels shall be of mild steel deep channel section and of rolled pressed or built-up (fabricated) joint less construction. The thickness of sheet used shall not be less than 3.15 mm.

32.3. 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.

32.4. 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 spring 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 raw plugs and screws bolts etc.

32.5. The rolling shutters shall be of self rolling up to 8 Sq. m. clear area without ball bearing and up to 12 Sq.m. clear areas with ball bearing. If the rolling shutters are of larger, then gear operated type shutters shall be used.

32.6. The locking arrangement shall be provided at the bottom of shutter at both ends. The shutters shall be opened from outside.

32.7. The Shutters shall be completed with door suspension shafts, looking arrangements, pulling hooks, handles and other accessories.

M-33. Collapsible Steel Gate

33.1. The collapsible steel gate shall be in one or two leaves and size as per approved drawings or as specified. The gate shall be fabricated from best quality mild steel channels, flats, etc. Either steel pulleys or ball bearings shall be provided in every double channel. Unless otherwise specified the particulars of collapsible gate shall be as under:

(a) Pickets: These shall be of 20mm MS channels of heavy sections unless otherwise shown on drawings. The distance centre to centre of pickets shall be 12 cms. with an opening of 10 cms.

(b) Pivoted MS flats shall be 20 mm x 6 mm.

(c) Top and bottom guides shall be from tee or flat iron of approved size.

(d) The fittings like stoppers, fixing hold fasts, locking cleats, brass handles and cast iron rollers shall be of approved design and size.

M- 37. Plywood

37.1. The plywood for general purpose shall conform I.S.303-17-1975

Plywood is made by cementing together than 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 angles to the grain in the adjacent layer.

37.2. The Superintending 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.

37.3. Usually synthetic resins are used of gluing, phenol resins are usually cured in a hot press which compresses and simultaneously heats the plies between hot plates which maintainatemperatureof90degree C to 140 degree C 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.

37.4. When water glue are used the wood absorbs so much water that the finished plywood must be dried carefully. When synthetic resigns 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.

37.5. According to I.S: 303-1975 the plywood for 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 types namely AA, AB, AC, BB, BC and CC based on the quality of the two faces each face being of three kinds namely A, Band C After pressing, the finished plywood should be reconditioned to a moisture content not less than 8 percent and not more than 16 percent. Thickness of plywood Boards:

TABLE

Board	Thickness	Board	Thickness	Board	Thickness	Board	Thickness
3 ply	3mm	5 ply	5mm	7 ply	9mm	9 ply	16mm
	4mm		6mm		13mm		19mm
	5mm		7mm		16mm	11 Ply	19mm

	6mm		8mm	9 ply	13mm		25mm

M-38. Glass

38.1. All glass shall be of the best quality, free from specks, bubbles, smokes veins, air holes, blisters, and other defects. The kind of glass to be used shall be as mentioned in the item or specification or in the special provision or as shown in detailed drawings. Thickness of glass panes shall be uniform. The specifications for different kinds of glass shall be as under.

38.2. Sheet Glass

38.2.1. In absence of any specified thickness or weight in the item or detailed specifications of the item of work, sheet glass shall be weighing 7.5 Kg/Sq. m. for panes up to 600 mm. x 600 mm.

38.2.2. For panes larger than 600 mm. x 600 mm. and up to 800 mm. x 800 mm. the glass weighing not less than 8.75 Kg/Sq. m. shall be used for bigger panes up to 900 mm. x 900 mm. glass weighing not less than 8.75 Kg/Sq. m. shall be used. For bigger panes up to 900 mm. x 900 mm. glass weighting not less than 11.25 Kg/Sq. m. shall be used.

38.2.3. Sheet glass shall be patent flattened glass of best quality and for glazing and framing purposes shall conform to I.S. : 1761-1960. Sheet glass of the specified colors shall be used, if so shown, on detailed drawings or so specified. For important buildings and for panes with any dimension over 900 mm. plate glass of specified thickness shall be used.

38.3. Plate Glass:

38.4. 38.3.1. When plate glass is specified it shall be “polished patent plate glass " of best quality It shall have both the surface ground, flat and parallel and polished to obtain clear undisturbed vision and reflection. The plate glass shall be of the thickness mentioned in the item or as shown in the detailed drawing or as specified. In absence of any specified thickness, the thickness of plate glass to be-supplied shall be 6 mm. and a tolerance of 0.20 mm. shall be admissible.

38.4. Obscured Glass:

38.4.1. This type of glass transmits light so that vision is partially or almost completely obscured. Glass shall be plain rolled, figured, ribbed of fluted, or frosted glass as may be specified as required. The thickness and type of glass shall be as per details on drawings or as specified or as directed.

38.5. Wired Glass:

38.5.1. Glass shall be with wire netting embedded in a sheet of plate glass. Electrically welded 13 mm. Georgian square mesh shall be used. Thickness of glass shall not be less than 6 mm. Wired glass shall be of type and thickness as specified.

M-40. Particle board

40.1. The particle boards used for face panels shall of best quality free from any defects. The particleboards shall be made with phenol formaldehyde adhesive. The particle boards shall conform I.S.3087-1965. “Specification for wood particle board for general purpose". The size and the thickness shall be as indicated.

(1) **M-43. Fixtures and fastenings**

43.1. General:

43.1.1. The fixtures and fastenings, that is butt hinges tee and strap hinges sliding door bolts, tower bolts, door latch, bath-room latch, handles, door stoppers, casement window fasteners, casement stays, and ventilators catch shelf be made of the metal as specified in the item or its specification.

43.1.2. They shall be of iron, brass, aluminum chromium plated iron, chromium plated brass, copper oxidized iron, copper oxidized brass or anodized aluminum as specified.

43.1.3. The fixtures shall be heavy medium or light type. The fixtures and fastenings shall be smooth finished and shall be such as will ensue ease of operations.

43.1.4. The samples of fixtures and fastenings shall be got approved as regards, quality and shape before providing them in position

43.1.5. Brass and anodized aluminum fixtures and fastenings shall be bright finished.

43.2. Holdfasts:

43.2.1. Holdfasts shall be made from mild steel flat 30 cm. length and one of the holdfasts shall be bent at right angle and two nos. of 6 mm. diameter holes, salt be made in it for fixing it to the frame with screws. At the other end, the holdfast shall be forked and bent at right angles in opposite directions.

43.3. Butt hinges:

43.3.1. Railway standard heavy type butt hinges shall be used when so specified.

43.3.2. Tee and strap hinges shall be manufactured from M.S. Sheet

43.4. Siding door bolts (Aldrop):

43.4.1. The aldrop as specified in the item shall be used and shall be got approved.

43.5. Tower bolts (Barrel Type):

43.5.1. Tower bolts as specified in the item shall be used and shall be got approved.

43.6. Door Latch:

43.6.1. The size of door latch shall be taken as the length of latch.

43.7. Bathroom Latch:

43.7.1. Bathroom latch shall be similar to tower bolt.

43.8. Handle:

The size of the handles shall be determined by the inside grip length of the handles. Handles shall have a base plate of length 50 mm. more than the size of the handle.

43.9. Door Catch:

43.9.1. Door stoppers shall be either floor door stopper type or door catch type. Floor stopper shall be of overall size as specified and-shall have a rubber cushion.

