सत्यमेव जयते

भारत सरकार
संचार मंत्रालय
भारतीय डाक विभाग

Government of India
Ministry of Communication
Department of Post

भारतीय डाक
India Post

PERCENTAGE RATE e-TENDER &CONTRACT

FOR THE WORK OF

Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa

NIT

N.I.T. No.: 04/PCD(M)/2026-27

Estimated Cost: Civil Component- 730519

Total Estimated cost: –730519

Earnest Money: 14,610

Period of completion: 45 Days
Last date and time of submission of bid: Upto 11:30 AM on 25.05.2026

This NIT containing pages as per Index, amounting to Rs. 730519 **Only is hereby approved.**

Executive Engineer(C),
Postal Civil Division,
Sion

NIT Amounting to Rs.730519 (Rupees Seven Lakh Thirty Thousand Five Hundred Nineteen Only) is approved.

Executive Engineer(C),
Postal Civil Division,
Sion

ABSTRACT OF COST

Name of Work: ***Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa***

Sl. No.	Details of Sub-Head	Amount (in Rupees)
1	Civil Component	Rs. 730519
	Total	Rs.730519

This NIT containing pages as per Index, amounting to Rs.730519 (Rupees Seven Lakh Thirty Thousand Five Hundred Nineteen Only) is hereby approved.

Executive Engineer(C),
Postal Civil Division,
Sion

INFORMATION AND INSTRUCTIONS FOR EXECUTIVE ENGINEER FOR E-TENDERING

1. The Executive Engineer of all Postal Civil/Electrical Divisions should receive the original EMD for tender of other division.
2. The Executive Engineer at the time of issue of NIT shall also fill and upload the following prescribed format of receipt of deposition of original EMD along with NIT:

FORMAT FOR RECEIPT OF DEPOSITION OF ORIGINAL EMD

Receipt of deposition of original EMD

Receipt No. Dated:

1. Name of work: ***Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa***
2. NIT No.: ***04/PCD(M)/2026-27***
3. Estimated Cost : **7,30,519**
4. Amount of Earnest Money Deposit **: 14,610**
5. Last date of submission of bid : Upto 11:30 AM on 25.05.2026

(04/PCD(M)/2026-27 To be filled by EE(C) at the time of issue of NIT and uploaded along with NIT)

1.	Name of Contractor	:	.....#
2.	Form of EMD	:	.....#
3.	Amount of Earnest Money Deposit	:	.....#
4.	Date of submission of EMD	:	.....#

Signature, Name and Designationof EMD receiving Officer
(EE/A0/AE/AAO) along with Office Stamp

(# To be filled by EMD receiving EE)

3. The Executive Engineer receiving EMD in original form shall examine the EMD deposited by the bidder and shall issue a receipt of deposition of earnest money to the agency in a given format uploaded by tender inviting EE. The receipt may be issued by the AE/AAO.
4. The Executive Engineer receiving original EMD shall also intimate tender inviting Executive Engineer about deposition of EMD by the agency by e-mail/ Fax/ telephonically.
5. The original EMD receiving Executive Engineer shall release the EMD after verification from the e-tendering portal website https://eprocure.gov.in/eprocure/appin Awarded Tenders Section >> after Clicking the Result tab for the tender ID. Or a certificate to be obtained from the tender inviting Executive Engineer that the particular contractor is not L-1 tenderer and work has been awarded.
6. The tender inviting Executive Engineer will call for original EMD of the L1 tenderer from EMD receiving Executive Engineer immediately.
7. List of Executive Engineers along with address where EMD can be deposited is enclosed as Annexure-XL

List of Executive Engineers with addressAnnexure-XL

Executive Engineer (C) Postal Civil Division, GPO Building , 3rd floor, Ambala-133001 0171-2645721	Executive Engineer (C) Postal Civil Division, R.N. Compound, Opp. Raj Bhawan, Shillong-793001, 0364 - 2222506	Executive Engineer (C) Postal Civil Division, 2nd Floor, HPO Building, M.G. Road, Jubilee Chowk, Rajkot-360001 0821-2223795
Executive Engineer (C) Postal Civil Division, PO Building, 1st Floor, Summer Hill, Shimla- 171005 0177-2832943	Executive Engineer (C) Postal Civil Division, 1st floor R.T.NAGAR, HPO Building, Bengaluru-560 032, 080- 23332025, 23330720	Executive Engineer (C) Postal Civil Division, 1st floor, Opp. PLI Section, CPMG Campus, Sardar Patel Marg, Jaipur-302007 0141-2365941
Executive Engineer (C) Postal Civil Division,1st Floor, OldHPO building, Civil Lines, Prayagraj(U.P) - 211001, 0532- 2622151	Executive Engineer (C) Postal Civil Division, Old RO Bldg, Sapthapur, Dharwad-580001, 0836 - 2445252	Executive Engineer (C) Postal Civil Division,5th Floor, C.T.T. Nagar,HPO Building, Bhopal-462003 0755- 2779149
Executive Engineer (C) Postal Civil Division, 2nd floor, PO Bldg., Sector-C, Aliganj, Lucknow-226001, 0522 – 2335165	Executive Engineer (C) Postal Civil Division,No. 5, Ethiraj Salai, 2nd floor, Chennai-600008, 044- 28203435, 28275525	Executive Engineer (C) Postal Civil Division-II,Yogayog Bhawan, 2nd Floor, P-36, CR-Avenue, Kolkata-700012, 033 - 22121189
Executive Engineer (C) Postal Civil Division, Quarter no. 13&16, Postal Colony, Roop Nagar, Jammu-180013, 0191- 2592924	Executive Engineer (C) Postal Civil Division, Manacaud P.O., Trivandrum-695009, 0471 – 2466748	Executive Engineer (E) Postal Electrical Division-I, Meghdoot Bhawan,New Delhi-110001, 011-23514049
Executive Engineer (C) Postal Civil Division, 10th Floor, MeghdootBhawan,New Delhi-110001, 011- 23628363	Executive Engineer (C) Postal Civil Division, 3rd Floor, PO Building, Sion, Mumbai-400022, 022 – 24013900	Executive Engineer (E) Postal Electrical Division, Yogayog Bhawan, P-36, CR-Avenue, Kolkata-700012, 033-22120646, 22120637
Executive Engineer (C) Postal Civil Division, Meghdoot Bhawan, 5th Floor, GPO Compound, Patna-800001, 0612 – 2223936	Executive Engineer (C) Postal Civil Division, 2nd Floor, Parvati PO Bldg, Parvati, Pune-411009 020-25817763	Executive Engineer (E) Postal Electrical Division, PO Building, Sector-C, Aliganj, Lucknow-226001 0522 – 2336053
Executive Engineer (C) Postal Civil Division, 3rd floor, Postal Store Depot building, 3rd Floor, satyanagar, Bhubaneswar - 751 007 0674 – 2570961/62	Executive Engineer (C) Postal Civil Division,Akashwani Chowk, DA (P) Compound, Civil Lines, Nagpur-440001 0712-2540368	Executive Engineer (E) Postal Electrical Division Basavanagudi HPO Building, 1sr Floor, Bangalore-560 004 080-26676802
Executive Engineer (C) Postal Civil Division-I, Yogayog Bhawan, 3rdFloor, P-36, CR-Avenue, Kolkata-700012, 033 – 29631441	Executive Engineer (C) Postal Civil Division, Quarter No. C-III/1&2, Postal Staff Qtrs, Meghdootnagar, Beerappagadda, Uppal, Hyderabad -500 039 040- 29563659 / 23463910	Executive Engineer (E) Postal Electrical Division 3rd Floor, PO Building Mumbai-400022, 022 – 24044164
Executive Engineer (C) Postal Civil Division-II, Meghdoot Bhawan Complex, 1st Floor, Amenity Block, Pan Bazar, Guwahati-781001 0361 - 2542679	Executive Engineer (C) Postal Civil Division,2nd floor, Beharampur PO building, Ahmedabad-380022 079- 25504055	Executive Engineer (E) Postal Electrical Division CSO, Gandhi Nagar,Jaipur-302015 0141-2708841

Name of Work:- ***Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa***

It is certified that this document contains Four parts i.e. Part A, Part B, Part-C & Part-D containing pages No.1 to Onwards.

Executive Engineer (Civil)
Postal Civil Division,
Sion

ELIGIBILITY CONDITION

PART-A

Name of work:-***Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa***

INDEX- Volume I of Part A

Certified that this tender Document Volume-I of part A contains total pages from 8 to 28.

Executive Engineer (Civil)
Postal Civil Division,
Sion

This tender document has been published on the portal https://eprocure.gov.in/eprocure/app. The bidders are required to submit soft copies of their bids electronically on the Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the Portal, prepare their bids in accordance with the requirements and submitting their bids online on the Portal. More information useful for submitting online bids on the Portal may be downloaded from "Download" section available on home page on https://eprocure.gov.in/eprocure/app.

REGISTRATION

1) Bidders are required to enroll on the e-tendering portal (URL:https://eprocure.gov.in/eprocure/app) by clicking on the link "Register" on the e-tendering portal.
2) As part of the enrolment process, the bidders will be required to choose a unique username and password for their accounts.
3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the DoP e-tendering portal.
4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class III Certificates with Signing+Encryption key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.
5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
6) Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

1) Bidder can search any tender by clicking on "Live Tender" under search option on Home Page. Once the bidders have selected the tenders they are interested in, they may download the required documents after clicking on "Tender Document".
2) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

1) Bidder should take into account any corrigendum published on the tender document before submitting their bids. Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted.
2) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS /JPEG formats.
3) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such documents (e.g. GST registration copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Document" available to them to upload such documents. These documents may be directly attached from the "My Document" library while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

1) Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

3) Bidder has to select the payment option as “offline” to pay the Tender Fee and enter details of DD/any other accepted instrument. Bidder has to select the payment option as required from the drop down to pay the Processing Fee &EMD and enter details of DD/any other accepted instrument.

4) Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the Tender Processing Section, latest by the last date of bid submission or as specified in the tender documents. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time otherwise the Tender will be summarily rejected.

5) The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders. The bidder should see that the bid documents submitted should be free from virus and if the documents could not be opened, due to virus, during tender opening, the bid is liable to be rejected.

6) Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. The price bid has been given as a standard .xlsx format with the tender document, and then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the .xlsx file, open it and complete the unprotected cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the .xlsx file is found to be modified by the bidder, the bid will be rejected.

7) The server time (which is displayed on the bidders’ dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission. The bidders are requested to submit the bids through online e-tendering system to the TIA well before the bid submission end date & time (as per Server System Clock).

8) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening.

9) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

10) Upon the successful and timely submission of bids, the portal will give a successful bid submission acknowledgement copy will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

11) The acknowledgement copyhas to be printed and kept as an acknowledgement of the submission of the bid.

ASSISTANCE TO BIDDERS

1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the TIA i.e. Executive Engineer(C), of concerned Postal Civil Division inviting the tenders.

2) For any technical related queries please call at 24 x 7 Help Desk Number:

- 0120-4001 002,
- 0120-4001 005,
- 0120-4493 395

EMail Support: For any Issues or Clarifications relating to the published tenders, bidders arerequested to contact the respective Tender Inviting Authority

Technical - support-eproc(at)nic(dot)in

Policy Related - cppp-doe(at)nic(dot)in

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR E-TENDERING FORMING PART OF BID DOCUMENT

1. Executive Engineer(Civil), Postal Civil Division, Mumbai on behalf of the President of India invites online percentage rate composite bids from approved and eligible contractors of Department of Posts for the following work

Sr. No.	NIT No.	Name of work & Location	Estimated Cost Put to Tender	Earnest Money	Period of Completion	Last date & time of Submission of bid, EMD, copy of receipt of deposition of original EMD and other documents as specified in the Bid document.	Time and Date of Opening of Eligibility Bid (Technical Bid envelope)	Time Period allowed for submission of originals of all the scanned and uploaded documents as specified in NIT by the lowest bidder
1	2	3	4	5	6	7	8	9
	04/PCD(M)/2026-27	**Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa**	Rs.730519	14,610	45 Days	Upto 11:30 AM on 25.05.2026	Upto 11:30 AM on 26.05.2026	Within a week of opening of the financial bid in the office of tender inviting authority

The contractor submitting the tender should read the schedule of quantities, additional conditions, additional specifications, particular specifications, CPWD- 6 and other terms and conditions given in the NIT and drawings. The bidder should also read the General Conditions of Contract for CPWD Maintenance Works 2023 with up to date correction slips, which is available as Government of India Publications; can also be seen on CPWD web site i.e. www.cpwd.gov.in . However, provisions included in the tender document shall prevail over the provisions contained in the standard form. The contractor should also visit the site of work and acquaint himself with the site conditions before tendering. He should only submit his tender if he considers himself eligible and he is in possession of all the required documents. The following conditions, which already form part of the tender conditions, are specially brought to his notice for compliance while submitting the tender online. They are requested to comply following instructions: -

(A) *Bid with any condition including that of conditional rebates shall be rejected forthwith.*

(B) *The successful bidder shall be required to submit Performance Guarantee of 5% (Five Percent) of the tendered amount within 10days of issue of letter of intent. This period can be further extended by Engineer-in-Charge up to a maximum period of 7 days on the written request of the contractor and with late fee as defined in Schedule-F.*

2. The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.

3. Information and Instructions for bidders posted on website shall form part of bid document.

4. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website https://eprocure.gov.in/eprocure/app free of cost or in the office of the Executive Engineer (C), Postal Civil Division, Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa between hours of 11:00 AM and 4:00 PM from Monday to Friday every day except on Saturday & Sunday and public holidays

5. Applicant has to deposit **Earnest Money** of RS.**14,610** in the form of Treasury Challan or Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt (drawn in favour of **Accounts Officer O/o Executive Engineer (C), Postal Civil Division, Sion payable at Mumbai**or Bank Guarantee including e- Bank Guarantee(for balance amount as prescribed) from any of the Commercial Banks(drawn in favourof **Accounts Officer (C), Postal Civil Division, Sion** shall be scanned and uploaded to the e-tendering website within the period of bid submission. **The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer (Civil/Electrical), Postal Civil/Electrical Division within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT. This receipt shall also be uploaded to the e-tendering website by the intending bidder up to the specified bid submission date and time.**
   But the bid can only be submitted **after deposition oforiginal EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer(Civil/Electrical) Department of Posts within the period of bid submission** and uploading the mandatory scanned documents such as demand draft or pay order or banker's cheque or deposit at call receipt or fixed deposit receipt and bank guarantee of any scheduled bank towards EMD in favour of Accounts Officer O/o Executive Engineer as mentioned in NIT, receipt for deposition of original EMD to division office of any Executive Engineer**(Civil/Electrical)**(including NIT issuing EE) Postal **(Civil/Electrical)** Division and other documents as specified. **OR**
   Earnest Money can also be deposited through RTGS/NEFT in the account of Accounts Officer, Postal Civil Division, Sion, **having account no. 31863223436 with State Bank of India Matunga Branch(Mumbai), (IFSC Code SBIN0005350). The unique transaction reference (UTR) of RTGS/NEFT shall have to be uploaded by the bidder in the e-tendering system by the prescribed date. The Executive Engineer concerned will get earnest money verified from the Bank based on the unique transaction reference number against each RTGS/NEFT payment before the tenders are opened.**

   Note: -The bidder will use one UTR for one work only. In case it is found that he has used one UTR number for different bids, all the bids submitted with the common UTR will be rejected and the bidder shall be debarred from further tendering in the department for one year.

   A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20 Lac, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee of any scheduled bank having validity for **180 days or more** from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.

6. Those contractors not registered on the website mentioned above (CPP portal) are required to get registered before hand. If needed they can be imparted training on online tendering process as per details available on the website.

7. The intending bidder must have valid Class-II/class-III digital signature to submit the tender.

8. Contractor can upload documents in the form of JPG and/or PDF format only.

9. The eligibility bid (Cover 1 on the portal) shall be opened first on due date and time as specified herein above. The time and date of opening of financial bid (Cover 2 on the portal) of contractors qualifying the eligibility bid shall be communicated to them at a later date.

10. The department reserves the right to reject any prospective application without assigning any reason.

11. Contractor must ensure to quote rate in the prescribed column(s) meant for quoting rate in figures appears in pink colour and the moment rate is entered, it turns sky blue. If any cell is left blank and no

rate is quoted by the bidder, rate of such item shall be treated as "0" (ZERO).
However, if a bidder quotes **'NIL'** rates against each item in item rate tender or does not quote anypercentage above/below on the total amount of the tender or any section / sub head in percentagerate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

List of Documents to be scanned and uploaded within the period of bid submission:

i	Scanned copy of **Treasury Challan/ Demand Draft / Pay Order or Banker's Cheque / Fixed Deposit Receipts/ Deposit at Call Receipt / Bank Guarantee** including e- Bank Guarantee(for balance amount as prescribed) of any scheduled bank against **EMD** as prescribed/Scanned copy of unique transaction reference **(UTR) ofRTGS/NEFT** in case the earnest money has been deposited through RTGS/NEFT in the Account of tender inviting division.
ii	Copy of **receipt for deposition of original EMD** to division office of any Executive Engineer (Civil)/(Electrical) [including NIT issuing EE] Postal Civil Division. OR an **Undertaking** that 'this document is not required' if earnest money has been deposited through RTGS/NEFT in Account of tender inviting division.
iii	Copy of **Enlistment Order** issued by Department of Post only
vii	**GST registration Certificate**, if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following under taking along with other bid documents. *"If work is awarded to me, I/we shall obtain GST registration Certificate as applicable within one month from the date of receipt of award letter or before release of any payment by the Department, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by the department or GST department in this regard."*

b) **COVER-2** (FINANCIAL BID) ENVELOPE shall contain

I	**Tender Document** in pdf format (XXXXX.pdf file) digitally signed.
II	Excel file (**Performa for quoting percentage**) inxlsx format (XXXXX.xlsx) file duly filled & digitally signed as per as per requirements of e-procurement module.