43.10. Door Stoppers:

43.10.1. Door catch shall be fixed at a height of about 900 mm. from the floor level such that one part of the catch is fitted on the inside of the shutter and the other part is fixed in the wall with necessary wooden plug arrangements for appropriate fixity. The catch shall be fixed 20 mm. inside the face of the door for easy operation of catch.

43.11. Wooden Door Stop with hinges:

43.11.1. Wooden door stop of size 100 mm. x 60 mm. x 40 mm. shall be fixed on the door frame with a hinges of 75 mm. size and at a height of 900 mm. from the floor level. The wooden door stop shall be provided with 3 coats of approved oil paint.

43.12. Casement Window Fastener:

43.12.1. Casement window fastener for single leaf window shutter shall be left or right handed as directed.

43.13. Casement stays (Straight Fed Stay):

43.13.1. The stays shall be made from a channel section having three holes at appropriate position so that the window can be opened either fully or partially as directed. Size of the stay shall be 250 mm. to 300 mm. as directed.

43.14. Ventilator Catch:

43.14.1. The pattern and shape of the catch shall be as approved.

43.15. Pivot:

43.15.1. The base and socket plate shall be made from minimum 3 mm. thick plate, and projected pivot shall not be less than 12 mm-, diameter and 12 mm. length and shall be firmly riveted to the base plate in case of iron pivot and in single piece plate in the case of brass pivot.

M-44. Paints:

44.1. (A) Oil paints:

44.1.1. Oil paints shall be of the specified colour and as approved. The ready mixed paints shall only be used. However, if ready mixed paint of specified shade or tint is not available white ready mixed paint with approved strainer will be allowed. In such a case, the contractor shall ensure that the shade of the paint so allowed shall be uniform.

44.1.2. All the paints shall meet with the following general requirements

(i) Paint shall not show excessive setting in a freshly opened full can and shall easily be re dispersed with a paddle to a smooth homogeneous state. The paint shall show no curdling, livering, caking or colour separation and shall be free from lumps and skins.

(ii) The paint as received shall brush easily, possess good leveling properties and show no running or sagging tendencies.

(iii) The paint shall not skin within 48 hours in a three quarters filled closed container.

(iv) The paint shall dry to a smooth uniform finish free from roughness, grit unevenness and other imperfections.

44.1.3. Ready mixed paint shall be used exactly as received from the manufacturers and generally according to their instructions and without any admixtures whatsoever.

44.2. (B) Enamel paints:

44.2.1. The enamel paint shall satisfy in general requirements in specification of oil paints, Enamel paint shall conform to I.S.2933-1975

M-46. Marble chips for marble mosaic terrazzo

46.1. The marble chips shall be of approved quality and shades. It shall be hard, sound, dense and homogeneous in texture with crystalline and coarse grains. It shall be uniform in colour and free from stains cracks, decay and weathering.

46.2. The size of various colours of marble chips ranging from the smallest up to 20 mm shall be used where the thickness of top wearing layer is 6 mm. size. The marble chips of approved quality and colours only as per grading as decided by the Engineer-in-charge shall be used for marble mosaic tiles or works.
46.3. The marble chips shall be machine crushed. They shall be free from foreign matter; dust etc. except as above, the chips shall conform to I S.2114-1962.

M-47. Flooring Tiles.

47.1. (A) Plain Cement tiles;

47.1.1. The plain cement tiles shall be of general purpose type. These are the tiles in the manufacture of which no pigments are used. Cement used in the manufacture of tiles shall be as per Indian Standards.
47.1.2. The tiles shall be manufactured from a mixture of cement and natural aggregates by pressure process. During manufacture the tiles shall be subjected to pressure ofnotlessthan140Kg/Sq.Cm.The proportion of cement to aggregate in the backing of the tiles shall be not less than 1 :3 by weight. The wearing face, through the tiles are of plain cement, shall be provided with stone chips of 1to2mm.size.The proportions of cement to aggregate in the wearing layer of the tiles shall be three parts of cement to one parts chips by weight. The minimum thickness of wearing layer shall be 3 mm. The colour and texture of wearing layer shall be uniform throughout its face and thickness. On removal from mould, the tiles shall be kept in moist condition continuously at least for seven days and subsequently, if necessary, for such long period as would ensure their conformity to requirements of I.S. 1237-1980 regarding strength resistance to wear and water absorption.
47.1.3 The wearing face of the tiles shall be plane, free from projections, depressions and cracks and shall be reasonably parallel to the back face of the tile. All angles shall be right angle and all edges shall be sharp and true.
47.1.4. The size of tiles generally be square shape 24.85 Cm x24.85 Cm. or 25 Cm x 25 Cm. The thickness of tiles shall be 20 mm.
47.1.5. Tolerance of length and breadth shall be plus or minus one millimeter. Tolerance on thickness shall be plus 5 m.m.
47.1.6. The tiles shall satisfy the tests as regards transverse strength; resistance to wear and water absorption as per I.S. 1237-1980.

47.2.(B) Plain Colored Tiles:

47.2.1. The tiles shall have the same specification as for plain cement tiles as per (A) above except that they shall have a plain wearing surface wherein pigments are used. They shall confirmtill.S.1237-1980.
47.2.2. The pigments used for coloring cement shall not exceed 10 percent by weight of cement used in the mix. The pigments, synthetic or otherwise, used for coloring tiles shall have permanent colour and shall not contain materials detrimental to concrete.
47.2.3. The colour of the tiles shall be specified in the item or as directed.

47.3. (C) Marble mosaic tiles:

47.3.1. These tiles have same specification as per plain cement tiles except the requirements as stated below:
47.3.2. The marble mosaic tiles shall conform to I.S. 1237-1980. The wearing face of the tiles shall be mechanically ground and filled. The wearing face of tiles shall be free from projections, depressions, and cracks and shall be reasonably parallel to the back face of the tiles.
All angles shall be right angles and all edges shall be sharp and true.
47.3.3. Chips used in the tiles be from smallest unto 20 mm. size. The minimum thickness of wearing layer of tiles shall be 6 mm. For pattern of chips to be used on the wearing face, a few samples with or without their full size photographs as directed shall be approved by the Engineer-in-Charge, for approval.
47.3.4. Any particular samples if found suitable shall be approved by the Engineer - in - Charge, or he may ask for a few more samples to be presented. The sample shall have to be made by the contractor till a suitable sample is finally approved for use in the work. The Contractor shall ensure that the tiles supplied for the work shall be in conformity with the approved sample only, in terms of its dimensions thickness of backing layer and wearing surface, materials, ingredients, colour, shade, chips, distribution etc. required.
47.3.5. The tiles shall be prepared from cement conforming to Indian Standards or Colored Portland cement generally depending upon the colour of tiles to be used or as directed.

47.4. (D) Chequered Tiles:

47.4.1. Chequered tiles shall be plain cement tiles or marble mosaic tiles. The former shall have the same specification as per (A) above and the latter as per marble mosaic tiles as per (C) except as mentioned below.

47.4. 2. The tiles shall be of nominal size of 250 mm. x 250 mm. or as specified. The centre to centre distance of chequer shall not be less then 25 mm. and not more than 50 mm. The overall thickness of the tile shall be 22 mm.