Executive Engineer (Civil)
Postal Civil Division,
Sion

N.I.T.No. **04/PCD(M)/2026-27** Date : **15.05.2026**

PERCENTAGE RATE NIT FOR e-TENDERING

1. Executive Engineer(Civil), Postal Civil Division, Mumbai on behalf of the President of India invites online percentage rate composite bids from approved and eligible contractors of Department of Posts for the work of "**Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa**"

The enlistment of the contractors should be valid on the last date of submission of bids.
In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.

1.1 The work is estimated to cost **7,30,519.** This estimate, however, is given merely as a rough guide.

1.1.1. The authority competent to approve NIT for the combined cost (If any) and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids. For composite bid, besides indicating the combined estimated cost put to bid, should clearly indicate the estimated cost of each component separately. The eligibility of bidders will correspond to the combined estimated cost of different components put to bid.

1.2 Intending bidders is eligible to submit the bid provided he has definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below: -

Criteria of eligibility for submission of bid documents

1. The Bidder shall be enlisted in Department of Posts.

2. Agreement shall be drawn with the successful bidder on prescribed Form No. CPWD 7 (or other Standard Form as mentioned) which is available as a Govt. of India Publicationand also available on website www.cpwd.gov.in with up to date correction slips. Bidders shall quote his rates as pervarious terms and conditions of the said form which will form part of the agreement.

3. The time allowed for carrying out the work will be 45 Days from the date of startas defined in schedule 'F' or from the first date of handing over of the site, whichever islater, in accordance with the phasing, if any, indicated in the bid documents.

4. (i) The site for the work is available.

or

The site for the work shall be made available in parts as specified below: -

.....

(ii) The architectural and structural drawing for the work is available

or

The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submittedby the contractor after award of work.

5. The bid document consisting of plans, specifications, the schedule of quantities of varioustypes of items to be executed and the set of terms and conditions of the contract to becomplied with and other necessary documents except Standard General Conditions ofContract Form can be seen on website https://eprocure.gov.in/eprocure/appfree of cost or in the office of the Executive Engineer (C), Postal Civil Division, Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa between hours of 11:00 AM and 4:00 PM from Monday to Friday every day except on Saturday & Sunday and public holidays

6. After submission of the bid, the contractor can re-submit revised bid any number of times or withdraw it before last date and time of submission of bid as notified. No post-tender modification is allowed by the tenderers except through negotiations, if required. In case, any tenderer does so, the tender will be rejected and the tenderer will be debarred for future tendering in DoP for two years (In case of DoP enlisted contractor) and by the concerned CE/SE (In case of non enlisted contractor).

7. (a) Applicant has to deposit **Earnest Money** of **14,610** in the form of Treasury Challan or Demand Draft or Pay order or Banker's Cheque or Deposit at Call Receipt or Fixed Deposit Receipt (drawn in favour of **Accounts Officer O/o Executive Engineer (C), Postal Civil Division, Sion payable at Mumbai** or Bank Guarantee including e- Bank Guarantee(for balance amount as prescribed) from any of the Commercial Banks(drawn in favourof Accounts Officer, Postal Civil Division, **Sion,Mumbai** shall bescanned and uploaded to the e-tendering website within the period of bid submission. **The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer (Civil/Electrical) Postal Civil/Electrical Division within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT. This receipt shall also be uploaded to the e-tendering website by the intending bidder up to the specified bid submission date and time.**

But the bid can only be submitted **after deposition oforiginal EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer(Civil/Electrical) Department of Posts within the period of bid submission** and uploading the mandatory scanned documents such as demand draft or pay order or banker's cheque or deposit at call receipt or fixed deposit receipt and bank guarantee of any scheduled bank towards EMD in favour of Accounts Officer O/o Executive Engineer as mentioned in NIT, receipt for deposition of original EMD to division office of any Executive Engineer**(Civil/Electrical)**(including NIT issuing EE) Postal **(Civil/Electrical)** Division and other documents as specified. **OR**

Earnest Money can also be deposited through RTGS/NEFT in the account of Accounts Officer Postal Civil Division, Mumbai, **having account no. 31863223436 with State Bank of India Matunga Branch(Mumbai), (IFSC Code SBIN0005350). The unique transaction reference (UTR) of RTGS/NEFT shall have to be uploaded by the bidder in the e-tendering system by the prescribed date. The Executive Engineer concerned will get earnest money verified from the Bank based on the unique transaction reference number against each RTGS/NEFT payment before the tenders are opened.**

Note: -The bidder will use one UTR for one work only. In case it is found that he has used one UTR number for different tenders, all the tenders submitted by him will be rejected and he debarred from further tendering in the department for one year.

A part of earnest money is acceptable in the form of bank guarantee also. In such case, **minimum 50% of earnest money or Rs. 20 Lac,** whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee of any scheduled bank having validity for **180 days or more** from the last date of submission of tender, which is to be scanned and uploaded by the intending bidders.

The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier.

(b) Copy of Enlistment Order and other documents as specified in the notice inviting e- tender shall be scanned and uploaded on the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in e- tender notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority. Online bid documents submitted by intending bidders shall be opened only of those bidders, who has deposited EMD with any division of Postal and other documents scanned and uploaded are found in order.

(c) The bid submitted shall be opened at Upto 11:30 AM on 26.05.2026.

8. The bid submitted shall become invalid if:

(i) The bidder is found ineligible.

(ii) The bidder does not upload scanned copies of all the documents stipulated in the bid document.

(iii) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of bid opening authority.

(iv) If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.

9. The contractor whose bid is accepted will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in schedule E and within the period specified in Schedule F. This guarantee shall be in the form of Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any of the Commercial Banks in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee.

The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code, if applicable, and also ensure the compliance of aforesaid provisions by the sub-contractors, if engaged by the contractor, within the period specified in Schedule F.

10. The description of the work is as follows **Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa**

Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

11. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

12. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

13. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.

14. The contractor shall not be permitted to bid for works in the Postal Civil Circle responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Department of Posts or in the Ministry of Communications. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.

15. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for

a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.

16. The bids for the work shall remain open for acceptance for a period of 75 (seventy five) days from the date of opening of bid.

Further

(i). If any tenderer withdraws his tender within 7 days after last date and time (24 hrs basis) of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not

(ii) If any tenderer withdraws his tender after expiry of 7 days after last date and time (24 hrs basis) of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.

(iii) Withdrawl of the tender, by the tenderer, shall only be made through e-tender portal. Any other method ie through letter/ e-mail etc. shall not be considered.

(iv) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.

17. This notice inviting Bid shall form a part of the contract document. The successful bidder/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of: -

(a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.

(b) Standard C.P.W.D. Form 7/8 or other Standard C.P.W.D. Form as applicable.

18. ~~**For Composite Bids**~~

~~18.1.1 The Executive Engineer in charge of the major component will call bids for thecomposite work. The Earnest Money will be fixed withrespect to the combined estimated cost put to tender for the composite bid.~~

~~18.1.2 The bid document will include following four components:~~

~~Part A: CPWD 6, CPWD 7/8 including schedule A to F for the major componentof the work, Standard General Conditions of Contract for CPWD 2023 as amended/modified up to Date.~~

~~Part B: General / specific conditions,specifications etc.~~

~~Part C: Schedule A to F for minor component of the work (competent authority under clause 2 and clause 5 shall be same authority as mentioned in schedule A to F for major components), General/specific conditions, specifications etc.~~

~~Part D: schedule of quantities applicable to major and minor component of the work.~~

~~18.1.3 The bidders must associate himself/herself, with agencies as per NIT conditions.~~

~~18.1.4 The eligible bidders shall quoterates for all items of major component as well as for all items of minor components of work.~~

~~18.1.5 After acceptance of the bid by competent authority, the EE in charge of major component of the work shall issue letter of award on behalf of the President of India. After the work is awarded, the main contractor will have to enter into one agreement with EE incharge of major component and has also to sign two or more copies of agreement depending upon number of EE's incharge of minor components. One such signed set of agreement shall be handed over to EE incharge of minor component(s).~~

~~EE of major component will operate Part A, Part B and Part D of the agreement.~~

~~EE incharge of minor component(s) shall operate Part C and Part D alongwith Part A of the agreement.~~

~~18.1.6 Entire work under the scope of composite bid including major and all minor components shall~~

~~be executed under one agreement.~~

~~18.1.7 Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works.~~

~~18.1.8 The main contractor has to associate agencies for specialized component(s)/minor component conforming to eligibility criteria as defined in the bid document and has to submit detail of such agency(s) to Engineer-in-Charge of relevant component(s) within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-Charge of relevant component(s).~~

~~18.1.9 In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-Charge of relevant specialized component(s).~~

~~The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-Charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.~~

~~18.1.10 The main contractor has to enter into MoU with agency(s) associated by him. Copy of such MoU shall be submitted to EE in charge of each relevant component as well as to EE-in-charge of major component. In case of change of associate contractor, the main agency(s) has to enter into MoU/agreement with the new contractor associated by him.~~

~~18.1.11 Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer-in-Charge of the discipline of minor component directly to the main contractor. The CMB shall be maintained independently by Engineer-in-Charge of major and minor components.~~

~~18.1.12A The composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by Engineer-in-Charge of major component after record of completion certificate of all other components.~~

~~18.1.12B Final bill of whole work shall be finalized and paid by the EE of major component. Engineer(s) in charge of minor component(s) will prepare and pass the final bill for their component of work and pass on the same to the EE of major component for including in the final bill for composite contract.~~

19. ~~**Integrity Pact:** The contractor shall download the Integrity Pact, which is a part of tender documents, affix his signature in the presence of a witness, and upload the same while submitting online bids for all works of estimated cost put to tender equal or more than the threshold value given in Schedule F. In the event of his failure to sign and upload the Integrity Pact along with other bid documents, his bid shall be rejected~~.

20. The e-Tenders invited under TWO COVER system on https://eprocure.gov.in/eprocure/app , the 1st (first) ELECTRONIC COVER will be named as ELIGIBILITY BID/QUALIFYING DOCUMENTS & will contain documents of bidder's satisfying the eligibility conditions and 2nd (SECOND) ELECTRONIC COVER will be named as Financial Bid Cover containing TENDER DOCUMENT and WORK SCHEDULE and Performa for quoting the percentage. The bidder shall submit both the covers simultaneously. The TECHNICAL BID/QUALIFYING DOCUMENTS (1stcover) will be evaluated first and thereafter FINANCIAL BID (2ndcover) of eligible bidders shall only be opened. The time and date of opening of financial bid of contractors qualifying the eligibility/technical bid shall be communicated to them later. These envelopes shall contain one set of the following documents: -

COVER 1 (QUALIFYING DOCUMENTS) shall contain the documents as below:

i	Scanned copy of **Treasury Challan/ Demand Draft / Pay Order or Banker's Cheque / Fixed Deposit Receipts/ Deposit at Call Receipt / Bank Guarantee** including e- Bank Guarantee(for balance amount as prescribed) of any scheduled bank against **EMD** as prescribed/Scanned copy of unique transaction reference **(UTR) ofRTGS/NEFT** in case the earnest money has been deposited through RTGS/NEFT in the Account of tender inviting division.
ii	Copy of **receipt for deposition of original EMD** to division office of any Executive Engineer (Civil)/(Electrical) [including NIT issuing EE] Postal Civil Division. OR an **Undertaking** that 'this document is not required' if earnest money has been deposited through RTGS/NEFT in Account of tender inviting division.
iii	Copy of **Enlistment Order** issued by Department of Post only.
iv	**GST registration Certificate**, if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following under taking along with other bid documents. *"If work is awarded to me, I/we shall obtain GST registration Certificate as applicable within one month from the date of receipt of award letter or before release of any payment by the Department, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by the department or GST department in this regard."*

b) **COVER-2** (FINANCIAL BID) ENVELOPE shall contain

I	**Tender Document** in pdf format (XXXXX.pdf file) digitally signed.
II	Excel file (**Performa for quoting percentage**) inxlsx format (XXXXX.xlsx) file duly filled & digitally signed as per as per requirements of e-procurement module.

21. Receipt of deposition of original EMDReceipt No. _____ dated _____

	Name of work	**Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa**
	NIT No.	04/PCD(M)/2026-27
	Estimated Cost	**7,30,519**
	Amount of Earnest Money Deposit	14,610
	Last date of submission of bid	Upto 11:30 AM on 25.05.2026
	Date and Time of opening of Bid	Upto 11:30 AM on 26.05.2026

Executive Engineer (Civil)
Postal Civil Division,
Sion

SECTION – I: BRIEF PARTICULARS OF THE WORK

1. Salient features of the work for which bids invited are as under:

Sl. No.	Name of Work	Estimated Cost	Period of completion
1.	**Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa**	**730519**	**45 Days**

2. The work is situated at Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa Goa *state* **under the jurisdiction of Executive Engineer (Civil) Postal Civil Division, Mumbai.**

3. **Drawings and Technical Specification: -** Following provisions have been made in this detailed estimate:-

A) Civil Works.

(i) **RCC Work: -**

(ii) **Masonry work: -**

(iii) **Cladding work**: -

(iv) **Wood work and PVC Work:-**

(v) **Steel work:-**

(vi) **Flooring work :-**

(vii) **Finishing work**:-

(viii) **Road Work**:-

(ix) **Water Supply:-**

(x) **Sanitary installation:-**

(xi) **Aluminum work**: -

(xii) **Water Proofing**:-

(xiii) **Tube Well :-**

(xiv) **Sewer Line :-**

(xv) **Rain Water Harvesting :-**

(xvi) **Boundary Wall :-**

(xvii) **Main & Small Shikhar :-**

(xviii) **Miscellaneous work** :-

B) Electrical works :-

(i) Wiring,Fan and Fittings

(ii) Counter Signages.

(iii) Panel, MCB DB, cables, Earthing and Lightening arrestor.

(iv) Compound and gate light

(v) LAN

(vi) CCTV

(vii) Manual Fire alarm System

(viii) Fire Fighting System

(ix) Pump Set

(x) UPS Backup

(xi) Fire Extinguisher

(xii) Solar PV

(xiii) Silent DG Set etc

1.0 GENERAL:

1.1 ~~Letter of transmittal and~~ forms for deciding eligibility are given in **Section – III.**

1.2 All information called for in the enclosed forms should be furnished against the relevant columns in the forms. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. Even if no information is to be provided in a column, **a "nil" or "no such case"** entry should be made in that column. If any particulars / query is not applicable in case of the bidder, it should be stated **as "not applicable".** The bidders are cautioned that not giving complete information called for in the application forms or not giving it in clear terms or making any change in the prescribed forms or deliberately suppressing the information may result in the bidder being summarily disqualified**. Bids made by telegram or telex and those received late will not be entertained**.

1.3 The bid should be type-written. The tenderer should sign each page of the application.

1.4 Overwriting should be avoided. Correction, if any, should be made by neatly crossing out, initialing, dating and rewriting. Pages of the eligibility criteria document are numbered. Additional sheets, if any added by the contractor, should also be numbered by him. They should be submitted as a package.

1.5 References, information and certificates from the respective clients certifying suitability, technical knowledge or capability of the tenderer should be signed by an officer not below the rank of Executive Engineer or equivalent.

1.6 The bidder may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information. No information shall be entertained after submission of eligibility criteria document unless it is called for by the Employer.

2.0 DEFINITIONS

2.1 In this document the following words and expressions have the meaning hereby assigned to them:

2.2 **Employer:** Means the President of India, acting through the Executive Engineer (Civil), Postal Civil Division, **Mumbai**

2.3 **Contractor/ Bidder/ Agency/ Firm/ Applicant:** Means the individual, proprietary firm, firm in partnership, limited company private or public or corporation.

2.4 **Year:** means "Financial Year" unless stated otherwise.

3.0 METHOD OF APPLICATION

3.1 If the bidder is an individual, the application shall be signed by him above his full type written name and current address.

3.2 If the bidder is a proprietary firm, the application shall be signed by the proprietor above his full typewritten name and the full name of his firm with its current address.

3.3 If the bidder is a firm in partnership, the application shall be signed by all the partners of the firm above their full typewritten names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the later case a certified copy of the power of attorney should accompany the application. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the application.

3.4 If the bidder is a limited company or a corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The bidder should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.

4.0 FINAL DECISION MAKING AUTHORITY

The Employer reserves the right to accept or reject any application and to annul the Eligibility Criteria process and reject all applications at any time, without assigning any reason or incurring any liability to the bidders.

5.0 PARTICULAR PROVISIONAL

5.1 The particulars of the work given in Section-I are provisional. They are liable to change and must be considered only as advance information to assist the bidder.

6.0 SITE VISIT

The bidder is advised to visit the site of work, at his own cost, and examine it and its surroundings to himself collect all information that he considers necessary for proper assessment of the prospective assignment.

7.0 **ONE BID PER BIDDER**

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

8.0 **COST INCURRED FOR PREPARATION OF BID**

The bidder shall bear all costs associated with the preparation and submission of his bid, and this office shall in no case be responsible and liable for those costs.

9.0 **AMENDMENT OF BIDDING DOCUMENTS**

This office may modify the bidding documents by issuing addendum, before the dead line for submission of bids.

Any addendum thus issued shall be part of the bidding documents and shall be communicated by way of uploading on the website https://eprocure.gov.in/eprocure/app.

To give prospective bidders reasonable time to take an addendum into account in preparing their bids, this office shall extend as found necessary the deadline for submission of bids.

10.0 **LANGUAGE OF THE BID**

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

11.0 **LATE BIDS**

Bid received by this office after the deadline prescribed, shall not be opened.

12.0 **OPENING OF PRICE BID**

After evaluation of applications, a list of sort listed agencies/ post qualified bidders will be prepared. Thereafter, the financial bids of only the qualified and technically accepted bidders shall be opened at notified time, date and place in presence of qualified bidders or their representatives who intend to be present.

The bid shall remain valid for a period of 75 daysfrom the date of opening of Eligibility bid.

AWARD CRITERIA

13.0 The employer reserves the right, without being liable for any damages or obligation to inform the bidder to:-

(a) Amend the scope and value of contract to the bidder.

(b) Reject any or all the applications without assigning any reason.

14.0 Any effort on the part of the bidder or his agent to exercise influence or to pressurize the employer would result in rejection of his bid. Canvassing of any kind is prohibited.

Signature of Executive Engineer (C)
Postal Civil Division, Mumbai

FORM 'C': DETAILS OF ELIGIBLE SIMILAR NATURE OF WORKS COMPLETED DURING THE LAST SEVEN YEARS ENDING LAST DAY OF THE MONTH PREVIOUS TO THE ONE IN WHICH TENDERS ARE INVITED.

Sl no.	Name of work/ project and location	Owner sponsoring or organization	Cost of work in crore of rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation/Arbitration Casespending/ in progresswith details*	Name and address/ telephone number of officer to whom referencemay be made	Remark
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.

***** Indicate gross amount claimed and amount awarded by the Arbitrator.

Signature of Bidder (s)

FORM 'D': PERFORMANCE REPORT OF WORKS REFERRED TO IN FORM 'C'

1. Name of work/project & location :

2. Scope of Work :

3. Agency/ Organization :

4. Agreement no. :

5. Estimated cost :

6. Tendered cost :

7. Actual Amount of work done :

8. Date of start :

9. Date of completion

(i) Stipulated date of completion

(ii) Actual date of completion

10.

(a)Whether case of levy of compensation for delay has been decided or not? : Yes / No

(b) If decided, amount of compensation levied for delayed completion, if any. :

11.Performance Report :

(i) Quality of work : Outstanding/Very Good/Good/Poor

(ii) Financial soundness : Outstanding/Very Good/Good/Poor

(iii) Technical Proficiency : Outstanding/Very Good/Good/Poor

(iv) Resourcefulness : Outstanding/Very Good/Good/Poor

(v) General Behavior : Outstanding/Very good/Good/Poor

Dated: Executive Engineer or Equivalent

Volume II
Of
PART-A

Certified that this tender Document Volume-II of Part 'A' contains pages from **31to 45p**ages.

Executive Engineer (Civil)
Postal Civil Division, Mumbai

Ministry of Communications, Department of Posts (Civil Wing)

STATE: Maharashtra **Circle : PCC, Mumbai**
BRANCH: Civil **DIVISION: PCD, Mumbai**

PERCENTAGE RATE e-TENDER & CONTRACT FOR WORKS

Tender for the work of: **Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa** To be submitted/uploaded online by **Upto 11:30 AM on 25.05.2026** through website https://eprocure.gov.in/eprocure/app to **Executive Engineer (C), Postal Civil Division, Mumbai**

i) Eligibility bid to be opened online in presence of tenderers who may be present at Upto 11:30 AM on 25.05.2026in the office of **Executive Engineer (C), Postal Civil Division, Mumbai**

T E N D E R

I/We have read and examined the Notice Inviting Tender, Schedule A, B, C, D, E & F, Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, Clauses of Contract, Special Conditions, Schedule of Quantity and other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the President of India within the time specified in Schedule 'F', viz. Schedule of Quantities and in accordance in all respects with the Specifications / Special conditions, Designs, Drawings and instructions in writing as referred to in this tender document and with such materials as are provided for, by and in respects in accordance with, such conditions so far as applicable.

We agree to keep the tender open for **(75) Seventy-five days** from the date of opening of eligibility bid and not to make any modifications in its terms and conditions.

Further, if I/We fail to commence work as specified, I/We agree that President of India or thesuccessors in office shall without prejudice to any other right or remedy available in law, be atliberty to forfeit the said performance guarantee absolutely. The said Performance Guaranteeshall be a guarantee to execute all the works referred to in the tender documents upon the termsand conditions contained or referred to those in excess of that limit at the rates to be determinedin accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

Further, I/We agree that in case of forfeiture of Earnest Money or Performance Guarantee as aforesaid, I/Weshall be debarred for participation in the re-tendering process of the work.

I/We undertake and confirm that eligible similar work(s) has/have not been got executed throughanother contractor on back to back basis. Further that, if such a violation comes to the notice ofDepartment, then I/we shall be debarred for tendering in DoP in future forever. Also, if such aviolation comes to the notice of Department before date of start of work, the Engineer-in-Chargeshall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

I/We hereby declare that I/We shall treat the tender documents drawings and other recordsconnected with the work as secret/confidential documents and shall not communicateinformation/derived

therefrom to any person other than a person to whom I/We am/are authorizedto communicate the same or use the information in any manner prejudicial to the safety of theState.

Dated XX
Witness:XX
Address: XX
……
Occupation: - XX

Signature of Contractor .....
Postal_Address:.....
Telephone No.: ……
Fax:
E-Mail:-

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the President of India for a sum of ..... (Rupees..... .....)

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

i) XXX
ii) XXX
iii) XXX

Signature

Dated: - .....

Executive Engineer (Civil)
Postal Civil Division, Mumbai
For & on behalf of the President of India.

XXX To be filled in by the Executive Engineer
XX To be filled in by the contractor

SCHEDULE 'A'

Schedule of quantities - As per Part D of this document

SCHEDULE 'D'

Extra schedule for specific requirements/ documents for the work, if any.

1. Special conditions - **Page No. 48 to 63of Part B**

2. Particular Specifications. - **Page No.66 to 92of Part B**

3. Annexures - **Page No.93 to 99of Part B**
Form of performance security (Bank Guarantee Bond), Form of earnest money deposit (Bank Guarantee Bond), guarantee bond for water proofing/ sanitary installations/ water supply/ for removal of defects in Stone/ tile work etc.

4. Integrity Pact **Page No. 41 to 45of Part A**

SCHEDULE 'E'

Reference to General Conditions of contract: General Conditions of Contract (Construction)**2023**CPWD works amended up to last date of submission of bids as per applicability in DoP.

1.1 Name of Work: ***Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa***

1.2 Estimated Cost of work : 730519
(i) For Civil component : 730519

1.3 Earnest Money : 14,610
(To be returned after receiving performance guarantee)

1.4 Performance Guarantee :5.00% of tendered value
1.5 Security Deposit : 2.50% of tendered value
(However, performance guarantee @ 2.50% shall be retained as security deposit after completion of the work.)

SCHEDULE 'F':-

General Rules &Directions: -

Officer Inviting Tender	Executive Engineer(C), Postal Civil Division, **Mumbai**
Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with	
Clauses 12.2 & 12.3/12.2(C)	See below under Clause-12

Definitions:-

2(i) Engineer-In-Charge	Executive Engineer (C), PCD, Sion for Civil component. .
2(ii) Accepting Authority	**Superintending Engineer (C), PCC, Mumbai**.

2(iii) Percentage on cost of materials and labour to cover all overheads and profits — 15%

2(iv) Standard Schedule of Rates — Delhi Schedule of Rates **2023 (Civil)** with upto date correction slips

2(v) Department — Department of Posts

2(vi) Standard CPWD Contract Form — GCC **2023** and CPWD Form 7 as amended/ modified up to the last date of submission of bids as applicable in DoP.

Clause-1:

(i) Time allowed for submission of Performance guarantee, programme chart (Time and Progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance. — **10 days**

(ii) Maximum allowable extension with late fee @0.1% per day of the performance guarantee amount beyond the period provided in (i) above — **7 days**

Clause-2:

Authority for fixing compensation: Superintending Engineer (C), Postal Civil Circle,Mumbai

Clause-5:

Number of days from the date of issue of letter of acceptance for reckoning date of start — 10 days

Reference to Mile Stones Refer Para (A) Table of Milestones at **Page Nos.44of Part A**

Time allowed for execution of work — 45 Days

Authority to decide

i. Authority to convey the decision of shifting of Milestone and Extension of time — Executive Engineer (Civil), Postal Civil Division,Mumbai

ii. Authority decide rescheduling of Milestone and Extension of time — Superintending Engineer (Civil) Postal Civil Circle, Mumbai

iii. Shifting of date of start in case of delay in handing over of site. — Superintending Engineer (Civil) Postal Civil Circle, Mumbai

Schedule of handing over of site:

Part	Portion ofsite	Description	Time Period forhanding over reckoned from date of issue of letter of intent.
Part A	**Portionwithout any hindrance**	**Whole site is available**	**7 Days**
Part B	**Portions with encumbrances**		**NIL**
Part C	**Portionsdependent on work of other agencies**		**NIL**

Clause-7:-

Gross work to be done together with net payment/ Adjustment of advances for material collected, — 730519

if any, since the last such payment
for being eligible to interim payment.

Clause-7A:-

Regarding applicability of labour laws: Related to Labour licensee, registration of contractor with EPFO, ESIC and BOCW welfare board i/c Provident Fund — Yes, **Applicable**

No running account bill shall be paid in the work till the applicable labour licenses, registration with EPFO, ESIC, BOCW welfare board i/c Provident Fund Code No. if applicable whatever applicable are submitted by the contractor to the Engineer-in-charge.

Clause 8 A

Authority to decide compensation on account if Contractor fails to submit completion plan. — **Superintending Engineer (Civil), Postal Civil Circle,Mumbai.**

Clause-10A:-

List of testing equipment to be provided by the contractor at site lab. — Refer particular specifications (Civil) At**PageNo.100-102of Part- B.**

Clause-10-B (ii):-

Whether clause 10-B (ii) shall be applicable — **NotApplicable**

Clause-10C:-

Component of labour expressed as percent of value of work — **25 %**

Clause 10 CA: - — **Deleted**

~~Materials covered under this clause:~~	~~Nearest material (other than cement, reinforcement bars and structural steel) for which All India Whole sale Price Index to be followed~~	~~Base Price of the materials covered under 10 CA (___***___(Month), Year)**~~
~~1. *Cement~~	- -	~~PPC = ___***___/- Per MT*~~ ~~OPC =___***____/- Per MT*~~
~~2. Reinforcement bars a) Primary producers~~	- —	~~_____***____/- Per MT**~~
~~3. Structural Steel (Primary producers only) RSJ / Channel sectionsMS Angles / Flats / steel plates.~~	- --	~~_____***____/- Per MT**~~

~~*Includes Cement component used in RMC brought at site from outside approved RMC plants, if any~~
~~** The rates taken are FOR at manufacturer's yard nearest to the work site exclusive of all taxes i.e. **GST** etc. and carriage.~~
*** To be filled by the Executive Engineer (C)

Clause-10-CC:- — **Not Applicable.**

Component of Materials of Civil work (except materials covered under clause 10CA) construction value of work — Xm= 75% Less actual value of cement, reinforcement and structural steel actually consumed in construction (on which 10 CA is applicable)

Component of Labour expressed as %age of total value of Civil work — Y= 25%

Component of POL expressed as %age of total value of Civil work — Nil %

Clause-11:- Specifications to be followed for execution of work — C.P.W.D. Specifications **2019** Vol. I & II with correction slips issued upto last date of submission of bids& relevant BIS Codes.

~~**Clause 12**:~~

12.2 & 12.3/12.2(C) :Deviation limit beyond which

clause 12.2 & 12.3/12.2(c) shall apply for building work in super structure.	**No limit**
12.3	
(i) Deviation limit beyond which clause 12.2 & 12.3/12.2(C) shall apply for foundation works (except items mentioned in earth work Sub-Head in DSR and related items)	**No limit**
(ii) Deviation limit for items in Earth work Sub-head of DSR and related items	**No limit**
Clause-16:-Competent Authority for deciding reduced rates	For Civil Component: Superintending Engineer (Civil) Postal Civil Circle, Mumbai
Clause 18:-List of mandatory machinery, tools & plants	Refer **PageNo. 101**
Clause 19C Authority to decide penalty for each default	SE(C), PCC, Mumbai
Clause 19D Authority to decide penalty for each default	SE(C), PCC, Mumbai
Clause 19G Authority to decide penalty for each default	SE(C), PCC, Mumbai
Clause 19K Authority to decide penalty for each default	SE(C), PCC, Mumbai
Clause-25:-	
a. Conciliator:	Superintending Engineer(C), PCC, Ahmedabad
b. Arbitrator Appointing Authority:	Chief Engineer-I, Dak Bhawan, New Delhi
(iii) Place of arbitration:	As per Arbitration & Conciliation Act.

Clause-32:- Requirement of Technical Representative(s) and Recovery Rates (a) For Civil works:

S. No	Requirement of Technical Staff		Minimum experience(Years)	Designation of TechnicalStaff	Rate of which recovery shall be made from the contractor in the event of not fulfilling provision of Clause 36(i)	
	Qualification	Number			Figures	Words
1	Graduate Engineer or	1	5 (and having experience of one simillar nature of work)	Project manager	Rs. 25,000/- Per month	Rupees Twenty-Five thousand per month
	Diploma Engineer(Civil)	1+1	2 or 5 respectively	Project Planning/quality/billing engineer	Rs. 15,000/- Per month Per person	Rupees Fifteen thousand per month per person

Assistant Engineers retired from Government Services that are holding Diploma will be treated at par with Graduate Engineers.
Diploma holder with minimum 10 years relevant experience with a reputed construction companycan be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

Clause-38-

i) a) Schedule / Statement for determining theoretical quantity of cement & bitumen	As per Delhi Schedule of Rates **2023** with amendments up-to the last date of submission ofbids.
ii) Variations permissible on theoretical quantities.	
(a) Cement	
For works with estimated cost put to tender not more than Rs. 25 lakh.	3% plus/minus.
For works with estimated cost put to tender more than Rs. 25 lakh.	2% plus/minus.
b) Bitumen for all work.	2.5% Plus only and NIL on minus side.
c) Steel Reinforcement and structural steel sections for each diameter, section and category.	2% plus/minus.
d) All other materials.	Nil.

ProvisionofIndependentExternal Monitors

(i) Threshold value (Estimated cost put to tender) at and above which Integrity Pact would be applicable **Rs.3.00crore**.

(ii) Particulars of IEMs appointed:……..**…….

**The present names and addresses of IEMs are given below.

S.NO	NameofIEM	ADDRESS
1	Shri Raj Kumar Singh, IRS (Retd.)	Ex-Member, Customs Excise and Service Tax Appellate Tribunal, New Delhi, 26 Cassia Marg, DLF-2, Gurgaon – 122008, Tel. No. 0124 – 4241100, Email id - mrrajksingh@gmail.com
2	Shri Animesh Chauhan	Former MD & CEO of Oriental Bank of Commerce, Flat No. 948, G Block, 6th Avenue, Gaur City 1, Sector-4, Greater Noida (West), UP - 201009, Email id – animeshchauhan7185@gmail.com

TABLE OF MILESTONE (S)

Name of work: Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa

Time Period allowed for Completion of Work: - 45 Days

S.No.	Milestone Programme	Time Allotted (From date of start)	Amount to be withheld in case of non-achievement of milestone.
1.	1/8th (of the Tendered Amount)	1/4th (of the whole period)	In the event of not achieveing the necessary progress as assessed from the running payments, 1.25%of the tendered value of the work will be withheld for the failure of each milestone.
2.	3/8th (of the Tendered Amount)	1/2 th (of the whole period)	
3.	3/4th (of the Tendered Amount)	3/4th (of the whole period)	
4.	Full Amount	.....Days	

Following changes may be read in the General Conditions of Contract (GCC):

This NIT has been prepared on forms approved and published by DG (Works), CPWD, New Delhi. This work relates to Department of Posts. The word CPWD where it refers to Department may be read as Department of Posts.