47.4.3. The grooves in the chequers shall be uniform and straight. The depth of the grooves shall not be less than 3 mm. The chequered tiles shall be plain colored or mosaic as specified. The thickness of the upper layer measured from the top of the chequers shall not be less than 6 mm. The tiles shall be given the first grinding with machine before delivery to site.

47.4.4. Tiles shall conform or relevant I.S. 1237-1980.

47.5. (E) Chequered Tiles for Stair Cases:

47.5.1. The requirements of these tiles shall be the same as Chequered tiles as per (D) above except in following respects:

(1) The length of a tile including note shall be 300 mm.

(2) The minimum thickness shall be 28 mm.

(3) The nosing shall have also the same wearing layer as at the top.

(4) The nosing edge shall be rounded.

(5) The front portion of the tile for a minimum length of 75 mm. from and including the nosing shall have grooves running parallel to nosing and at centers not exceeding 25 mm. Beyond that the tiles shall have normal chequer pattern.

M-49. Polished Kotah Stones

49.1. Polished Kotah stone shall have the same specification as per rough Kotah stone except as mentioned below:

49.2. The stones shall have machine polished surface. When brought on site, the stones shall be single polished or double polished depending upon its use. The stones for paving shall generally be single polished. The stones to be used for dado, skirting, sink, veneering, sills, steps, etc. where machine polishing after the stones are fixed in situ is not possible shall be double polished.

M-55. White glazed tiles

55.1. 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 fee from cracks, crazing sports, chipped edges and corners The glazing shall be of uniform shade.

55.2 The tiles shall be nominal size of 150 mm. x 150 mm. unless otherwise, specified. The maximum variation 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 conform to I.S. 1977-1970.

M-56. Galvanized iron pipes and fittings

56.1. Galvanized iron pipes shall be of the medium type and or required diameter and shall comply with I.S.1239-1979. The specified diameter of the pipes shall refer to the inside diameter of the bore. Clamps, screw and all galvanized iron fittings shall be of the standard ' R ' or equivalent make.

M-57. Bib cock and stop cock

57.1 A bib cock is a draw off tap with a horizontal inlet and free outlet. A stop cock is a valve with a suitable means of connection for insertion in a pipe line for controlling or stopping the flow.

57.2. They shall be of screw down type and or brass chromium plated and of diameter as specified in the description of the item. They shall conform to I.S. 781-1977 and they shall best Indian make. They shall be polished bright.

57.3. The minimum finished weight of bib cock and stop cock shall be as given below:

Diameter	Bib cock	Stop cock	Diameter	Bib cock	Stop cock
8mm	0.25kg	0.25 kg	15mm	0.40kg	0.40 kg
10mm	0.30 kg	0.35 kg	20mm	0.75kg	0.75 kg

M-58. Gun metal wheel valve

58.1. The gun metal wheel valve shall be of approved quality. These shall be of gun metal fitted with wheel and shall be of gate valve opening full way and of the size as specified. These shall conform to I.S.778-1971.

M-59. White glazed porcelain wash basin

59.1. Wash basin shall be of white porcelain first quality best Indian make and it shall conformtoI.S.2556.(Part-IV) -1972 and I.S.771-1979. The size of the wash basin shall be as specified in the item. Wash basin shall be of one piece construction with continued over flow arrangements. All internal angles shall be designed so as to facilitate cleaning. Wash basin shall have single tap hole or two holes as specified. Each basin shall have a circular waste hole which is either rebated or beveled internally with 65 mm. diameters at top and 10 mm. depth to suit the waste fitting. The necessary stud slot to receive the

bracket on the underside of the basin shall be provided Basin shall have an internal soap holder recess which shall fully drain into the bowl.-

59.2. White glazed pedestal of inequality and color as that to the basin shall be provided where specified in the item. It shall be completely recessed at the back for reception of supply and wash pipe. It shall be capable of supporting the basin rigidly and adequately and shall be so designed as to make the height from the floor to top of the rim of basin 750 mm. to 800 mm. as directed.

M-60. European type water closet / with low level flushing.

60.1 The European type water closet shall be white / coloured glazed porcelain first quality and shall be of wash down type conforming to IS 2556 – 1973 and IS 771 – 1979.

60.2 'S' trap shall be provided as required with water seal not less than 50mm. The solid plastic seat and cover shall be of the best Indian make conforming to IS 2548 – 1980. They shall be made of moulded synthetic materials which shall be tough and hard with high resistance to solvents and shall be free from blisters and other surface defects and shall have chromium plated brass hinges and rubber buffer of suitable size.

M-61. Orissa type water closet

61.1 The specification of Orissa type white / coloured glazed water closet of first quality shall conform to IS 256 (Part III) 1981 and relevant specification of Indian type water closet except that pan will be with the integral squatting pan of size 580 mm x 440 mm with raised footrest.

M-62. Indian type water closet

62.1. The Indian type white glazed water closet of first quality shall be of size as specified in the item and conforming to I.S. : 771-1979 and I.S. :2556- (Part -II) 1981. Each pan shall have integral flushing. It shall also have an inlet at black an or front for connecting flush pipes as directed, The inside of the bottom or the pan shall have sufficient slope from the front towards the outlet and surface shall be uniform and smooth. Pan shall be provided with 100 mm. diameter 'P' or 's' trap with approximately 50 mm. Water seal and 50 mm. diameter vent horn.

M-62. A. Foot Rests

62.A. 1. A pair of whit glazed earthen ware rectangular foot to minimum size 250 mm. x 130 mm. x 20 mm. shall be provided with the water closet.

M-64. Glazed earthen-ware Lipped type flat back urinal/corner type urinal

64.1. The lipped type urinal shall be flat back or corner type as specified in the item and shall conform to I.S.771-1979. It shall be of best Indian make and. size as specified and approved by the Engineer-in-Charge. The flat back of corner type urinal must be of 1st quality free from any defects, cracks etc.

M-67. Flush cock.

67.1. Half turn flush cock (Heavy weight) shall be of gun metal chromium plated of diameter as specified in the description of the item. The flush cock shall conform to relevant Indian Standard.

M-68. Cast iron pipes and fittings.

68.1. All soil, water, vent and anti-siphon age pipes and fitting shall conform to I.S.1729-1964.Thepipesshall have spigot and socket ends with head on spigot end. The pipes and fitting shall be true to shape, smooth, cylindrical, their inner and outer surfaces being as nearly as practicable concentric. They shall be sound and nicely cast and shall be free from cracks, laps, pinholes or the imperfection and shall be neatly dressed and carefully fettled.

68.2. The end of pipes and fittings shall be reasonable square to their axis.

68.3. The sand of cast iron pipes shall be of the diameter as specified in the description and shall be in lengths of 1.5 M., 1.8 M. including socket ends of the pipe unless shorter lengths are either specified or required at junctions etc. The pipes and fittings shall be supplied without ears unless specified or directed otherwise.

68.4. Tolerances :

68.4.1. The Standard weights and thickness of pipes shall be as shown in the following table.

A tolerance up to minus 10 per cent may however be allowed against these standard weights.

Sr. No.	Nominal dia. of bore	Thickness	Overall 1,5 m. long	Weight of pipe 1.8 m. long	excluding ears 2.m. long
1	75mm	5mm	12.38kg	16.52kg	18.37kg
2	100mm	5mm	18.14kg	21.67 kg	24.15kg

68.4.2. A tolerance up to minus 15 percent in thickness and 20 mm. length will be allowed. For fittings tolerance in lengths shall-be plus 25 mm. and minus 10 mm.