Except in:- In the following places and clauses where no modifications are intended:-

i) CPWD safety code.
ii) Clause 11, 19B, 19C, 19G and 19K.
iii) Model rules for protection of health and sanitary arrangement for works employed by CPWD or its contractors.
iv) Central Public Works Department Contractor's Labour Regulations.
v) CPWD – Delhi Schedule of Rates and Specifications.

All reference to:-

i) Additional DG/Special DG of CPWD
ii) CPWD/Public Works Department.
iii) Administrative Head of CPWD
iv) Chief Engineer, CPWD
v) CPWD Circle &
vi) Ministry of Urban Development.

In various clauses shall be taken to mean:-

i) Chief Engineer (Civil), Department of Posts
ii) Department of Posts- Civil Wing
iii) Administrative Head of Department of Posts
iv) Chief Engineer (C), Department of Posts
v) Postal Civil Circle
vi) Ministry of Communications, Department of Posts

GUIDELINES REGARDING APPOINTMENT OF INDEPENDENT EXTERNAL MONITOR IN DEPARTMENT OF POSTS (Vide No. 77/60/2023-GA-DOP (e.F.No. 3128854) dated 21.03.2024))

Clarification regarding appointment of Independent External Monitor in Department of Posts

Department of Postshasconveyedthe approvaltoappoint following officers asIndependentExternal Monitor{IEM)intheDepartmentofPosts.

1. Shri Raj Kumar Singh, IRS (Retd.),Ex-Member, Customs Excise and Service Tax Appellate Tribunal, New Delhi, 26 Cassia Marg, DLF-2, Gurgaon – 122008, Tel. No. 0124 – 4241100, Email id - mrrajksingh@gmail.com

2. Shri Animesh Chauhan, Former MD & CEO of Oriental Bank of Commerce, Flat No. 948, G Block, 6th Avenue, Gaur City 1, Sector- 4, Greater Noida (West), UP- 201009, Email id – animeshchauhan7185@gmail.com

TheScopeofWorkforIEMsintheDepartmentshallbeasunder:-

i. Independent External Monitor (IEM) shall oversee the implementation of Integrity Pact in the RFPs / Tenders floated by Department of Posts including all administrative and field offices.

ii. The particulars of all Independent External Monitors engaged in the Depanment of Posts shall be mentioned in the RFPs Teisclers with estimated value of more than Rs. 03 Crores where implementation of Integrity Pact with prospective bidders nas been made mandatory by Departmcnl of Posts. In cases where tenders have already been issued. The details shall the intimated to the concerned bidders / vendors forthwith before signing of the pre-Contract Integrity Pact. In case, the Pact has already been signed, the concerned bidders / vendors shall be suitably apprised at the earliest by the concerned officer.

iii. The IEMs shall review independently and objectively whether and to what extent the parties comply with the obligations under the Integrity fact. They shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

iv. The IEMs shall have the right to access all the documents relating to the project /procurement, including minutes of the Meetings.

v. The IEMs shall have the right to access without restrictions all Tender /Project documentation of the Buyer (Department of Posts) including that providedby the Bidders/Vendors.Theyshallalsohaveunrestrictedandunconditionalaccess to Tender /Project documentationof bidders / sub-contractors on requestand demonstration of valid interest. However, IEMs shall he under contractual obligationtotreattheinformationanddocumentsofthe bidder subcontractor(s) with confidentiality.

vi. The lEMs shall be provided sufficient information abort all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties' shall offer the IEMs the option to participate in such meetings.

vii. The IEMs shall inform the Authority designated by the Department if IEM notices, or has reason to believe a violation of the Integrity Pacl.

viii. The IEMs shall submit a detailed written report to Secretary (Posts) within 8 to 10 weeks from the date of reference or intimation / complaint given to them by the Department or Bidders / Vendors. The IEM, should the occasion arise, shall submit proposals for correcting problematic situations.

ProceduretobeadoptedbyIEMs: Theprocedure forexaminationofthe references received from theDepartment or Bidders\Vendors shall be as follows:

i. ThedecisionoftheCompetentAuthoritywithregardtoNITs/RFPs/ Projectswillbe postedon the websiteof theCentral Public ProcurementPortal, GeMand/orDepartmentofPostsandwillalsobecommunicated totheBidders/ Vendorseitherelectronicallyand /orphysicallywhoseproposal arenotselected / approvedtogivethemanopportunitytomakerepresentationifany, tothetender inviting authority within 15 days from the date of the posting on the website or issue of the letter.

ii. A decision by the Competent Authority on such representation will be taken within 15 days of receipt of the representation. If the application is found with merit, it will be referred to the nominated IEM.

iii. The IEM, with reference to the representations sent by the Competent Authority or received directly from Bidders / Vendors, will re-examine the records of the case and hear the concerned officers / applicants and submit the report to Competent Authority.

iv. The Report of the IEM on the representation by the Bidders / Vendors will be placed before the Competent Authority for consideration and appropriate decision will be taken within a period of 30 days. The decision of Competent Authority shall be final on the representation.

v. The opportunity to submit representation will be given against the decision of the Tender Evaluation Committee / Competent Authority regarding the non- selection of the Tender / Project of the Bidders / Vendors. This mechanism will not be available during the implementation phase of the Tender / Project.

INTEGRITYPACT

(IntegrityPactisapplicableforallworksofestimatedcostputtotenderequaltoormorethanthethresholdvaluegiven inSchedule-F)

ThisIntegrityPactismadeat.....onthis.....dayof.....20.....

BETWEEN

PresidentofIndiarepresentedbytheExecutive Engineer (C), Postal Civil Division……..(Hereinafterreferredtoasthe'**Principal/owner'**,whichexpression shall unless repugnant to the meaning or context hereof include its successors and permitted assignees)

AND

.....

(Nameandaddressofthebidder)

(Hereinafter referred to as the Bidder/Contractor and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assignees)

Preamble

WHEREAS the Principal has floated the tender (NITNo.:. .....) (hereinafter referred to as theTender)and intends to award,under laid down organizational procedure,Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa(Nameofwork)
. .....hereinafter referred to as the Contract.

ANDWHEREAS the Principal values full compliance with all relevant laws of the land,rules,regulations,economic use of resources and of fairness/transparency in its relation with its Bidder(s) and Contractor(s).

ANDWHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as Integrity Pact), the terms and conditions of which shall also be read as integral part and parcel of theTender/Bid documents and Contract between the parties.

In order to achieve these goals, the Principal will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned here under.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Integrity Pact witnesses as under:

Articles

Article1:CommitmentofthePrincipal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the followingprinciples:

(a) No employee of the Principal, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self orthirdperson,anymaterialorimmaterialbenefitwhichthepersonisnotlegallyentitled to.

(b) The Principal will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal will, in particular, before and during theTender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.

(c) The Principal shall endeavour to exclude from the Tender process any person, whose conduct in the past has been of biased nature.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of CorruptionAct, 1988 (PCAct) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policiesandprocedures.

Article2:CommitmentoftheBidder(s)/Contractor(s)

1. It is required that each Bidder/Contractor (including their respective officers,employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.

2. The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the Tender process andduring the Contract execution:

(a) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give toanyofthePrincipalemployeesinvolvedintheTenderprocessorexecutionoftheContractortoan y third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchangeanyadvantageofanykindwhatsoeverduringtheTenderprocessorduringtheexecution of the Contract.

(b) The Bidder(s)/Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrictcompetitivenessortocartelizeinthebiddingprocess.

(c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act. Further the Bidder(s)/ Contract(s) will not use improperly, (for the purpose of competition or personal gain), orpass on to others, any information or documents provided by the Principal/Owner as part of the business relationship, regarding plans, technical proposalsand business details, including information contained or transmitted electronically.

(d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the names and addresses of agents/ representatives in India, if any. Similarly Bidder(s)/Contractor(s) of Indian nationality shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf ofthe foreign principal or the foreign principal directly could bid in a tender but not both. Further, incases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.

(e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he hasmade, is committed to or intends to make toagents, brokers or any other intermediaries in connection with the award of the Contract.

(f) Bidder(s) / Contractor(s) who have signed the Integrity Pact shall not approach the courts while representingthemattertoIEMsandshallwait fortheirdecisioninthematter.

3. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

4. TheBidder(s)/Contractor(s)willnot,directlyorthroughanyotherpersonorfirmindulgeinfraudulentpractice, willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/or to influence the procurement process to the detriment of the Governmentinterests.

5. The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use coercive practices (which shall include the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall uponaperson,his/herreputationorproperty)toinfluencetheirparticipationinthetenderingprocess.

Article3:ConsequencesofBreach

Without prejudice to any rights that may be available to the Principal under law or the contract or its established policies and laid down procedures, the Principal shall have the following rights in case of breach of this Integrity PactbytheBidder(s)/Contractor(s)andtheBidder/Contractoracceptsandundertakestorespectanduphold the Principal absolute right:

1. If the Bidder(s)/Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal after giving 14 days' notice to the contractor shall have powers to disqualifytheBidder(s)/Contractor(s)fromtheTenderprocessorterminate/determinetheContract,ifalready executedorexcludetheBidder/Contractorfromfuturecontractawardprocesses.Theimpositionanddu ration of the exclusion will be determined by the severity of transgression and determined by the Principal. Such exclusion may be forever or for a limited period as decided by the Principal.

2. Forfeiture of EarnestMoneyDeposit/PerformanceGuarantee/SecurityDeposit:IfthePrincipalhasdisqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accruedthe right to terminate/determine the Contract according toArticle 3(1), thePrincipal apart from exercising any legal rights that may have accrued to thePrincipal, may in its considered opinion forfeit the entire amount of Earnest Money Deposit/Performance Guarantee and Security Deposit of the Bidder/Contractor.

3. Criminal Liability: If the Principal obtains knowledge of conduct of a Bidder orContractor, or of an employee orarepresentativeoranassociateofaBidderorContractorwhichconstitutescorruptionwithinthemeaning of PC Act, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to law enforcing agencies for further investigation.

Article4:PreviousTransgression

1. The Bidderdeclaresthatnopreviostransgressionsoccurredinthelast3 yearswithanyotherCompany in any country confirming to the anticorruption approach or with Central Government or State Governmentor any other Central/State Public Sector Enterprises in India that could justify his exclusion from the tender process.

2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken for banning of business dealings/holiday listing of the Bidder/Contractor as deemed fit by the Principal.

3. If the Bidder/Contractor can prove that he has resorted/recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal may, at its own discretion, revoke the exclusion prematurely.

Article5:EqualTreatmentofallBidders/Contractors/Subcontractors

1. The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement by any of its Subcontractors/sub-vendors.

2. ThePrincipalwillenterintopactsonidenticaltermsasthisonewithallBiddersandContractors

3. The Principal will disqualify Bidders who do not submit the duly signed Integrity Pact between the Principal and the Bidder along with the Tender or violate its provisionsatanystage of the Tender process.

Article6-DurationofthePact

This Integrity Pact begins when both the parties have legally signed it. It expires for the Contractor 12 monthsafter the completion of work under the contract or expiry of defect liability period or last payment made under the contract, whichever is later and for all other bidders, 6 months after the Contract has been awarded. If any claimis made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this IntegrityPactasspecifiedabove, unlessitisdischarged/determinedbythe Competent Authority, DoP.

Article7-OtherProvisions

1. This Integrity Pact is subject to Indian Law, place of performance and jurisdiction is the Headquarter of the Division of the Principal, who has floated the tender.

2. Changesandsupplementsaswellasterminationnoticeneedtobemadeinwriting.

3. IftheContractorisapartnershiporaconsortium,thisIntegrityPactmustbe signedbyallthepartnersor by one or more partner holding power of attorney signed by all partners and consortium members. In caseofaCompany,theIntegrityPactmustbesignedbyarepresentativedulyauthorizedbyboard resolution.

4. Should one or several provisions of this Integrity Pact turn out to be invalid; the remainder of this Pact remainsvalid.Inthiscase,thepartieswillstrivetocometoanagreementtotheiroriginalintensions.

5. IssueslikeWarranty/Guaranteeetc.shallbeoutsidethepurviewofIEMs.

6. It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Pact, any action taken by the Principal in accordance with this Integrity Pact or interpretation thereof shall not be subject to arbitration.

7. Inviewofthenatureofintegritypact,theIntegrityPactisirrevocableandshallremainvalidevenifthemain tender/contractisterminatedtillthecurrencyoftheintegritypact.

8. If any complaint regarding violation of IP is received directly by the Principal in respect of the contract, the same shall be referred to the IEM for comments/recommendations.

Article8–IndependentExternalMonitor(IEM)

1. The Principal appoints competent and credible Independent External Monitorfor this Pact after approval by Central Vigilance Commission (Names and address of IEMs are as mentioned in Schedule-F). The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

2. TheMonitorisnotsubjecttoinstructionsbytherepresentativesofthepartiesandperformshis/herfunctio ns neutrally and independently.The Monitorwould have access to all contract documents, whenever required. It will be obligatory for him/her to treat the information and documents of the Bidders / Contractors as confidential.

3. The Bidder(s)/Contractor(s) accepts that the IEM has the right to access without restriction to all project documentation of the Principal including that provided by the Contractor, The Contractor will also grant the IEM, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to theirprojectdocumentation.Thesameisapplicable tosub-contractors.

4. TheIEMisundercontractualobligationtotreattheinformationanddocumentsoftheBidder{s}/Contract

or(s)/ Sub-contractor(s) with confidentiality. The IEM has also signed 'Non-Disclosure of Confidential Information' and 'Absence of Conflict of Interest'. In case if any conflict of interest arising at a later date, the IEM shall inform the Engineer-in-Charge and recuse himself / herself from that case.

5. As soon as the IEM notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The IEM can in this regard submit non-binding recommendations. Beyond this, the IEM has no right to demand from the parties that they act in a specific manner, refrain from action or tolerateaction.

6. The IEM will submit a written report to the Competent Authority, DoP within 8 to 10 weeks from the date of referenceorintimationtohimbythePrincipaland,shouldtheoccasionarise,submitproposalsforcorrecting problematicsituations.

7. If the IEM has reported to theCompetent Authority, DoP, a substantiated suspicion of an offence under relevant IPC/PCAct,and theCompetent Authority, DoP has, within a reasonable time, not takenvisibleactiontoproceed against such offence or reported it to the Chief Vigilance Officer, the IEMmay also transmit this information directly to the Central Vigilance Commissioner.

8. The Principal will provide to the IEM sufficient information about all meetings among the parties related to the project provided such meetings could have impact on contractual relations between the Principal andthecontractor. ThepartieswilloffertotheIEMtheoptiontoparticipateinsuchmeetings.

9. ThewordIEMormonitorwouldincludebothsingularandplural.

Article9-LegalandPriorRights

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remediesbelonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/Contact documents with regard to any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date firstabove mentioned in the presence of following witnesses:

.....

(ForandonbehalfofPrincipal)

.....

(ForandonbehalfofBidder/Contractor)

WITNESSES:

1 .....

(signature,nameandaddress)

2 .....

(signature,nameandaddress)

Place:

Dated:

Note:TobesignedbytheBidderandtheEngineer-in-Charge.

PART-B: CIVIL COMPONENT

Name of work: ***Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa***

Certified that this part of document i.e. Part B contains pages from 48 to 106.

Executive Engineer (Civil)
Postal Civil Division, Mumbai

1.0 General

1.1 Except for the items, for which Particular Specifications are given or where it is specifically mentioned otherwise in the description of the items in the schedule of quantities, the work shall generally be carried out in accordance with the "CPWD Specifications 2019Vol. I & II" with up to date correction slips, additional / Particular Specifications, Architectural / structural drawings and as per instructions of Engineer-in-Charge.

The several documents forming the tender are to be taken as mutually complementary to one another. Detailed drawings shall be followed in preference to small scale drawings and figured dimensions in preference to scaled dimensions.

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

(i) Description of Schedule of Quantities
(ii) Particular Specifications and Special Conditions, if any.
(iii) Drawings
(iv) CPWD Specifications.
(v) Indian Standard Specifications of B.I.S.
(vi) Manufacturers' specifications & as decided by Engineer-in-charge.

"In the event of any variation/ discrepancy in the drawings, specifications and tender documents etc. the decision of the Engineer-in-charge shall be final binding and conclusive on the contractor and in the case the contractor have any doubt and the same should be got clarified immediately from the Engineer-in-charge and no claim of the contractor shall be entertained thereafter. Moreover, the agency is not allowed to take benefit out of any clerical/ grammatical mistake in the standard clauses/Schedule of Quantities/Specifications etc. being used in the agreement".

The works to be governed by this contract shall cover delivery and transportation up-to destination, safe custody at site, insurance, erection, testing and commissioning of the entire works.

The works to be undertaken by the contractor shall *interalia* include the following:

i. Preparation of detailed SHOP drawings and AS BUILT drawings wherever applicable.
ii. Obtaining of Statutory permissions where-ever applicable and required.
iii. Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
iv. Warranty obligation for the equipment and/or fittings/fixtures supplied by the contractor.

Contractor shall provide all the shop drawings or layout drawings for all the coordinated services before starting any work or placing any order for any of the services etc. These shop drawings/layout drawings shall be got approved from Engineer-in-charge before implementation and this shall be binding on the contractor. The contractor shall submit material details along with material sample for approval of Engineer-in-charge prior to delivery of material at site.

1.2 Any reference made to any Indian Standard Specifications, shall imply to the latest version of that standard, including such revisions / amendments as issued by the Bureau of Indian Standards up-to last date of receipt of tenders. The Contractor shall keep at his own cost all such publications including relevant Indian Standard Codes applicable to the work at site.

1.3 All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested before covering.

1.4 Samples including brand / quality of materials and fittings to be used in the work shall be got approved from the Engineer-in-Charge, well in advance of actual execution and shall be preserved till the completion of the work.

1.5 Equipment like concrete pumps excavators/Transit mixers etc. shall be allowed to be moved away from the site when, in written opinion of Engineer-in-Charge, the same are no longer required at site of work.

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

1.7 Contractor(s) shall study the soil investigation report for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil, ground water

table and other parameters at site. However, no claim on the alleged inadequacy or incorrectness of the soil data supplied by the department shall be entertained. In the case of excavation in foundation bailing out of the ground water, the contractor shall be liable to make on arrangement for bailing out of ground water met during the excavation of foundation and on this account no extra payment shall be paid.

1.8 The tenderer shall see the approaches to the site. In case any approach from main road is required at site or existing approach is to be improved and maintained for cartage of materials by the contractor, the same shall be provided, improved and maintained by the contractor at his own cost.

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

1.10 The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing barriers. He shall be responsible for all damages and accidents caused to work due to negligence on his part. No hindrances shall be caused to traffic, during the execution of the work.

1.11 The contractor shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at any place. No excavated earth or building rubbish shall be stacked on areas where other buildings, roads, compound wall, services etc. are to be constructed.

1.12 The contractor shall provide at his own cost suitable weighing, surveying and leveling and measuring arrangements as may be necessary at site for checking. All such equipment shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account.

1.13 Contractor shall provide permanent bench marks, flag tops and other reference points for the proper execution of work and these shall be preserved till the end of work. All such reference points shall be in relation to the levels and locations, given in the Architectural and plumbing drawings.

1.14 Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to approved manufacturers specifications where CPWD Specifications are not applicable. The contractor should get the materials (fixtures/fittings) tested from approved labs wherever required at his own cost.

1.15 The work shall be carried out in accordance with the Architectural drawings and Structural drawings, to be issued from time to time, by the Engineer-in-Charge. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work, nomenclature of items, specifications etc. and satisfy himself that the information available there from is complete and unambiguous. The figures & the written dimensions of the drawing shall supersede the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-inCharge for immediate decision before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and/ or incomplete information and no claim, whatsoever shall be entertained on this account.

1.16 The contractor should submit the shop drawing of staging and shuttering for approval of Engineer-in-Charge before actually commencing the execution of work under the item. Nothing extra shall be payable on this account.

1.17 Other agencies may also simultaneously execute and install the works and the contractor shall afford necessary facilities for the same. The contractor shall leave such recesses, holes, openings, trenches etc. as may be required for such related works (for which inserts, sleeves, brackets, conduits, base plates, clamps etc. shall be available as specified elsewhere in the contract) and the contractor shall fix the same at the time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.

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

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

1.20 Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. The contractor shall not store materials or otherwise occupy any part of the site in a manner likely to hinder the operation of such services. In case temporary supporting of such services is required to facilitate the work, the same shall be done by the contractor at no extra cost.

In case the existing services are to be shifted permanently, then before dismantling the existing services, alternate/diversion of service lines has to be laid by the contractor so that there is no interruption in use of existing services. The contractor has to plan the alternate suitable route for diversion/shifting of service lines and get the same approved from the Engineer-in-Charge before starting shifting of services. Nothing extra shall be paid except the payment of dismantling and laying of new service lines as per conditions of contract.

1.21 The contractor shall be responsible for the watch and ward / guard of the buildings, safety of all fittings and fixtures including sanitary and water supply fittings and fixtures provided by him against pilferage and breakage during the period of installations and thereafter till the building is physically handed over to the client department. No extra payment shall be made on this account.

1.22 The contractor shall be fully responsible for the safe custody of materials brought by him/ issued to him even though the materials may be under double lock key system.

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

1.24 The rates quoted by the Contractor are deemed to be inclusive of site clearance, setting out work, profile, establishment of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, preparatory works, working during monsoon, working at all depths, height, lead, lift and location etc. until / unless specified otherwise and any other incidental works required to complete this work. Nothing extra shall be payable on this account.

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

1.26 Results of sub-surface investigations conducted at site are indicated in extracts of the report attached. This information about the soil and sub-soil water conditions is being made available to the Contractor, in good faith, for guidance only and the Contractor is advised to obtain details directly as may be considered necessary by him before quoting rates in the tender. No claim whatsoever on account of any discrepancy between the sub-surface strata conditions that may be actually encountered at the time of execution of the work and those given in these tender documents, in-accuracy or interpretation thereof shall be entertained from the Contractor under any circumstances. The ground water table is a variable condition and the information given in the report is only indicative and it may vary from time to time.

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

1.28 The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the rules & regulations and bye-laws laid down by Collector / MC etc. and any other statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities. It is clarified that the extra sewerage charges (one time charges for commencement of work) required to be paid to the Municipal Corporation / other statutory bodies shall be paid by the department and need not be considered by the contractor. The water charges (for municipal water connection as well as tanker water) shall be borne by the contractor. Also, if the contractor obtains water connection for the drinking purposes from the municipal authorities or any other statutory body, the consequent sewerage charges shall be borne by the contractor. All statutory taxes, levies, charges (including water and sewerage charges, charges for temporary service connections and / or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and shall pay to such authority all the fees that is required to be paid for the execution of work. He shall protect and indemnify the Department and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts. The fee payable to statutory authorities for obtaining the various permanent service connections and Occupancy Certificate for the building shall be borne by the Department.

1.29 Royalty at the prevalent rates shall be paid by the Contractor as per the terms of supply between them on all materials such as boulders, metals, sand and bajri etc. collected by him for the execution of the work, directly to the revenue authority of the state government concerned.

Nothing extra shall be payable on this account.

1.30 No foreign exchange shall be made available by the Department for importing (purchase) of equipment, plants, machinery, materials of any kind or any other items required to be carried out during execution of the work. No delay and no claim of any kind shall be entertained from the Contractor, on account of variation in the foreign exchange rate.

1.31 The Contractor shall conduct his work so as not to interfere with or hinder the progress of the work being performed by other Contractors or by the Engineer-in-Charge. As far as possible, he shall arrange his work and place, so as not to interfere with the operations of other Contractors or shall arrange his work with that of the others, in an acceptable and coordinated manner and shall perform it in proper sequence.

1.32 The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the Department from any and all damages and claims that may arise on any account. The Contractor shall indemnify the Department against all claims in respect of patent rights, royalties, design, trademarks of name or other protected rights, damages to adjacent buildings, roads or members of public, in course of execution of work or any other reasons whatsoever, and shall himself defend all actions arising from such claims and shall indemnify the Department in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.

1.33 The Contractor shall make all necessary arrangements for protecting from rains, the work already executed and for carrying out the further work, during monsoon including providing and fixing temporary shelters, protections etc. Nothing extra shall be payable on this account. Also, no claims for hindrance shall be entertained on this account.

1.34 In case of flooding of site on account of rain or any other cause and any consequent damage, whatsoever, no claim financially or otherwise shall be entertained not withstanding any other provisions elsewhere in the contract agreement. Also, the Contractor shall make good, at his own cost, the damages caused, if any.

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

1.36 All ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, temporary ramp required to be made for working at the basement level, temporary structure for plants and machineries, water storage tanks, installation and consumption charges of temporary electricity, telephone, water etc. required for execution of the work, liaison and pursuing for obtaining various No Objection Certificates, completion certificates from local bodies etc., protection works, barricading, testing facilities / laboratory at site of work, facilities for all
field tests and for taking samples etc. during execution or any other activity which is necessary (for execution of work and as directed by Engineer-in-Charge), shall be deemed to be included in rates quoted by the Contractor, for various items in the schedule of quantities. Nothing extra shall be payable on these accounts. Before start of the work, the Contractor shall submit to the Engineer-in-Charge, a site / construction yard layout, specifying areas for construction, site office, positioning of machinery, material yard, cement and other storage, steel fabrication yard, site laboratory, water tank, etc.

1.37 The Contractor shall display all permissions, licenses, registration certificates, bar charts, other

statements etc under various labour laws and other regulations applicable to the works, at his site office.

1.38 No tools and plants including any special T&P etc. shall be supplied by the Department and the Contractor shall have to make his own arrangements at his own cost. No claim of hindrance (or any other claim) shall be entertained on this account.

The Contractor shall be allowed to use the facilities available at site & arranged by the Associate Contractors and other agencies working at site for smooth execution of the work. The Contractor shall be

(a) Allow to use of scaffolding already erected, toilets, sheds etc.
(b) Properly co-ordinate their work with the work of other Contractors.
(c) Provide control lines and benchmarks to his Associate-Contractors and the other Contractors.
(d) Provide electricity and water at mutually agreed rates.
(e) Provide hoist and crane facilities for lifting material at mutually agreed rates.
(f) Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
(g) Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other Contractors to suit the overall schedule completion.
(h) Resolve the disputes with other Contractor amicably and the Engineer-in-Charge shall not be made intermediary or arbitrator. The contractor shall indemnify the Department against any claim(s) arising out of such disputes.

1.39 On completion of work, the contractor shall submit at his own cost four prints of "as built" drawings of the completed work to the Engineer-in-Charge. These drawings shall have the following information.

a) Run off of all piping and their diameters including soil, waste pipes and vertical stacks.
b) Ground and invert level of all drainage pipes together with locations of all manholes and connections, up-to out fall.
c) Run off of all water supply lines with diameters, location of control valves, access panels etc.

In case the contractor fails to supply "as built drawing" aforesaid within 30 days of the date of completion, then the recovery @ Rs. 10,000/- for each such set of drawings shall be made from the contractor's final bill.

1.40 The contractor shall have to arrange water of desirable quality for the construction purpose for which he may have to install RO plant at site or might have to bring/ purchase water from outside as per decision of Engineer-in-charge. Nothing extra shall be paid on this account. The contractor has to take the water connection from local bodies and pay the charges for the same to the local bodies, if it is mandatory as per statuary laws, even in the case the contractor arranges his own water from other sources.

2.0 Unless otherwise specified in the schedule of quantities or CPWD specifications, the rates for respective items shall be all inclusive and apply to the following: -

(i) All lifts & all heights, floors including terrace, leads and depths.
(ii) All labour, material, tools and plants and other inputs involved in the execution of the item.
(iii) Any of the conditions and specifications mentioned in the tender documents.
(iv) Providing sunk flooring in bath-rooms, kitchen, etc.
(v) Any legal or financial implications resulting out of disposal of earth, if any.
(vi) Payment of Royalty at the prevailing rates, if any, on the boulders, metal, shingle, sand and bajri etc. or any other material collected by him for the work direct to revenue authorities.
(vii) Performance test of the entire installation(s) before the work is finally accepted.
(viii) Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items.
(ix) All incidental charges for cartage, storage and safe custody of materials brought to site.

3.0 QUALITY ASSURANCE/ TESTING OF MATERIALS

3.1 General:-

3.1.1 All incidental expenditure on security, construction of cement godown, access roads, arrangement of water, electricity etc. to be incurred by the agency for arranging, installing and

operation of Batch Mix Plant shall be deemed to have been included in his quoted rates and no claim whatsoever will be tenable on this account.

3.1.2 With each Running Bill, the details of test carried out shall be submitted by the contractor as per Performa at **PageNo.103-104of Part- B.**

3.1.3 Samples of materials required for testing shall be provided free of charge by the contractor. The cost of tests to be carried out on Steel in approved labs shall be borne by the contractor. "All the expenditure to be incurred for testing of the sample eg. Packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor".

All other expenditure required to be incurred for taking samples; conveyance, packing etc. shall be borne by the contractor himself.

a) All the test in field lab setup at construction site shall be carried out by the Engineering Staff deployed by the contractor which shall be 100% witnessed by JE & 50% of tests shall be witnessed by AE –in-charge. At least 10% of the tests are to be witnessed by the EE/ SE division office.

b) All the entries in the registers will be made by the designated Engineering staff of the contractor and same should be regularly reviewed by JE/AE/EE/ division office.

c) Contractor shall be responsible for safe custody of all the test registers.

d) Submission of copy of all Test Registers, Material at Site Register and Hindrance Register along with each alternate Running Account Bill and Final Bill shall be mandatory. These registers should be duly checked by AE(P) in Division Office & receipts of registers should also be acknowledged by Accounts Officer by signing the copies and register to confirm receipt in division office

e) Extensive testing of the materials used for construction is a pre-requisite for attaining high quality of the work. This shall also require specialized tests, physical, chemical, ultrasonic, x-ray and various other types of tests which cannot possibly be carried out in a site laboratory. These tests also require specialized personnel who regularly deal in such testing. Therefore, the need arises for carrying out the tests in outside laboratories. These laboratories may be in the Govt. sector, Semi Govt. or Private sector. The outside private laboratories shall be short listed before- hand by EE and approval obtained from Chief Engineer-I Dak Bhawan, New Delhi. In case of laboratories in the private sector, the past record and reputation of the laboratory must invariably be given due consideration. The infrastructure in these laboratories can also be inspected before they are short listed.

However, testing of material in any Govt., Lab / Public Undertaking Lab / IIT or NIT Lab / Govt.Engineering College may be allowed by Executive Engineer without prior approval of Chief Engineer-I Dak Bhawan, New Delhi or higher officers provided these labs have all necessary facility to carry out the required tests.

3.1.4 However, if any ultrasonic pulse velocity/load testing or special testing is to be done for concrete whose strength is doubtful, the cost of the same shall be borne by the contractor.

3.1.5 In case there is any discrepancy in frequency of testing as given in list of mandatory tests and that in individual sub-heads of work as per CPWD Specifications higher of the two frequencies of testing shall be followed and nothing extra shall be payable on this account.

3.1.6 Special attention shall be paid towards line and level of internal and external plastering, exposed smooth surface of RCC members by providing fresh shuttering plates, sealing shuttering joints, accurate joinery work in wooden doors and windows, thinnest joints in stone/ tiling / cladding work, non-hollowness in floor and dado tiles work, protection of scratches over flooring by impounding layer of plaster of Paris, water tight pipe linings, absence of hollow vertical joints in brick masonry, proper compaction of filled up earth etc. to achieve an Institution of International standards and up keeping of quality assurance shall be of paramount importance, as such.

3.2 FIELD LABORATORY

The contractor has to establish field laboratory at site including all necessary equipment and skilled manpower for the **Field Tests as at Page No. 100of Part- B**at his own cost to have proper quality control.

For performing the above tests, the **Field Testing Equipments and Instruments as at Page No. 101-102of Part- B** are to be arranged and maintained by the contractor.

3.2.1 The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set-out tolerance limit shall be summarily rejected by the Engineer-in-Charge & contractor shall be bound to replace/ remove such sub-standard / defective work immediately.

3.2.2 The list of Laboratory/ Field equipment referred above are to be arranged and maintained by the contractor at the site of work. In case the equipment required for any test is not available at site, the department shall get the test conducted from the third party. However, in that event, besides providing free materials of sample, the cost of taking of sample, packing, transportation, testing charges etc. shall be borne by the contractor irrespective of the results.

3.2.3 The contractor shall establish field laboratory including additional room (of minimum area of 20 sqm. each) for preserving samples of material till the completion of whole work. Nothing extra shall be paid for establishing field laboratory.

3.3 SAMPLE OF MATERIALS:-

3.3.1 All materials and fittings brought by the contractor to the site for use shall confirmto the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work. If a particular brand of material is specified in the item of work in Schedule of Quantity, the same shall be used after getting the same approved from Engineer-in-Charge. Wherever brand / quality of material is not specified in the item of work, the contractor shall submit the samples as per **List of Preferred Makes as at Page No. 105 to 106of Part B**for approval of Engineer-in-Charge. For all other items, ISI Marked materials and fittings shall be used with the approval of Engineer-in-Charge. Wherever ISI Marked material / fittings are not available, the contractor shall submit samples of materials / fittings manufactured by firms of repute conforming to relevant Specifications or IS codes for the approval of Engineer-in-Charge.

3.3.2 To avoid delay, contractor should submit samples as stated above well in advance so as to give timely orders for procurement. If any material, even though approved by Engineer-in-Charge is found defective or not conforming to specifications shall be replaced / removed by the contractor at his own risk & cost.