68.4.3. The thickness of fittings and their socket and spigot dimensions shall conform to the thickness and dimensions specified for the corresponding sizes of straight pipes. The tolerance in weights and thickness shall be the same as for straight pipes.

M**-69. Nahni Trap**

69.1. Nahni trap shall be of cast iron and shall be sound and free from porosity or other defects which affect serviceability. The thickness of the base metal shall not be less than 6.5mm.Thesurfaceshallbesmoothand free form craze, chips and other flaws or any other kind of defects which affect serviceability. The size of Nahni trap shall be specified and shall be of self-cleaning design.

69.2. The Nahni trap shall be of quality approved by the Engineer-in-Charge and shall generally conform to the relevant Indian Standards. , ,

69.3. The Nahni trap provide shall be with deep seal, minimum 50 mm. except at places where trap with deep seal cannot be accommodated. The cover shall be cast iron perforated cover shall be provided on the trap of appropriate size.

M-70. Gully Trap

70.1. Gully trap shall conform to I.S.651 -1980. If 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.

70.2. The size of the gully trap shall be as specified in the item.

70.3. Each gully trap shall have one C.I. grating of square size corresponding to the dimensions, of inlet of gully trap. It will also have a water tight C.I. cover with frame inside dimensions 300mm.x300mm. the cover with frame inside dimensions 300 mm. x 300 mm. the cover and 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.

M 71. Glazed Stone Ware pipe And Fittings

71.1. The pipes and fittings shall be of best quality as approved by the Engineer – in - Charge. The pipe shall be of best quality manufactured from stone-ware of fire clay, salt glazed thoroughly burnt through the whole thickness, of a close even texture, free from air blows, fire blisters, cracks and other imperfections, which affect the serviceability. The inner and outer surfaces shall be smooth and perfectly glazed. The pipe shall be capable to withstand pressures or 1.5 M. lead without showing sign of leakage. The thickness of the wall shall not be less than 1/12th of the internal dia. The depth of socket shall not be less than 38 mm. The socket shall be sufficiently large to allow a joint of 6 mm. around the pipe.

The pipes shall generally conform to relevant I.S.651-1980.

M-78 Barbed Wire

78.1: The barbed wire shall be of galvanized steel and it shall generally conform to I.S.278-1978. 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 shell 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.

78.2. 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 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 greaterthan35degree of the axis of the wire forming the barbs.

78.3. The line and point wires shall be circular in 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 metres.78.4. The lengths per 100 Kg. of barbed wire I.S. type I shall be as under: Nominal 1000 metre Minimum 934 Metre Maximum 1066 Metre

(E7): DETAIL SPECIFICATION FOR WORK ITEMS:-

Item Excavation for foundation up to 1.50 m Depth including sorting out and stacking of useful materials & Refilling in yard and the sides of the trenches and disposing of the excavated stuff up to any lead - Hard Murrum

1. **General: -** Any soil which generally require close application of picks or jumpers or scarifies to loosen it, stiff clay, gravel and stone, etc. or organic soil, gravel silt, sand, turf, loam, clay, peat, etc. fall under this category.
2. **Clearing the site: -** 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 removal as directed. The materials so obtained shall be property of the Government and shall be conveyed and stacked as directed within 500 m. lead. The roots of the trees coming in the sides shall be cut and coated with hot asphalt. The rate of side clearance is deemed to be included in the rate of earth work for which no extra will be paid.
3. **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 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. **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 shutting or providing necessary slopes to a safe angle, at his own cost. The payment for such precautionary measures shall be paid separately if not specified. The bottom of the excavated area shall be leveled both longitudinally and transversal as directed by removing and watering as required. No earth filling will be allowed for bringing it to level. If by mistake or any 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 up to 1.5 m depth shall be measured under this item.
5. **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 with lead up to 500 M. and all lift.
6. **Mode of measurements & 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 requirements 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 Providing & laying control cement concrete M-20 as per mix design exposed work with curing etc. complete excluding the cost of ply wood form work & adjustable tubular steel supports / Props. and excluding the cost of reinforcement. G.F + FF & Staircase - For Footing base of col., foundation & mass concrete.

Materials: - Water shall conform to M-1. Cement shall conform to M-3. Sand shall conform to M-6. Grit shall conform to M-8. Graded stone aggregate 20mm nominal size shall conform to M-12.

2.0 General: - The concrete mix shall be designed by preliminary tests, the proportioning of cement and aggregates shall be done by weight and necessary precautions shall be taken in the production to ensure that the required work cube strength is attained and maintained. The controlled concrete shall be in grade of M-200 with prefix controlled added to it. The letter 'M' refers to mix and numbers specify 28 days' works cube compressive strength of 150 mm cubes of the mix expressed in Kg/ Cm2.

2.2 The proportion of cement, sand and coarse aggregates shall be determined by weight. The weigh Batching machine shall be used for maintaining proper control over the proportion of aggregates as per mix design. The strength requirements of different grades of concrete shall be as under: 87 Grade of concrete Compressive strength of 15 cms. Cubes in Kg / Cm2 at 28days, conducted in accordance with IS 516 – 1959.Preliminary test (min) Work test (min)M-150 200 150, M-200 260 200, M-250 320

250, M-350 440 350, M-400 500 400In all cases, the 28 days' compressive strength specified in above table be the criteria for acceptance or rejection of the concrete. Where the strength of a concrete mix as indicated by tests, lies in between the strength of any two grades specified in the above table, such concrete shall be classified in for all purposes as concrete belonging to the lower of the two grades between which its strength lies.

2.3 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 admixture.

3.0 **Workmanship**

3.1 The proportions for ingredients chosen shall be such that concrete has adequate workability for conditions prevailing on the work in question and can be properly compacted with means available except where it can be shown to the satisfaction of the Engineer – in –Charge, that the supply of properly graded aggregate of uniform quality can be maintained till the completion of work. Grading of aggregate shall be controlled by obtaining the coarse aggregates, in different sizes and being in them in the right proportions as required.

Aggregate of different sizes shall be stocked in separate stock piles. The required quantity of material shall be stock piled several hours, preferably a day before use. The grading of coarse and fine aggregate shall be checked as frequently as possible, the 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 used in the preliminary tests.

3.2 In proportioning concrete, the quantity of both cement and aggregate shall be determined by weight. Where the weight of cement is determined by accepting the maker's weight per bag a reasonable number of bags shall be weighed separately to check the net weight.

Where the cement is weighed from bulk stocks at site and not by bags, it shall be weighed separately from the aggregates. Water shall either be measured by volume in calibrated tanks or weighed. All measuring equipment shall be maintained in clean, and serviceable condition. Their accuracy shall be periodically checked.

3.3 It is most important to keep the specified water cement ratio constant and at its correct value. To this end, moisture content in both fine and coarse aggregates shall be determinedly 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 2389 (Part III) shall be referred to. Suitable adjustments shall also be made in the weights of coarse aggregates due to variation in the moisture content. Minimum quantity of cement to be used in concrete shall not be less than 320 Kg / Cmt.