3.3.3 BIS marked materials except otherwise specified shall also be subjected to quality test besides testing of other materials as per the specifications described for the item/material. Wherever BIS marked materials are brought to the site of work, the contractor shall, furnish manufacturer's test certificate or test certificate from approved testing laboratory to establish that the material procured by the contractor for incorporation in the work satisfies the provisions of specifications relevant to the material and / or the work done.

BIS marked items (except cement & steel for which separate provisions have been made in para 4.0) required on the work shall be got tested, for only important tests, which govern the quality of the product, as decided by the Engineer-in-Charge. The frequency of such tests (except the mandatory test) shall be 5% of the frequency as specified in BIS. For mandatory test, frequency shall be as specified in the CPWD Specifications.

3.3.4 For certain items, if frequency of tests is neither mentioned in the CPWD Specifications & BIS, then tests shall be carried out as per decision of Engineer-in-Charge.

4.0 CEMENT & STEEL REINFORCEMENT (TO BE SUPPLIED BY THE CONTRACTOR).

4.1 Contractor has to produce manufacturers test certificate and challan for each lot of Cement & Steel Reinforcement procured at site.

4.2 CEMENT: -

4.2.1 The contractor shall procure 43 grade ordinary Portland Cement conforming to IS: 8112 / Portland Pozzolona Cement (PPC) conforming to IS: 1489 (Part-1) as required in the work from reputed manufacturers of cement such as ACC, ULTRATECH, VIKRAM, SHREE CEMENT, AMBUJA, JAYPEE CEMENT, CENTURY CEMENT & J.K. CEMENT etc. The cement of approved make as aforesaid in 50 kg. bags bearing manufacturer's name and ISI marking, along with manufacturers test certificate for each lot shall be procured by the contractor. Portland Pozzolana Cement is to be used for RCC works only subject to fulfillment of conditions of circular No. CDO/SE(RR)/Fly ash (MAN) 02 dated 09.04.2009. However, if the contractor uses higher grade of cement or uses Ordinary Portland Cement (OPC) only nothing extra shall be paid.

4.2.2 Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant BIS Codes. The cement for such testing purpose shall be supplied by the contractor free of charge. In case test results indicate that the cement arranged by the contractor does not conform to the relevant BIS Codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so.

"Alltheexpendituretobeincurred for testing of the sample eg. Packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor".

4.2.3 Cement shall be brought at site in bulk supply of approximately 100 tonnes or as decided by the Engineer-in-Charge.

4.2.4 OPC & PPC bags shall be stored in separate go-downs. Separate go-downs for tested cement and fresh cement (under testing) to be constructed by the contractor at his own cost as per sketches given in C.P.W.D Specifications having weather-proof roofs and walls. The size of the cement go-down is indicated in the sketches for guidance. The actual size of go-down shall be as per site requirements and nothing extra shall be paid for the same. Each go-down shall be provided with a single door with two locks. The keys of one lock shall remain with Engineer-in-Charge or his authorized representative of the work and that of other lock with the authorized agent of the contractor at the site of work so that the cement is issued from go-down according to the daily requirement with the knowledge of both parties. The account of daily receipt and issue of cement shall be maintained in a register in the prescribed proforma and signed daily by the contractor or his authorized agent and Engineer-in-Charge or his authorized representative in token of its correctness. The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the contractor or his authorized representative who shall be duly signed by the authorized representative of the Engineer-in-Charge before issue to the work on day to day basis.

Four separate cement go-downs each having capacity of 50 MT or more as decided by the Engineer-in-Charge shall be constructed by the contractor at site of work for which no extra payment shall be made. The contractor shall be responsible for the watch and ward and safety of the cement go-downs. The contractor shall facilitate the inspection of the cement go-downs by the Engineer-in-Charge at any time.

4.2.5 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in Clause-42 of the contract and shall be governed by the conditions laid therein.

4.2.6 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorized variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after the completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in Clause - 42), the cost of quantity of cement not so used shall be recovered from the contractor as specified in schedule. Decision of the Engineer-in-Charge in regard to theoretical quantity of cement which should have been actually used as per the schedule and recovered at the rate specified, shall be final and binding on the contractor.

For non-scheduled items, the decision of the Chief Engineer-I, Dak Bhawan, New Delhi regarding theoretical quantity of the cement, which should have been actually used, shall be final and binding on the contractor.

4.2.7 Cement brought to site and cement remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-Charge.

4.2.8 In case the contractor brings surplus quantity of cement the same shall be removed from the site after completion of work by the contractor at his own cost after approval of the Engineer-in-Charge.

4.2.9 Cement, which is not used within 90 days from its date of manufacture, shall be retested at approved laboratory. Until the results of such tests are found satisfactory, it shall not be used on the work.

4.3 SPECIAL CONDITIONS FOR STEEL REINFORCEMENT BARS: -

(Man Circular No. DG/CPWD Works Manual/350 dated 29/06/2017 effective from 01/07/2017.

4.3.1 (a) The Contractor shall procure ISI marked TMT bars of various grades from the steel manufacturers or their authorized dealers {as per following selection criteria) having valid BIS license for IS:1786-2008(Amendment -1 November 2012)

The procured steel should have following qualities: -

i. Excellent ductility, bend ability and elongation of finished product due to possible refining technology.

ii. Consumption of steel should be accurate as per design.

iii. Steel should have no brittleness problem in finished product.

iv. Steel should carry the quality of corrosion and earthquake resistance.

v. Quality steel with achievement of proper level of Sulphur and phosphorus as per IS: 1786-2008.

(b) **Selection Criteria of steel manufacturers**

The supply of reinforcement steel for all works should have following selection criteria of steel manufacturers: -

Steel producers of any capacity using iron ore/ processed iron ore as the basic raw material adopting advanced refining technologies as given hereunder,

(i) DRI-EAF = Direct Reduced iron - Electric arc furnace.

or

(ii) BF-BOF = Blast furnace - Basic oxygen furnace

or

(iii) COREX-BOF= COREX- Basic oxygen furnace

for production of liquid steel to finish product at single/multiple locations with NABL or any other similarly placed accrediting Government body which operates in accordance with ISO/IEC17011 and accredits labs as per ISO/IEC 17025 conforming to IS:1786-2008 (Amendment -1 November 2012). The check list for incorporation any quality steel producer is enclosed for technical assessment is given in Annexure-L Chief Engineer-Ishall approve the steel manufactures for projects under their jurisdiction. NIT approving authority shall specify the manufacturers in the tender document.

IN the absence of any approval from NIT approving authority the steel of Fe500D shall be procured from steel producers such as SAIL, TATA Steel ltd., RINL, Jindal Steel & Power Ltd., JSW Steel Ltd. ***In case of approval from NIT approving authority is required for use of any other ISI marked manufacturer/brand of TMT bars, the case should be submitted by the contractor through Engineer-in-Charge within one month of probable date of likely utilization of steel in the work.***

4.3.2 The contractor shall have to obtain and furnish test certificates to the Engineer-in-charge in respect of all supplies of steel brought by him to the site of work.

4.3.3 Samples shall also be taken and got tested by the Engineer-in-Charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specificationsthe same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time on written orders from the Engineer-in-Charge to do so.

4.3.4 The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-charge.

4.3.5 The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

4.3.6 For checking nominal mass, tensile strength, bend test, re-bend test etc. specimens of sufficient length shall be cut from each size of the bar at random, and at frequency not less than that specified below:

Size of bar	For consignment below 100 tonnes	For consignment above 100 tonnes
Under 10 mm dia bars	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes or part there of
10 mm to 16 mm dia bars	One sample for each 35 tonnes or part there of	One sample for each 45 tonnes or part there of
Over 16 mm dia bars	One sample for each 45 tonnes or part there of	One sample for each 60 tonnes or part there of

4.3.7 The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor.

4.3.8 The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 42 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations recovery at the rate so prescribed shall be made. In case of excess consumption, no adjustment need to be made.

4.3.9 The steel brought to site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.

Annexure- L

Special Conditions for Steel (Reference para 4.3)

Sl. No.	Item	Checkpoint	Remarks
1.	Steel Producer having manufacturing facilities at Plant	a. Factory address and Registration no.	
		b. Certificate of manufacturing process	
		c. Refining process of steel Producer	
		c.1 BF- BOF route	
		c.2 Corex— BOF route	
		c. 3 DRI - EAF route	
		With documentary evidence either for BOF or EAF	
		d. Steel plant having infrastructure for producing sponge iron, billete and TMT Rebars	
		e. Production and Quality Flow Chart	
		f. Plant Evaluation and Process Verification	
		g. List of Plant & Machinery	
2.	Established	Document verification for :	
		a. Govt. / PSU Approvals	
		b. Supply orders of TMT Re-bars in Govt. Projects (Minimum-5 years)	
		c. Verification of direct supply orders to any State/Central Govt. Department	
		d. User Certificate issued by any Govt. Department directly	
3.	Indigenous	Documentary evidence like;	
		a. Certificate of Incorporation	
		b. Memorandum of Articles of Association	
		c. Credit rating of the company from CARE/CRISIL/ICRA should not be C/D grade (minimum last 3 year)	
		a. Test Results from Govt./NABL accredited laboratories	
		b. In-house testing facility for physical/Chemical tests (NABL accredited)	
4.	Reliable	d. Calibration Certificates	
		e. List of Lab Equipment:	
		e.1 Spectrometer	
		e.2 Computerized UTM	
5.	Use of Iron-Ore/Processes Iron are as basic raw materials	Verification of Iron-Ore/ Process iron ore invoices	
6.	In-house rolling facility	Plant verification to identify in-house rolling facilities, production of liquid steel & crude steel	
7.	Licences & Certificates	a. ISO 9001:2008 Certification	
		b. ISO 14001:2004 Certification	
		c. OHSAS 18001:2007 Certification	
		d. IS 1786:2008 (TMT Re-bars)	

		e. IS 2830:1992 (Billets)	
8.	Product Range	TMT Re-bars FE 415/415D/500/500D/550/550D	
		CRS (Corrosion Resistant) & EQR (Earthquake Resistant) TMT Re-bars Size 8 to 36 mm dia	

Note:

DRI — EAF-> Direct Reduce Iron — Electric ARC Furnace

BF — BOF-> Blast Furnace — Basic Oxygen Furnace

COREX-BOF ->COREX Furnace — Basic Oxygen Furnace

5.0 SECRECY

5.1 The contractor shall take all steps necessary that all persons employed on any work in connection with the contract have notice that the Indian Official Secrets Act 1923 applies to them & will continue so to apply even after the execution of such works under the contract.

5.2 The contract is confidential and must be strictly confined to the contractor's own use (except so far as confidential disclosure to sub-contractors or suppliers as necessary) and to the purpose of the contract.

5.3 All documents, copies thereof & extracts there from furnished to the contractor shall be returned to the Engineer-in-Charge on the completion of the work / works or the earlier determination of the contract.

6.0 LABOUR AND SECURITY

6.1 Contractor should provide his plan for labour huts as per his requirement and get it approved from the Engineer-in-Charge. The contractor will be provided space for labour huts etc. inside the campus but the space requirement and location, as assessed by Engineer-in-Charge shall be final and binding.

6.2 Contractor has to follow the security requirement of the campus and obtain necessary entry passes for the labour and vehicles and follow security checks at entry / exit gates, restriction on movement of vehicle, restricted timings of working etc. The Department however shall assist the contractor in obtaining such passes for movement of vehicles and labour. No claim whatsoever shall be entertained on account of delay in entry of vehicles and labour including restrictions in working hours, if there is any.

6.3 The contractor shall employ only Indian Nationals after verifying their antecedents and loyalty. The contractor shall, on demand submit list of his agents, employees and work people concerned & shall satisfy as to the bonafides of such people.

6.4 The contractor & his work people shall observe all relevant rules regarding security promulgated in which work is to be carried out by the Controlling Administrative Authority of the campus/area (hereinafter referred to as "Administrator".

6.5 The contractor, his representative, workman shall be allowed to enter through specified gates & timing as laid down by the controlling authority. They shall be issued an identity card or an individual pass in accordance with the standing rules & regulations & they should possess the same while working. The contractor shall be responsible for the conduct & actions of his workmen, agents / representatives.

6.6 Normally contractor shall be allowed to carry-out work between 7 AM to 6 PM. However, he may also be allowed to carry-out the work beyond 6 PM &up-to 7 AM if the site conditions / circumstances so demand with prior written permission from the "Administrator". However, if the work is carried out in more than one shift or at night, no claim on this account shall be entertained.

6.7 Normally contractor's material / vehicles etc. shall be allowed to move in / go-out between 7 AM to 7 PM only & no movement of material / vehicles out of site of work shall be allowed during night hours unless specific permission is obtained from the "Administrator".

6.8 In case if a separate entry has been allowed, the contractor has to make all arrangement for making a separate entry gate and barricading of the working area to segregate/separate the same from other areas. All these have to be done by the contractor at his own cost including safeguarding any untoward incident in the restricted area due to separate entry gate and barricading arranged by the contractor. No extra amount on this account shall be payable by the department.

7.0 TRANSPORTATION AND OFFICE INFRASTRUCTURE:

7.1 In order to complete the work within the scheduled time if the contractor shall be required to do the work in more than one shift and accepted by the department the contractor will provide vehicular facilities to the DoP site staff to reach the site and their residence at his own cost for their services required beyond the normal office hours. In case the contractor fails to provide the facilities Engineer-in-Charge shall be at liberty to make the arrangement themselves and deduct the respective cost from the contractor's bills.

7.2 For Quality Control Measures, Preparation of Bills and Monitoring the Quality, the contractor shall provide (min. two number) Computer having Intel core i 5 3rd generation processor, Latest MS Windows, A-3 Coloured Inkjet & A-4 Laser-jet Printers, Scanners, UPS etc. with required number of data entry operators (two or more) in the site office of Engineer-in-Charge.

7.3 The contractor shall make arrangement for Helmets and leather shoes (meant of construction work at sites) for all field staff of the department during the entire period of construction for safety reasons. One helmet and two pairs of shoes per staff member (maximum ten members) of the departments per year shall be arranged by the contractor.

7.4 The contractor shall establish free of cost fully furnished site office having two rooms of 10 sqm. area each for field staff (1 No. AEand 1 No.JE) with toilet facility. The electricity and water charges shall be paid by the agency.

It is clarified that nothing extra shall be payable for transportation and office infrastructure. The site office & conference hall shall be removed after the work is completed by the contractor at his own cost. The conference table & other office furniture for field staff shall be arranged by DOP.

8.0 DOCUMENTATION

The Contractor shall render all help and assistance in documenting the total sequences of this project by way of photography, slides, audio / video recording & other records etc. Nothing extra shall be payable to Contractor on this account. However, cost of photographs, slides, audio / video graph etc. shall be borne by the Department. The original films shall be the property of the Department. No copy shall be prepared without the prior approval of the Engineer- in – Charge.

9.0PROGRAMME CHART: -

9.1 The Contractor shall submit a Programme Chart (Time and Progress) for each mile stone along-with performance guarantee and get it approved from the department. The chart shall be prepared in direct relation to the time stated in the contract documents for completion of the items of the work. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-charge and the contractor within the limitations of time imposed in the contract documents, and further to ensure good progress during the execution of the work. The contractor shall in all cases in which time allowed for any work exceeds one month (save for special jobs for which a separate program has been agreed upon) complete the work as per milestones given in Schedule 'F'.

9.2 The work has to be completed in stages as indicated in the **Table of Milestones under Schedule 'F' Page No. 37of Part -A** and the program should be prepared in such a manner to achieve these Milestones as indicated therein or earlier.

9.3 The program chart should include the following: -

a) Descriptive note explaining sequence of various activities.
b) Network (PERT/CPM/BAR CHART) prepared on MS project which will indicate resources in financial terms, manpower and specialized equipments for every important stage.
c) Program for procurement of materials by the contractor.
d) Program of procurement of machinery/equipments having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor.

9.4 If at any time, it appears to the Engineer-in-Charge that the actual progress of work does not confirm to the approved program referred above, the contractor shall produce a revised program showing the modifications to the approved program by additional inputs to ensure completion of the work within the stipulated time.

9.5 The submission of revised program or approval by the Engineer-in-Charge of such program or the furnishing of such particulars shall not relieve the contractor of any of his duties or responsibilities under the contract. This is without prejudice to the right of Engineer-in-Charge to take action against the contractor as per terms and conditions of the agreement.

Notwithstanding the fact that the contractor will have to pay to the labourers and other staff

engaged directly or indirectly on the work according to the provisions of the labour regulations and the agreement entered upon and/or extra amounts for any other reason

10.0 PROGRESS AND MONITORING OF WORK:

10.1 Apart from the above integrated program chart, the contractor shall be required to submit monthly progress report of the work in a computerized form. The progress report shall contain the following, apart from whatever else may be required as specified:

(i) Construction schedule of the various components of the work through a bar chart for the next three quarters (or as may be specified), showing the milestones, targeted tasks and up to date progress.