3.4 **Mixing**

3.4.1 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, 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 half a minute. Mixing shall be continued till materials are uniformly distributed and uniform colour of the entire mass is obtained and each individual particle of the coarse aggregate shows complete coating of88mortar containing its proportionate amount of cement. In no case shall the mixing be done for less than two minutes after all ingredients have been put into the mixer.

3.4.2 Mixers which have been out of use for more than 30 minutes shall be thoroughly cleaned before putting in a new batch. Unless otherwise agreed to by the Engineer – in –Charge the first batch of concrete from 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.

3.5 **Consistency: -** The degree of consistency which shall depend upon the nature of the work and methods of vibration of concrete shall be determined by regular slump tests in accordance with IS 1199– 1959. The slump of 10 mm to 25 mm shall be adopted when vibrators are used and 80 mm when vibrators are not used.

3.6 **Inspection**

3.6.1 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 fitness but such inspection shall not reliever 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.

3.6.2 Centering design and its erection shall be got approved from the Engineer – in –Charge. One carpenter with helper shall invariably be 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.

3.7 **Transporting and laying**

3.7.1 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, snow or ice immediately before placing of concrete. No concrete shall be placed in any part of the structure until the approval of Engineer – in – Charge has been obtained.

3.7.2 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 30minutes unless a proper construction joint is formed. Concrete shall be compacted in its final position within 30 minutes of its discharge from the mixer. Except 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 0.30metre in all other cases.

3.7.3 Unless otherwise agreed to by the Engineer – in – Charge, concrete shall not be dropped into place from a height exceeding 2 meters. When trucking 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 13mm thick layer of mortar composed of cement and sand in 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. When concrete has not fully hardened, all laitance shall be removed by scrubbing the wet surface with wire or 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 150mm in thickness and shall be well rammed against old work, particular attention being given to corners and close spots.

3.7.4 All concrete shall be compacted to produce a dense homogeneous 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.89Concrete shall be judged to be compacted when the mortar fills the spaces between the coarse aggregate and begins to cream up to form an ever surface. Compaction shall be completed before the initial setting starts i.e. within 30 minutes of addition of water to dry 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.

3.8 **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, Hessian 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. Masonry 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.

3.9 **Sampling and testing of concrete**

3.9.1 Samples from fresh concrete shall be taken as per IS 1199 – 1959 and cubes shall be made, cured and tested at 7 days or 28 days as per requirements in accordance with IS 516 –1959. 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	31 - 50 Cmt.	4

6 – 15 Cmt.	2	51 and above	4 + one additional for each additional 50 m. or part thereof.
16 – 30 Cmt.	3		

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 day of 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.

3.9.2 The average strength of the group of cubes cast for each day shall not be less than the specified cube strength of 150 Kg / Cm2 at 28 days. 20 % of the cubes cast for each day may have value less than the specified strength provided the lowest value is not less than 85% of the specified strength. If the concrete made in accordance with the proportions given for particular grade, does not yield the specified strength, such concrete shall be classified as belonging to the appropriate lower grade. Concrete made in accordance with the proportions given for a particular grade shall not, however, be placed in a higher grade on the ground that the test strength is higher than the minimum specified.

4.0 Stripping

4.0.1 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 work, due consideration shall be given to local conditions, character of the structure, the weather and other condition that influence the setting of concrete and of the materials used in the mix. In normal circumstances (generally where temperatures are above 20° C and where ordinary concrete is used, forms may be struck after expiry of periods specified in item for respective item of form work.

4.0.2 All form work shall be removed without causing any shock or vibration as would damage the concrete. Before the soffit and struts are removed, the concrete surface shall be exposed, where necessary in order to ascertain that the concrete has sufficiently hardened. Centering shall be gradually and uniformly lowered in such a manner as to permit the concrete to take90stress 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 than 25 mm cover to the finished concrete surface. Where it is intended to re-use the formwork, it shall be cleaned and made good to the satisfaction of the Engineer – in – Charge. After removal of form work and shuttering, the Executive Engineer shall inspect the work and satisfy by random checks that concrete produced is of good quality.

4.0.3 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 mm below the surface of the concrete and the resulting holes be filled by cement mortar. All line caused by form joint, 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 thorough filling in all voids. Surfaces which are pointed shall be kept moist for a period of 24hours.If rock pockets / honeycombs in the opinion of the Engineer – in – Charge are of such an extent or character as to effect 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 the structure effected.

4.1 Mode of measurement and payment

4.1.1 Controlled concrete RCC for work as specified shall be measured under this item. The rate excluded the cost of form work.

4.1.2 The consolidated cubical contents of concrete work as specified in item shall be measured. The concrete laid in excess of section shown on drawings or as directed shall not be measured. No deduction shall be made for –

(a) Ends of dis-similar materials such as joists, beams, posts, girders, rafters, purling trusses, corbels and steps, etc. up to 500 Sq. Cm. in section.

(b) Opening up to 0.1 Sq. M.4.1.3 The rate includes cost of all materials, labor, tools, and plant required for mixing, placing in position, vibrating and compacting, finishing as directed, curing and all other incidental expenses for producing concrete of specified strength.

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

Item Providing 15mm thick sand face/rough cement plaster on walls in single coat on fare side masonry /bela/concrete wall/ceiling up to any height and finished even and smooth in C.M. 1:3 (1 cement : 3 sand) etc. complete.

Cement to be used for this work shall be confirm to I. S. 269 or I. S. 1489 as the case may be. Water shall be potable water free from impurities. Sand shall confirm to IS. 1542. Sand shall be free dust, clay, fine silt, organic impurities etc.

Before plastering work is stated joints of brick work, if not racked during masonry work shall be racked out 20mm deep. Racking of joints shall be done such that masonry work is not damaged. Where plastering is to be done on old plastered surface or concrete surface it shall be roughened to provide sufficient bonding for plaster. Surface to be plastered shall be thoroughly wetted for 6 hours before plastering work is commenced. Plastering work shall be carried out only after surface to be plastered is examined and Okayed by The Engineer.

Cement and sand shall be mixed dry in proportion specified in item. Water shall be added after uniform dry mix is prepared, just enough to from workable paste. Patches of plaster of 100mm x 100mm should be prepared at 3 meters apart horizontally and vertically to correct plane to specified thickness. In case of ceiling, plastering shall be truly horizontal.

Plastering shall be done in single coat or two coats as per item and according to thickness specified. Mortar shall be dashed with surface with trowel and then worked with wooden straight edge or aluminum straight edge box section. Surface shall be finished smooth to the satisfaction of Engineer. Lime neeru or cement neeru as specified in item shall be applied and finished smooth by working with trowel. Portion in which dado or skirting is to be provided shall be marked and left unplastered. At junction of ceiling and wall. Wall shall be plastered about @ 300 ht. with ceiling and further portion be plastered with wall plastering.

Plastered surface should be cured for minimum period of 7 days. Marking shall be done on wall indicating the date of plastering, to observe, curing is done for required period. Plastering work done shall be checked from department's authorized agent regularly at the end of day's work and any rectification to be carried out, shall be attended immediately.

Plastering shall be measured for actual area plastered in square metre and paid accordingly. Doors, windows, ventilators, opening etc. shall be deducted. Rate quoted shall be inclusive of plastering any type of surface, finishing corner, angles, providing, grove, drip molding in Chhajja etc. necessary scaffolding for plastering with all materials, labour, tools etc. complete with 3 coats of white or color wash.