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

(iii) Plant and machinery statement, indicating those deployed in the work.

(iv) Man-power statement, indicating individually the names of all the staff deployed on the work, along with their designations.

(v) Financial statement, indicating the broad details of all the running account payment received up to date, such as gross value of work done, advances taken, recoveries effected, amount withheld, net payments details of cheque payment received etc.

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

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

10.4 The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-in-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of Engineer-in-charge.

10.5 The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion. The agency may deploy adequate equipment, machinery and labour as required for the completion of the entire work within the stipulated period specified. Also ancillary facilities shall be provided commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this account. Adequate number/sets of equipment in working condition, along with adequate stand-by arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipment, Tools & Plants, machineries etc. provided by him are maintained in proper working conditions at all times during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipment and machineries provided by the Contractor, on site of work or his work shop for this work, shall be exclusively intended for use in the construction of this work and they shall not be shifted/removed from site without the permission of the Engineer-in-Charge.

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

11.0 ENGAGING SPECIALISED AGENCIES FOR WORKS: -

11.1 The Contractor shall engage specialized agencies having adequate technical capability and experience of having executed at least one work of similar items of 80% or more magnitude or two works of similar items of value minimum 60% individually for executing the following items

of the work and/or any other items of work where specialized firm is required to be engaged as per contract conditions. For determining the required magnitude, the value of the work executed may be suitably enhanced with the prevailing approved cost index.
i) Water proofing treatment work of all types. ii) Steel work in space frame
iii) Laying of granite stone flooring. iv) Acoustic treatment and other decorative item such as glass ceiling v) Aluminium Workvi) Underground tank vii) Ready-mix concrete
viii) Stainless steel railing ix) Structural glazing work x) Woodenflooring xi) Plumbing works.

11.2 The Specialized agency for the work shall be got approved from the Engineer-in-Charge well before actual commencement of the item of work. The contractor shall submit the list of specialized agencies proposed to be engaged by him along with necessary performance certificates, within 30 days from the date of issue of acceptance letter to substantiate technical capability and experience of the agency for prior approval of the Engineer-in-Charge.

11.5 Same milestones shall be applicable for all components of work.

11.6 For the specialized item of door & window fittings, water supply and sanitary installations; the contractor shall engage such vendors/installers as approved by the manufacturers. Provisions mentioned under Sr. No. 11.1 above shall not be applicable for the items mentioned herein above.

12.0SAMPLE ACCOMMODATION:-DELETED

13.0 Defect liability:

13.1 The contractor's liability during the defect liability period from the final date of completion as per clause 17 shall be limited to rectification of defects including replacement as follows which in the opinion of Engineer-in-Charge are not man made.

Sl. No.	Description	Defect Liability
(i)	Concrete/ RCC	(a) Rectification of structural / superficial / non-structural cracks. (b) Rectification of dampness / seepage in roof slab / junctions & sunken portion. (c) Rectification of cracks in beam, shade, column.
(ii)	Brick work/ Concrete Block Masonry	(a) Rectification of cracks in panel wall / portion. (b) Cracks / settlement of dwarf walls. (c) Rectification of efflorescence/ leaching.
(iii)	Joinery	(a) Replacement of warped joinery. (b) Cracks in panels, rails / styles etc.
(iv)	Builders Hardware	(a) Repairs / Replacement of loosened / pre-mature failure of fittings. (b) Tightening / Replacement of sag in mosquito proofing.
(v)	Steel & Iron work	(a) Rectification / Replacement of defective part of rolling shutter. (b) Redoing of defective portion in fabrication / welding including painting. (c) Steel windows, grills, gates etc. – defects to be rectified.
(vi)	Roof treatment	(a) Rectification of leakage / seepage of roof slab including covering at junction till guarantee period.
(vii)	Plastering	(a) Rectification of structural / superficial cracks if any. (b) Rectification of protruding / peeling off plaster if any. (c) Rectification of efflorescence
(viii)	Flooring	(a) Rectification of sinking portion of plinth protection including saucer drain. (b) Settlement of foundation & floors, hollow sounding, cracks in tiles/stones.
(ix)	Plumbing / Sanitary fittings	(a) Making good of leakage through soil / waste pipe joints. (b) Replacement of looking mirror if found wavy. (c) Rectification of leakage of overhead tanks. (d) Leakage / seepage of sunken floor, blockage of taps / pipes, nonfunctioning of cistern.
(x)	Finishes	(a) Making good of defective / dissimilar patches of painting to match with remaining surfaces, peeling of paint.
(xi)	Internal Water Supply	(a) Repairs / Replacement of defective taps / fittings. (b) Repair to leakage of GI/ SS water pipe lines including joints. (c) Removal of blockage of GI/ SS pipe lines.
(xii)	Roads	(a) Repair of sinked portion of road & potholes, if any

Sl. No.	Description	Defect Liability
(xiii)	Sewage	(a) Rectification of slope / system if found defective during use. (b) Rectification of major blockage in Sewer lines. (c) Cracks & settlement of sewage lines.
(xiv)	Drains	(a) Repair to Drains. (b) Settlement of Drains
(xv)	External Water Supply	(a) Repairs to installations & fittings.
(xvi)	General	(a) All manufacturing defects of structures / fixtures / fittings / equipments other than listed above including any defects of shrinkage or other faults that appear in the work within twelve months after a certificate of its completion is given by the Engineer-in-Charge shall be rectified by the contractor.

14.0 SAFETY MEASURES

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

14.2 **Warning / Caution Boards**

All temporary warning / caution boards / glow signage display such as "Construction Work in Progress", "Keep Away", "No Parking", Diversions & protective Barricades etc. shall be provided and displayed during day time by the Contractor, wherever required and as directed by the Engineer-in-Charge. These glow signage and red lights shall be suitably illuminated during night also. The Contractor shall be solely responsible for damage and accident caused, if any, due to negligence on his part. Also he shall ensure that no hindrance, as far as possible, is caused to general traffic during execution of the work. This signage shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer – in – Charge. Nothing extra shall be payable on this account.

14.3 **Sign Boards**

The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in-Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, client / owner, architects, structural consultants, Department etc. besides providing space for names of other Contractors, Associate contractors and specialized agencies. Nothing extra shall be payable on this account.

14.3.1 Necessary protective and safety equipments shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and used at site.

14.3.2 No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. Only limited quantity of P.O.L may be allowed to be stored at site subject to the compliance of all rules / instructions issued by the relevant authorities and as per the direction of Engineer - in- Charge in this

regard. Also all precautions and safety measures shall be taken by the Contractor for safe handling of the P.O.L products stored at site. All consequences on account of unsafe handling of P.O.L shall be borne by the Contractor.

15.0Special condition for Hardware and Sanitary Wares:

15.1 Engineer-in-Charge will take a decision regarding model numbers of equivalent Door/window hardware, sanitary ware & Water Supply accessories at the time of execution, in case the material, from the manufacturer whose model number is mentioned, is not available. However, in case, the equivalent model so approved, is cheaper than the model already mentioned in item/approved makes list, the price adjustment will be made based on the difference in market rate. In case, the rate of subsequently approved model is more, no extra payment will be made on this account.

16.0 **Ultrasonic Pulse Velocity Method of Test for RCC**

i) The underlying principle of assessing the quality of concrete is that comparatively higher velocities are obtained when the quality of concrete in terms of density, homogeneity and uniformly is good. The consistency of the concrete as regards its general quality gets established. In case of poorer quality lower velocities are obtained. If there are cracks,

voids or flaws inside the concrete which come in the way of transmission of pulse, lower velocities are obtained.

ii) The quality of concrete in terms of uniformity, incidence or absence of internal flaws, cracks and segregation etc. indicative of the level of workmanship employed, can thus be assessed using the guidance given in table below, which have been evolved for characterizing the quality concrete in structure in term of the ultrasonic pulse velocity.

Velocity criterion for Concrete Quality Grading.

Sl. No.	Pulse velocity by Cross Probing (km/sec)	Concrete Quality Grading
1.	Above 4.5	Excellent
2.	4.5 to 3.5	Good
3.	3.5 to 3.0	Medium
4.	Below 3.0	Doubtful

Note: In Case of "doubtful" quality it may be necessary to carry further tests.

iii) Pulse velocity method of test of concrete is to be conducted for DOP (Civil Wing) works as a routine test. The acceptance criteria as per the above table will be applicable which is as per IS 13311 (part-1): 1992. From the above "Good" and "Excellent" grading are acceptable and below these grading the concrete will not be acceptable.

iv) 5% of the total number of RCC members in each category i.e. beam, column, slab and footing may be tested by UPV test method for establishing quality of concrete. It is suggested that test be conducted on RCC beam near joint with column, on RCC column near joint with beam, on RCC footings and rafts. On RCC rafts a suitable grid can be worked out for determining number of tests. In addition, doubtful areas such as honeycombed locations, where continuous seepage is observed, construction joints and visible loose pockets will also be tested.

v) The test results are to be examined in view of the above acceptance criteria "Good" and "Excellent" and wherever concrete is found with less than required quality as per acceptance criteria, repairs to concrete will be made. Honeycombed areas and loose pockets will be repaired by grouting using Portland Cement Mortar/Polymer Modifies Cement Mortar /Epoxy Mortar, etc. after chipping loose concrete in appropriate manner. In areas where concrete is found below acceptance criteria and defects are not apparently visible on surface, injecting approved grout in appropriate proportion using epoxy grout /acrylic Polymer modified cements slurry made with shrinkage

compensating cement / plain cement slurry etc will be resorted to for repairs.(refer relevant chapters from CPWD Hand Book on Repairs and Rehabilitation of RCC Buildings).Repair to concrete will be done till satisfactory results are obtained as per the acceptance criteria by retesting of the repaired area. If satisfactory results are not obtained dismantling and relaying of concrete will be done.

Contractor Engineer-in-charge

1.0 The contractor shall strictly adhere to the following conditions as part of his contractual obligations:

1.1 SITE

1.1.1 The contractor shall ensure that adequate measures are taken for the prevention of erosion of the topsoil during the construction phase.

1.1.2 The Contractor should follow the construction plan as proposed by the Architect /Engineer in Charge to minimize the site disturbance such as soil pollution due to spilling

1.1.3 No excavated earth shall be removed from the campus unless suggested otherwise by Engineer in Charge. All subsoil shall be reused in backfilling/landscape, etc. as per the instructions of the Engineer in Charge. The surplus excavated earth shall be disposed of by the contractor at his own cost for reuse. Royalty on the soil is to be deposited with the State Govt. Department.

1.1.4 The contractor shall not change the natural gradient of the ground unless specifically instructed by the Engineer in Charge. This shall cover all natural features like water bodies, drainage gullies, slopes, mounds, depressions, etc. Existing drainage patterns through or into any preservation area shall not be modified unless specifically directed by the Engineer-in-charge.

1.1.5 The contractor shall not carry out any work which results in the blockage of natural drainage.

1.1.6 The contractor shall ensure that existing grades of soil shall be maintained around existing vegetation and lowering or raising the levels around the vegetation is not allowed unless specifically directed by the Engineer-in-charge.

1.1.8 Overloading of trucks is unlawful and creates the erosion and sedimentation problems, especially when loose materials like stone dust, excavated earth, sand etc. are moved. Proper covering must take place. No overloading shall be permitted.

1.2 **CONSTRUCTION PHASE AND WORKER FACILITIES**

1.2.1 The contractor shall specify and limit construction activity in pre- planned/designated areas and shall start construction work after securing the approval for the same from the Engineer in Charge. This shall include areas of construction, storage of materials, and material and personnel movement.

1.2.2 Preserve and Protect Landscape during Construction

(a) The contractor shall ensure that construction activities should be restricted to the areas outside of the canopy of the tree, or, from a safe distance from the tree/plant by means of barricading. Trees will not be used for support; their trunks shall not be damaged by cutting and carving or by nailing posters, advertisements or other material. Lighting of fires or carrying out heat or gas emitting construction activity within the ground, covered by canopy of the tree is not to be permitted.

(b) The contractor shall take steps to protect trees or saplings identified for preservation within the construction site using tree guards of approved specification.

(c) Contractor should limit all construction activity within the specified area as per the Construction Management Plan (CMP) approved by Engineer in Charge.

(d) The contractor shall ensure that maintenance activities during construction period shall be performed as needed to ensure that the vegetation remains healthy.

1.2.3 The contractor shall provide potable water for all workers.

1.2.4 The contractor shall provide the minimum level of sanitation and safety facilities for the workers at site. The contractor shall ensure cleanliness of workplace with regard to the disposal of waste and effluent; provide clean drinking water and latrines and urinals as per applicable standard. Adequate toilet facilities shall be provided for the workman within easy access of their place of work. Toilet facilities shall be provided from the start of building operations, connection to a sewer shall be made as soon as practicable. Every toilet shall be so constructed that the occupant is sheltered from view and protected from the weather and falling objects. Toilet facilities shall be maintained in a sanitary condition. A sufficient quantity of disinfectant shall be provided. Natural or artificial illumination shall be provided.

1.2.5 The contractor shall ensure that air pollution due to dust/generators is kept to a minimum, preventing any adverse effects on the workers and other people in and around the site. The contractor shall ensure that the speed of vehicles within the site is limited to 10 km/hr.

Spills of dirt or dusty materials will be cleaned up promptly so that spilled material does not become a source of fugitive dust and also to prevent of seepage of pollutant laden water into the ground aquifers.

1.2.6 The contractor shall ensure that no construction leachate (e.g. cement slurry etc.), is allowed to percolate into the ground.

1.2.7 Staging (dividing a construction area into two or more areas to minimize the area of soil that will be exposed at any given time) should be done to separate undisturbed land from land disturbed by construction activity and material storage.

1.2.8 The contractor shall comply with the safety procedures, norms and guidelines (as applicable).

1.2.9 The contractor shall ensure the following activities for construction workers safety, among other measures:

- Guarding all parts of dangerous machinery.
- Precautionary signs for working on machinery
- Maintaining hoists and lifts, lifting machines, chains, ropes, and other lifting tackles in good condition.
- Durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.

1.2.10 The storage of material shall be as per standard good practices to the satisfaction of the Engineer in Charge. Watch and ward of the Contractor's materials shall be his own responsibility.

1.2.11 The contractor shall provide for adequate number of garbage bins around the construction site and the workers facilities and will be responsible for the proper utilization of these bins for any solid waste generated during the construction

1.2.12 Where possible, the contractor shall select materials / vendors, harvested and manufactured regionally, within a 800-km radius of the project site.

1.2.13 The contractor shall ensure that a flush out of all internal spaces is conducted prior to handover. This shall comprise an opening of all doors and windows for 14 days to vent out any toxic fumes due to paints, varnishes, polishes, etc.

1.2.14 Contractor shall make efforts to reduce the quantity of indoor air contaminants that are odorous or potentially irritating harmful to the comfort and well-being of installer and building occupants. Contractor shall ensure that the VOC (Volatile Organic Compounds) content of paints, coatings and primers are low.

1.2.15 Water Use during Construction

Contractor should spray curing water on concrete structure and shall not allow free flow of water. Concrete structures should be kept covered with thick cloth/gunny bags and water should be sprayed on them. Contractor shall do water poundings on all sunken slabs using cement and sand mortar.

1.2.16 The contractor shall provide O & M Manuals wherever applicable.

1.2.17 MATERIALS & FIXTURES FOR THE PROJECT

(i) Contractor will produce wherever feasible certificate regarding distance of the source of the relevant material.

(ii) Unless otherwise stated cement used at site for mortar, plaster, building blocks, etc. shall be PPC (Portland Pozzolana Cement). The PPC must meet the requirements of IS 1489 (Part I) as regards to fly ash content in cement.

(iii) The contractor shall ensure that all paints, polishes, adhesives and sealants used both internally and externally, on any surface, shall be Low VOC products. The contractor shall get prior approval from the Engineer in Charge before the application of any such material.

(iv) The contractor shall ensure that all composite wood products/agro-fiber products used for cabinet work, etc. do not contain any added urea formaldehyde resin.

1.2.18 RESOURCES CONSUMED DURING CONSTRUCTION

(a) The contractor shall ensure that the water and electricity is not wasted during construction. The Engineer in Charge can bring to the attention any such wastage and the contractor will have to ensure that such bad practices are corrected.

(b) The contractor shall ensure that all run-off water from the site, during construction is collected and reused to the maximum.

1.2.19 EQUIPMENT

(a) To ensure energy efficiency during and post construction all pumps, motors and engines used during construction or installed, shall be subject to approval and as per the specifications of the Engineer in Charge.

(b) Generally, the lighting installed by the contractor around the site and at the labour quarters during construction shall be CFL bulbs of the appropriate illumination levels.

1.0 EARTH WORK: -

1.1 Earth work shall be executed as per CPWD **specifications 2019**, Volume-I with up-to date correction slips. In addition to that following specifications shall also be followed:

1.2 EARTH WORK FOR MAJOR WORKS

1.2.1 Excavation shall be undertaken to the width of the Basement/Retaining wall footing including necessary margins for construction operation as per drawing or directed otherwise. Where the nature of soil or the depth of the trench and season of the year, do not permit vertical sides, the contractor at his own expense shall put up the necessary shoring, strutting and planking or cut slopes with or without steps, to a safer angle or both with due regard to the safety of personnel and works and to the satisfaction of the Engineer in Charge. Measurement of plan area of excavation for payment shall be permitted only.