Item Providing 20mm thick sand face cement plaster on wall up to height 10 meters above ground level consisting of 12mm thick backing coat of C.M. 1:3 (1 cement : 3 sand) and 8mm thick finishing coat of C.M. 1:1 (1 cement : 1 sand) etc. complete.

Materials

1.1. Water shall conform to M-1. Cement mortar shall conform to M-11.

2.0. Workmanship

2.1. 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 specifications of item No. 17.58(I) shall be followed except that 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.

1.0. The second coat shall be completed to 8 mm. thickness in C.M. 1:1 as described above, including raising sand facing by bushing. The sample of sand face shall be got approved before the work is started. The whole work shall be carried out uniformly as per sample approved.

1.1. **Curing :**

The curing shall be started overnight 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.

3.0. Mode of measurement & payment

3.1. The relevant specifications of item No. 17.58 shall be followed except that the sand face plaster on outside up to 10 m. above ground level shall be measured under this item.

3.2. The rate shall be for a unit of One sq. meter.

Item Providing & fixing Chicken mesh jali of 13 mm to 30 mm mesh size (dia. of wire mesh 0.8 to 1.4 mm) having hexagonal /diamond shape at the joint/junction between concrete part i.e., Beam, column, lintel & brick masonry while plastering work including fitting arrangements etc. complete as directed by EIC.

The material to be used shall have to be got approved before start of work. Payment shall be made on actual square meter basis.

Item Providing distempering (three coats) with oil bound distemper of approved brand and manufacture and of required shade on undercoated wall surface to give an even shade over and including a priming coat with distemper primer of approved brand and manufacture after thoroughly brushing the surface free from mortar droppings and other foreign matter and also including preparing the surface even and sand papered smooth.

1.0 Materials: -Oil bound washable distemper and primer shall be of approved brand and manufacture. The distemper shall be of required colour and shade and the same shall conform to I.S. : 428-1969.

2.0. Workmanship: -

2.1. Scaffolding: -Where scaffolding is required, it shall be erected in such a way that as far as possible no part of scaffolding shall rest against the surface to be distempered. A properly secured and well tied suspended platform (Joola) may be used for distempering. Where ladders are used, pieces of old gunny bags" shall be tied at top and bottom to prevent scratches to the walls and floors. For distempering to ceiling, proper stage scaffolding shall be erected where necessary.

2.2. Preparation of surface:

2.2.1. The undecorated surface to be distempered shall be thoroughly brushed from dust, dirt, grease, mortar dropping and other foreign matter and sand papered smooth. New plaster surface shall be allowed to dry for at least 2 months before applications of distemper.

2.2.2. All unnecessary nails shall be removed. Pitting in plaster shall be made good with plaster again with a fine grade sand paper and made smooth. A coat of distemper shall be applied over the patches. The surface shall be allowed to dry thoroughly before the regular coat of distemper is allowed. The surface affected ay mould, moss, fungi, algae lichens, efflorescence etc. shall be treated in accordance with I.S; 2395 (Part01) 1966. Before applying distempering, any unevenness shall be made good by applying putty made of plaster of pairs mixed with water on entire surface including filling up the undulation and then sand papering the same after it is dry.

2.3. Priming coat: - A priming coat of distemper primer of approved manufacture and shade shall be applied over the papered surface in case of new work on undecorated surface. If the distemper priming is done after the wail completely, the distemper primer shall be applied.

Application of primer shall be done as under: The primer shall be applied with a brush on the clean dry and smooth surface. Horizontal strokes shall be given first and vertical strokes shall be applied immediately afterwards. This entire operation will constitute on coat. The surface shall be finished as uniformly as possible leaving no brush marks. It shall be allowed to dry for at least 48 hours before oil bound distemper or paint is applied.

Oil bound distemper is not recommended to be applied within six months of the completion of wall plaster.

2.4. Preparation of oil bound distemper:- The distemper shall be diluted with water or any other prescribed thinner in a manner recommended by the manufacturer only. Sufficient quantity of distemper required for a day's work shall be prepared.

2.5. Application of Distemper coat: - For undecorated surfaces, after the primer coat is dried for at least 48 hours, the surface shall be lightly sand papered to make it smooth for receiving the distemper, taking care not to rub but priming coat. All loose particles shall be dusted of after rubbing. Minimum two coats of distemper shall be applied with brushes in horizontal strokes followed immediately by vertical strokes which together shall constitute one coat. The subsequent coats shall be applied after a time interval of at least 24 hours between consecutive coats to permit proper drying of the proceeding coat. The finished surface shall be even and inform without patches, brush marks,

distemper drops etc. Sufficient quantity of distemper shall be mixed to finish one room at a time. The application of a coat in each room shall be finished in one operation and no work shall be striated in any room which cannot be completed on the same day.15 cm. double bristled distemper brush shall be used. After day's work brushes shall be thoroughly washed in hot water with soap solution and hung down to dry. Old brushes which are dirty and caked with distemper shall not be used on the work.

2.6 Protective measurements: The surfaces of doors, windows, floors, articles of furniture etc. and such other parts of the buildings as are not to be distempered shall be protected from being splashed upon. Such surfaces shall be cleaned of distemper splashes if any.

Mode of measurements and payment

Priming coat of distemper primer, scraping of surface spoiled by stunk shoots, removal of oil and grease spots, treatment for infraction of effloresces. Mould. Moss, fungi, algae and lichen and patch repairs to plaster shall be included in this item for which nothing extra shall be paid.

All the work shall be measured net in the decimal system as in place subject to the following limits unless otherwise stated here in after: Dimensions shall be measured to the nearest 0.01 m. Area in individual items shall be worked out to the nearest 0.01 sq. m. All work 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 reveals, jambs, soffits, sills etc. of these openings not for finish around ends of joints, beams, posts etc.

3.3. Deductions of opening exceeding 0.5 sq. But not exceeding 3 sq. m. each shall be made as follows and net addition shall be made for reveals, jambs, soffits etc. of these openings when both the faces of wall are provided, with same finish, deductions shall be made for one face only.

When each face of wall is provided with different finish, deduction shall be made for that side of frame for doors, windows etc. on which width of reveals is less than that of the other side but no deduction shall- be made on the other side. Where the width of reveals on the both the faces of wall are equal, deduction of 50% of area of opening on each face shall be made from area of finish.

When only one face of wall is treated and the other face is not treated, full deductions shall be made if the width of the reveal on treated side is less than that on untreated side but if the width of the reveal is equal or more than that on untreated side neither deductions nor additions to be made for reveals, jambs, soffits, sills etc.

3.4. In case of opening of area exceeding 3 sq. m. each deduction shall be made for openings but jambs, silis and soffits shall be measured. No deductions shall be made for attachments such as casings, conduits, pipes, electric wiring and the like. Item includes removing nails, making good holes, patches with materials similar in composition of distemper. The rate includes cost of all materials, labours, scaffolding, protective measures etc. involved in all the operations described above. This shall also include conveyance, delivery, handing, unloading, storing work etc. The rate shall be for a unit of one sq. meter.

Item Applying two Coats of Birla(white cement based) or Asian(acralic lapy-putty) or equivalent & two coats of primer of approved brand and manufacture on new wall surface to give an even shade including thoroughly brushing the surface free from mortar dropping and other foreign matter and sand papered smooth.

1. As per specification, item description & instructions of EIC.
2. The rate shall be for a unit of Smt.

Item Providing and Applying 1(one) Coat of SMARTCARE PRIMERO and 2(two) coats of APOCOLITE APEX plastic emulsion paint or its equivalent Wall painting of approved brand and manufacture And GETCO Approved Shade on undercoated wall surface to give an even shade. The work included thoroughly brushing/cleaning the surface free from mortar droppings and other foreign matter and also including preparing the surface even and smooth by sand paper or any other approved method.

Surface shall be applied with smoothing coat of paint, putty, before application of paint. Surface of shall be applied first coat of APOCOLITE APEX or its equip. ACRYLIC EXTERIOR paint after putty has dried and surface is smoothes by applying fine sand paper. Second coat of paint shall be after first coat had dried. Surface shall be rolled with 3 layers to get uniformity.

Sample of painting work shall be first prepared and got approved before taking further work.

Manufacturer’s instructions shall be followed while applying the paint.

Item Providing & applying 3 coats of ACID/ALKALI resisting paint of approved shade & make to wall, ceiling including filling putty smoothing the surfaces scaffolding etc. complete as directed by E.I.C.

Acid/Alkali resisting painting of approved brand and tint be got approved before, collecting. Surface shall be cleaned as described in item of distempering. One coat of primer shall be applied to the surface, after same is made even with putty application.

Primer shall be of same manufacture and suitable for Acid. Alkali resisting paint. Acid & Alkali resisting paint shall be applied in 2 to 3 coats as per item, with either brush or with spray painting. Uniform painting on surface shall be done & got approved. manufacturers instructions regarding use of paint be followed.

Item Dismantling tiles or stone floors / walls laid in mortar including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift.

The flooring shall be removed carefully so as to have minimum damage to tiles or Kotah stones. Removed usable tiles or Kotah stones shall be stacked separately as directed. The base concrete of the flooring shall be removed completely and disposed at the place shown. The usable materials are to be credited to dep't. Store.

The payment shall be made on the actual floor area removed in square meter. Rate quoted shall be inclusive of all tools, tackles, labour, transportation etc.

Item Removing and scraping of old deteriorated plaster of any thickness from wall / R.C.C member including stacking of serviceable material and disposal of unserviceable from site of work with all lead and lift.

1. As per speciation & instruction of EIC
2. The rate shall be for a unit of one Smt.

Item Providing & laying water proofing treatment on terrace including applying neat cement slurry 2.75 kg./sq.mt. on cement admixed with water proofing component after cleaning the surface, Laying cement concrete with brick bat 75mm to 100mm thick with 50% of C.M. 1:5 admixed with water proofing component over 20mm thick layer of C.M. 1:5 to required slope including ramming at junction of wall and slab, after two days of proper curing applying a second coat of cement slurry, finished the surface with 20mm thick C.M. 1:4 china mosaic flooring and finally finishing the surface with trowel with white cement slurry after finishing the whole terrace shall be flooded 75mm deep with water for a period of two weeks.300 mm vata on wall shall be done. The measurements shall be given only for clear area of terrace excluding the area of vatta. The contractor shall submit performance guarantee of the waterproofing item at the rate of 20% of cost of item of work order in form of DD/BG for a period of 5 years from actual date of completion of work on stamp paper of appropriate value in approved format of GETCO.

The work is carried out using brick bats of assorted sizes with cement mortar 1:4 ratio and special water proofing compound. The work is to be carried out as per good practice and as per item description. The complete drawing of terrace area specified ridges, valleys, gradient and its exact location shall be prepared in advance. The same shall has to be got approved by EIC. The work is to be carried out so as to facilitate complete draining of rain water. Necessary basins shall be constructed at the mouth of spout or rain water pipes. The contractor shall have to give the pond test by filling 8" depth of water on the treated surface by blocking the spout for 7 days.

"For Water Proofing Treatment: -

The contractor shall submit performance guarantee of the waterproofing item at the rate of 20 % of cost of item of work order in the form of FDR of Schedule Bank /Nationalized Bank in favor of GETCO (A/c Agency) for a period of 5 years from actual date of completion of work on non-judicial stamp paper of appropriate value in approved format of GETCO. In the event of unsatisfactory performance of Waterproofing work, the agency shall carry out necessary remedial/rectification works that may be necessary in the opinion of GETCO at no extra cost, failing which FDR shall be encased by GETCO. The FDR shall be released only after satisfactory completion of performance period of 5 years."

Item Providing form work of ply wood shuttering so as to give a smooth exposed finish including centering (adjustable tubular steel supports). Shuttering strutting and propping etc. for any

height of propping and centering below supporting floor to ceiling , and removal of the same for reinforced concrete and plain concrete. for Footings , foundations and pedestal

1.0 Materials

1.1 The shuttering to be provided shall be of plywood make and shall conform to IS4990:2011.

1.2 The dimensions of scantlings and battens shall conform to the design. The strength of the wood shall not be less than that assumed in the design.

2.0 Workmanship

2.1 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.

2.2 Cleaning and Treatment of forms

2.2.1 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 wetted 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.

2.3 Stripping time

2.3.1 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 soffits. (Props left under)	7 days.
(c)	Removal of props slabs	
(i)	Slabs spanning up to 4.5 m	7 days.
(ii)	Spanning over 4.5 m	14 days.
(d)	Removal of props to beams and Arches	
(i)	Spanning up to 6 m	14 days
(ii)	Spanning over 6 m	21 days

2.4 Procedure when removing the form work

2.4.1 All form work shall be removed without such shock or vibrations as would damage the reinforced concrete surface. Before the soffit form work and struts are removed, the soffits and the concrete surface shall be exposed where necessary in order to ascertain that the concrete has sufficiently hardened.

2.5 Centering

2.5.1 The centering to be provided shall be got approved. It shall between sufficiently strong to ensure absolute safety 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 to be removed.

2.5.2 The props of centering shall be provided on firm foundation or base of sufficient strength to carry the loads without any settlement.

2.5.3 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.

2.6 Scaffolding

2.6.1 All scaffolding, hoisting arrangement and ladders, etc. required for the facilitating of concreting shall be provided and removed on completion of 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 to act and shall be subject to the approval of the Engineer - in – Charge. However, contractor shall be solely responsible for the safety of the scaffolding, hoisting arrangement, ladders, work and workman etc.

2.6.2 The scaffolding, hoisting arrangements and ladders shall allow easy approach to the work spot and afford easy inspection.

2.6.3 The rate is applicable to all conditions of working and any height. The rate shall include the cost of materials and labour for various operations involved such as:

(a) Splayed edges, notching allowance for over laps and passing at angles, battens centering, shuttering, strutting, propping, bolting, nailing, wedging, easing, striking and removal.

(b) Filleting to form stop chamfered edges or splayed external angles not exceeding 20mm width to beams, columns and the like.

(c) Temporary openings in the forms for pouring concrete, if required, removing rubbish etc.

(d) Dressing with oil to prevent adhesion of concrete with shuttering, and

(e) Raking or circular cutting.

2.7 Re-use

2.7.1 Before re-use, all forms shall be inspected by the Engineer - in - Charge and their suitability ascertained. The forms shall be scarred, cleaned, and joints gone over, repaired where required. Inside surface shall be retreated adhesion of concrete.

3.0 Mode of measurements and payment

3.1 Form work shall be measured as the area in square metres of shuttering in contact with concrete except in the case of inclined member and portion of curved profile and upper side in which case only area of underside shall be measured for payment.

3.2 Form work to secondary beams shall be measured up to the sides of main beams but no deduction shall be made from the form work of the main beam at the inter section point. No deduction shall be made from the form work of a column at inter section of beams.

3.3 The rate is for the completed item.

3.4 The rate shall be for a unit of one square meter.

Item Dismantling the R.C.C./CC work for foundation and building work and throwing / Stacking the dismantled stuff as directed upto any lead, dressing etc.complete as directed by E.I.C.

Area of plain cement or R.C.C. Work to be dismantled shall be separated by providing necessary barricade and providing watchmen to avoid any accident in the area. All precaution shall be taken to see that the structures, machinery equipment in the area are not damaged. If desired by authority, all equipment, machinery etc. shall be covered with tarpaulin or plastic covering without any extra cost. Rate quoted for the item shall be inclusive of providing all labour, tools, tackles and scaffolding, wherever required. Payment shall be made for actual cu. Meter of concrete dismantled as per drawing of as directed or details furnished at site. (Area shall be cleaned every day when work is to be stopped or even when work is in progress during day, if required in case of plant area or other places.

Item Demolition of Brick work and stone/bela/rubble masonry including staking of serviceable materials & disposal of unserviceable materials with all lead and lift etc. complete as directed by E.I.C. - In Cement Mortar

Area of plain cement and R.C.C. work to be dismantled, shall be separated by providing necessary barricade and providing watchmen to avoid any accident in the area.

All precaution shall be taken to see that the structures, machinery, equipment in the area are not damaged. If desired by authority, all equipment's, machinery etc., shall be covered with tarpaulin or plastic covering without any extra cost.

Rate quoted for the item shall be inclusive of providing all labour, tools, tackles and scaffolding, wherever required. Payment shall be made for actual cu meter of concrete dismantled as per drawing of as directed or details furnished at site. (Area shall be cleaned every day, when work is to be stopped or even when work is in progress during day, if required, In case of plant area or other places)

Area to be dismantled shall be marked with paint and got approved before starting the work. Wherever opening is to be made in masonry work, sides of the opening made, shall be well finished with cement mortar 1: 3 to line and level as instructed. Rate quoted is inclusive of this.

Item Providing and fabricating and erecting GI work Welded angle posts, racks & trays for cable trench using structural steel angels and flats, sheets etc. of approved steel manufacturer as per drawing & design including cutting, welding & fixing hold fast in wall with C.C. & with hot deep galvanized as per IS-2633/72 and 209 of 1966 or latest amendment ect & make etc.

completed as directed by EIC.(All materials required for the work to be brought by the contractor).

GI Angle shall be fabricated as per detailed drawing supplied and as described in the item. General specification of fabrication shall be followed. Necessary holes for providing barbed wire on top shall be provided. Angle shall be fabricated as per drawing. Angle shall be erected in line & level at the center to center distance given on the drawing or as directed at site.

Angle shall be welded with holdfasts, anchor at bottom to have fixing with concrete work done at base. MS flats / pieces 150mm long shall be welded at top & bottom on two sides as shown in the drawing with 18mm dia slotted holes to receive the bolts required for fixing chain link fencing panel. Frame work shall be hot dip galvanized as per IS 2633 /72 and 209 of 1966 or latest amendment and as directed. Fabrication work shall be as per drawing and as directed on site. Rate quoted shall be for supply and fabrication of GI Angle with GI flat necessary bolts, nuts, washers, cutting bending, welding, erection in line & level & plumb, got dip galvanizing, etc. complete. Payment shall be made on number basis.

Item Surface preparation including removal of all disintegrated materials, reinforcement in any, cleaning the concrete surface with metal wire brush, exposing the surface of reinforcement and applying two coat of Alkaline Rust Converter FEOVERT or equivalent @ 10 m2/Ltr/Coat followed by one coat of Migratory Corrosion inhibitor EPCO KP - 100 or equivalent @ 4 m2/ Ltr/ Coat to arrest the corrosion in embedded concrete.(The rust converter shall be alkaline in nature and its PH shall be around 8.5) The Migratory Corrosion inhibitor should have been tested at premier research institute like IIT and shall have a successful case history in Indian tropical condition for 3 years. Applying two coats of interpenetrating polymer network IPNET - RB (CBRI Technology) @ 5 m2 /Ltr /Co at rebar coating to the exposed reinforcement as per manufacture specification & engineer's instruction, item Includes transportation of men, material, testing and use of materials as per manufacturer specification & required machineries, scaffolding, making working platform on and around the structure / tower marooned in creek having tidal effect. Cleaning of exposed concrete surface of sticking material including loose and foreign material by sand blasting with coarse sand followed by and including cleaning with oil free air blast

1. As per speciation & instruction of EIC
2. The rate shall be for a unit of one Smt.

Item Cutting out cracks of roof terrace to V- section , cleaning out, wetting , grouting with cement and sand slurry 1:3 (1-cement 3-sand).

1. As per speciation & instruction of EIC
2. The rate shall be for a unit of one Rmt.

Item Providing and fixing GI weld mesh of size 75mm x 74mm x 12 Gauge coated with epoxy based zinc rich primer to the existing concrete surface of beam, slab, column etc. including drilling 12mm dia holes, fixing of 10mm dia MS Galvanized shear connectors by approved polyester resin with all cost of material, labor as directed by EIC.

1. As per speciation & instruction of EIC.
2. The rate shall be for a unit of one Smt.

Item Repairing of damaged concrete spelled out portion / honeycombed areas repaired by ready mixed Thixotropic mortar EMACO S488 CT (Krishna Conchem - Repatch 45T/ Master Emaco S 348) or its equivalent as specified by manufacture - upto 50mm thickness. The work is to be carried out at all heights with scaffolding, Tools, Tackels, required materails labour etc.complete as directed by the in-charge engineer.

1. As per speciation & instruction of EIC.
2. The rate shall be for a unit of one Smt.

Item Providing & fixing corrosion resistant steel (CRS) bars coated with fusion boanded epoxy paint of FE 500/500D/550/550D confirmed as per IS 1786 for RCC work including bending, binding with 16 gauge annealed wire, of bars as per is requirement if necessary and placing in position etc. completed for up to floor two level

1. As per speciation & instruction of EIC.
2. The rate shall be for a unit of one Kg.

Item Providing and fixing of shear keys through the mechanical high performance steel expansion anchor bolts M16x 150mm long version of corrosion resistance with fire resistance as per specifications and drawings including drilling holes of required Dia, cleaning and fixing in structural RCC elements to be repaired/strengthened specially to columns and Beams for properly binding/confining additional reinforcement with existing reinforcement and concrete to have complete monolithic action inclusive of all labour, materials, equipments etc. complete as per specification direction and approval of Engineer-in-charge.

1. As per speciation & instruction of EIC.
2. The rate shall be for a unit of Number.

Note: - Any other item detail description if not in the tender which item in Schedule – B they will be carried out as per item description & engineer in charge with competent authority instruction and Also follow civil work standard as per Indian Standard code of practice.