1.2.2 All the major excavation shall be carried out by mechanical excavator. No extra payment shall be made for that.

1.2.3 The contractor shall make at his own cost all necessary arrangements for maintaining water level, in the area where works are under execution low enough so as not to cause any harm to the work shall be considered as inclusive of pumping out or bailing out water, if required, for which no extra payment shall be made. This will include water coming from any source, such as rains, accumulated rain water, floods, leakages from sewer and water mains subsoil water table being high or due to any other cause whatsoever. The contractor shall make necessary provision of pumping, dredging bailing out water coming from all above sources and excavation and other works shall be kept free of water by providing suitable system approved by the Engineer-in-charge. In order to avoid possibility of basement floor of main building being getting uplifted/damaged due to water pressure, the contractor shall lower the ground water table below the proposed foundation level by boring tube wells all around the proposed building using well point sinking method or any suitable method as approved by Engineer-in-charge. Sub soil water table shall be maintained at least 50 cm. below the P.C.C. level during laying of P.C.C. water proofing treatment, laying of basement raft and beams including filling of earth/sand under the basement floor. The water table shall not be allowed to rise above base of raft level until completion of outer retaining walls including water proofing of vertical surface of walls and back filling along the walls upto ground level and until the structure attains such height to counter balance the uplift pressure. However, the contractor should inspect the site and make his own assessment about sub-soil water level likely to be encountered at the time of execution and quote his rates accordingly. Rate of all items are inclusive of pumping out or bailing out water, if required. Nothing extra on this account whatsoever shall be paid to him. The sequence of construction shall be got approved by the Engineer-in-charge.

1.2.4 The contractor shall take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades including signs, markings, flags, lights and flagman, as necessary at either end of the excavation/embankment and at such intermediate points as directed by the Engineer-in-charge for the proper identification of construction area. He shall be responsible for all damages and accidents caused due to negligence on his part.

1.2.5 The contractor shall provide suitable barricading with suitably painted single row of G.I. Sheets about 3'- 0" wide (90 cms.) nailed or bolted with wooden poles spaced 2 to 3 metre apart and each pole 1.6 m to 2 m long 8 cm. to 10 cm. dia. The poles will be embedded in mobile iron pedestal rings suitably framed for giving stable support as per direction of the Engineer-in-charge. All management (including watch and ward) of barricades shall be the full responsibility of the contractor. The barricades shall be removed only after completion of the work or part of the work. The contractor's rate shall include all above items of work and nothing extra shall be paid to the contractor over and above his quoted rates.

2.0 R.C.C. WORK: - The contractor shall use Design mix concrete.

2.1 DESIGN MIX OF CONCRETE FOR RMC.

2.1.1 The RCC work shall be done with Design Mix Concrete. Wherever letter M has been indicated, the same shall imply for the Design Mix Concrete. The Design Mix Concrete will be designated based on the principles given in IS: 456, 10262 & SP 23. The Conditions & Specifications stated herein shall have precedence over all conditions & specifications stated in relevant I.S. Codes/C.P.W.D. Specifications. The concrete mix shall be designed for the specified target mean compressive strength in order to ensure that work test result do not fall below the acceptance criteria specified for the concrete mix. The Contractor shall design mixes for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting the requirements specified.

(a) The contractor has to submit design mix without use of admixtures.

(b) Admixture may be added (by maintaining the minimum cement content as given under para- 2.1.3) in case of specific technical requirement so as to meet the workability / slump requirement or for any other reason but nothing extra is to be paid to contractor on account of adding admixtures.

2.1.2 The sources of coarse aggregate, fine aggregate, water, admixture & cement to be used in concrete work shall be identified by the contractor & he will satisfy himself regarding their conforming to the relevant specifications & their availability before getting the same approved from the Engineer-InCharge.

(a) **Coarse Aggregate:-** As per CPWD Specifications

(b) **Fine Aggregate:-** As per CPWD Specifications

(c) **Water:-** It shall conform to requirements laid down in IS:456-2000 / Para 3.1.1 of CPWD Specifications. If on testing, water from the source is not found fit for construction, the necessary arrangement for treatment of water shall have to be made by the contractor at the site and nothing extra shall be payable for the same.

(d) **Cement:-** 43 grade ordinary Portland Cement conforming to IS: 8112 / Portland Pozzolana Cement (PPC) conforming to IS: 1489 (Part-1) as required in the work from reputed manufacturers of cement such as ACC, ULTRATECH, VIKRAM, SHREE CEMENT,AMBUJA, JAYPEE CEMENT, CENTURY CEMENT & J.K. CEMENT etc.The cement of approved make as aforesaid in 50 kg. bags bearing manufacturer's name and ISI marking, along with manufacturers test certificate for each lot shall be procured by the contractor. Portland Pozzolana Cement (PPC) is to be used for RCC works only subject to fulfillment of conditions of circular No. CDO/SE(RR)/Fly ash (MAN) 02 dated 09.04.2009. However, if the contractor uses higher grade of cement or uses Ordinary Portland Cement (OPC) only nothing extra shall be paid.

(e) **Admixture/ Plasticizer:-** The admixture shall conform to IS: 9103. Whenever required, the admixture of approved quality & approved make only shall be used to attain the required workability. Nothing extra on account of use of Admixture / Plasticizer shall be payable.

2.1.3 Water Cement Ratio and Slump:-

2.1.3.1 In proportioning a particular mix, the manufacturer/producer/contractor shall give due consideration to the moisture content in the aggregates, and the mix shall be so designed as to restrict the maximum free water cement ratio to less the 0.5.

2.1.3.2 Due consideration shall be given to the workability of the concrete thus produced. Slump shall be controlled on the basis of placement in different situations. For normal methods of placing concrete, maximum slump shall be restricted to 100mm when measured in accordance with IS:1199.

2.1.3.3 The minimum cement content, maximum free water-cement ratio and minimum grade of concrete are individually related to exposure as per Table 5 of IS: 456, 2000 and As per CPWD Specifications (Volume-I) 2019 with up-to date correction slips.

2.1.4 Characteristic Compressive Strength Compliance Requirement

Specified Grade	Mean of the Group of 4 Non-overlapping consecutive test results in N/mm2 (Min)	Individual Test Results in N/mm2 (Min)
(1)	(2)	(3)
M15 Or Above	≥ F_{ck} + 0.825 x established standard deviation (rounded off to nearest 0.5 N/mm^2) Or F_{ck} +3N/mm^2, whichever is greater where F_{ck} is characteristic compressive strength of CC cube at 28 days.	≥ F_{ck} – 3 N/mm^2

Note :

(i) In the absence of established value of standard deviation, the values given in Table as mentioned below may be assumed, and attempt should be made to obtain results of 30 samples as early as possible to establish the value of standard deviation.

(ii) For concrete of quantity up to 30 m^3 (where the number of samples to be taken is lessthan four as per frequency of sampling given in para 2.4, the mean of test results of allsuch samples shall be F_{ck} + 4 N/mm^2, minimum and requirement of minimum individual test result shall be F_{ck} - 2 N/mm^2, minimum. However, when the number of samples is only on as per para 2.4, the requirement shall be F_{ck} + 4 N/mm^2, minimum

2.1.5 The Contractor shall engage one of the following approved laboratories / test house for designing the concrete mix in accordance with relevant IS Code and to conduct laboratory tests to ensure the target strength & workability criteria for a given grade of concrete: -

i) **AnyIIT/ Any NIT**

ii) **Approved Lab/Govt. Engineering Institutions as directed by the Engineer-in-Charge with prior approval of the Chief Engineer-I.**

The various ingredients for mix design / laboratory tests shall be sent to the lab / test houses through the Engineer-in-charge and the samples of such aggregates sent shall be preserved at site by the department.

2.1.6 The contractor shall submit the report on design mix from any of above approved laboratories for approval of Engineer in Charge within 30 days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the design mix is approved. In case of White Portland Cement and the likely use of admixtures in concrete with ordinary Portland/White Portland Cement, the contractor shall design and test the concrete mix by using trial mixes with white cement and / or admixtures also, for which nothing extra shall be payable.

2.1.7 In case of change of source or characteristic properties of the ingredients used in the concrete mix during the work, the contractor as per the directions of the Engineer-in-charge shall submit a revised laboratory mix design report conducted at laboratory established at site.

2.1.8 All cost of mix designing and testing, connected therewith, including charges payable to the laboratory shall be borne by the Contractor including redesigning of the concrete mix whenever required & as directed by Engineer-In-Charge.

2.1.9 The mix design for a specified grade of concrete shall be done for a target mean compressive strength

$$T_{ck} = F_{ck} + 1.65s$$

Where F_{ck} = Characteristic compressive strength at 28 days.

s =Standard deviation which depends on degree of quality control.

The assumed values of standard deviation for different grades of concrete shall be as follows:

GRADE OF CONCRETE	STANDARD DEVIATION
M-20	4.0
M-25	4.0
M-30	5.0
M-35	5.0

Note: The above values correspond to the site control having proper storage of cement; weight batching of all materials; controlled addition of water; regular checking of all materials, aggregate gradings and moisture content; and periodical checking of workability and strength. Where there is deviation from the above the values given in the above table shall be increased by 1 N/mm^2.

2.1.10 TRIAL BATCHES

(a) The designed mix proportions shall be checked for target mean compressive strength by means of trial batches.

(b) Minimum three sets of separate preliminary tests shall be carried out for each trial batch of concrete mix. Each test shall comprise of six specimens and only one test-set of six specimens shall be made on any particular day.

(c) The quantities of materials for each trial mix shall be sufficient for at least six specimens (cubes) and the concrete required for carrying out workability tests.

(d) The workability of trial mix No.1 shall be measured and mix shall be carefully observed for freedom from segregation, bleeding and its finishing characteristics. The water content, if required, shall be adjusted corresponding to the required changes in the workability.

(e) With the modified Water Content, the mix proportions shall be recalculated by keeping with water cement ratio unchanged. The mix proportion, as modified, shall form the Trial Mix No.2 and tested for the specified strength and workability.

(f) In addition, trial mix No.3 and 4 shall be designed by keeping water contents same as that determined for trial mix 2 but varying the water cement ratio by + 10 percent of the specified value and tested for their design characteristics.

(g) Out of the six specimens of each set, three shall be tested at seven days and remaining three at 28 days. The preliminary tests at seven days are intended only to indicate the strength to be attained at 28 days, while the design mix shall be approved only on the basis of test strength at 28 days.

2.1.11 **APPROVAL OF DESIGN MIX**

The design mix shall be considered satisfactory and approved if at least three preliminary test-sets individually satisfy the following strength and workability criteria:

(a) The average strength of each test-set is not less than the specified target mean compressive strength (T_{ck}).

(b) The strength of any specimen cube is not less than 0.85 T_{ck}.

(c) The concrete mix is of required degree of workability and acceptable concrete finish.

2.2 General Requirement of Ready Mix Concrete (RMC):-

(a) The contractor shall has to use Ready Mix Concrete (RMC) as per IS: 4926. The contractor shall ensure that transit mixtures shall transport the concrete to site. All the precautions shall be taken during the transportation and handling of concrete to achieve the desired strength, durability, etc. as envisaged in the Mix Design. Contractor has to get the approval from Engineer-In-Charge regarding source of RMC by giving the details of such plants indicating name of owner / company, its location, technical establishment, past experience and text of Memorandum of Understanding (proposed to be entered between purchaser and supplier). The Engineer-in-Charge, after satisfying himself about quality / capability of the company shall give approval in writing (subject to drawing of MOU). The MOU shall be drawn with RMC plant owner / company and submitted to Engineer-in-Charge within a week of such approval. The contractor will not be allowed to purchase RMC without completion of above formalities for use in the project. Notwithstanding the approval granted by Engineer-in-Charge in aforesaid manner, the contractor shall be fully responsible for quality of concrete including input control, production, transportation and placement etc. The Engineer-in-Charge will reserve the right to deploy his supervisor at plant site to inspect at any such stage and reject the material / concrete etc. if he is not satisfied about quality of material / product.

(c) All measuring equipment shall be maintained in a clean and serviceable condition and their accuracy shall be checked at least once a month.

(d) Only single sized excellent quality stone aggregate shall be brought to site of work from the approved source. The grading of the stone aggregate shall be controlled by blending the aggregate of different sizes in the required proportions at site of work. The aggregate of different sizes shall be stock-piled separately, preferably a day before use.

The grading of coarse and fine aggregates shall be checked as frequently as possible and as directed by the Engineer-In-Charge to ensure that the specified grading and quality of aggregate is maintained.

(e) It is important to maintain the Water Cement Ratio constant at its specified or approved value by making adjustment for the moisture contents of both fine and coarse aggregates. The moisture contents in the aggregate shall be determined as frequently as possible in keeping with the weather conditions and as per the provisions of IS: 2386 (Part-III).

2.3 OTHER OPERATIONS: -

All other operations in concreting work like mixing, slump, laying, placing of concrete, compaction, curing etc. not mentioned in this particular specifications for Ready Mix of Concrete shall be as per CPWD Specifications.

2.4 SAMPLING: -

2.4.1 **General:**

Samples from fresh concrete shall be taken as per IS 1199 and cubes shall be made, cured and tested at 28 days in accordance with IS 516. 15.1.1 In order to get a relatively quicker idea of the quality of concrete, optional tests on beams for modulus of rupture at 72 + 2 h or at 7 days, or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. For this purpose, the values should be arrived at based on actual testing. In all cases, the 28 days compressive strength specified in Table 2 of code of practice, IS:456 2000 shall alone be the criterion for acceptance or rejection of the concrete.

(a) FREQUENCY OF SAMPLING: -

(i) A random sampling procedure shall be adopted to ensure that the sampling is spread over the entire period of concreting and cover all mixing units. The concrete work shall be notionally divided into lots as under for the purpose of sampling conditions.
-- Footings, rafts etc.
-- Columns and walls at all levels.
-- Beams at all levels.
-- Slabs at all levels.

(ii) At least one test sample shall be taken for each lot of concrete work.

(iii) Each grade of concrete shall form different lot for testing.

(iv) The minimum frequency of sampling of concrete of each grade shall be in accordance with CPWD specification 2019, Vol I with up to date correction slips.

(v) The concrete work shall be assessed on day to day basis & samples shall be taken as specified.

(vi) Work strength test shall be conducted in accordance with IS: 516 on random sampling.

However, the minimum frequency of sampling of concrete of each grade shallbe in acordance with the following:

***Quantity of Concrete in theWork, (*cum)**	***Number of Samples***
1 – 5	1
6 – 15	2
16 – 30	3
31- 50	4
51 and above plus one additional sample foreach additional 50 m3 or part thereof	4

NOTE- *At least one sample shall be taken from each Shift. Where concrete is produced at continuous production unit, frequency of' sampling may be decided by Engineer-in-charge in such a manner so as to ensure that each concrete batch shall have a reasonable chance of being tested.*

2.4.5 Test Specimen

Three test specimens shall be made for each sample for testing at 28 days. Additional samples may be required for various purposes such as to determine the strength of concrete at 7 days or at the time of striking the formwork, or to determine the duration of curing, or to check the testing error. Additional samples may also be required for testing samples cured by accelerated methods as described in IS 9103. The specimen shall be tested as described in IS 516.

2.4.6 TEST RESULTS OF SAMPLES: -

The test results of the sample shall be the average of the strength of three specimens. The individual variation shall not be more than ± 15% percent of the average. If variation is more, the test results shall be treated as invalid. The tests shall be carried out at approved laboratory as directed by the Engineer-in-Charge.

2.4.7 ACCEPTANCE CRITERIA

2.4.8 Compressive Strength

The concrete shall be deemed to comply with the strength requirements when both the following conditions are met:

a) The mean strength determined from any group of four consecutive test results compiles with the appropriate limits in col 2 of Table given under para 2.1.4 above.

b) Any individual test result complies with the appropriate limits in col 3 of Table given under para 2.1.4 above.

2.4.9 Quantity of Concrete Represented by Strength Test Results

The quantity of concrete represented by a group of four consecutive test-results shall include the batches from which the first and last samples were taken together with all intervening batches. Where the mean rate of sampling is not specified the maximum quantity of concrete that four consecutive test results represent shall be limited to 60 m3.

2.4.10 Concrete of each grade shall be assessed separately.

2.4.11 Concrete is liable to be rejected if it is porous or honey-combed, its placing has been interrupted without providing a proper construction joint, the reinforcement has been displaced beyond the tolerances specified, or construction tolerances have not been met. However, the hardened concrete may be accepted after carrying out suitable remedial measures to the satisfaction of the Engineer-in-Charge.

2.**5** **MEASUREMENT** –

(i) As per CPWD Specifications (Volume-I) 2019 with up-to date correction slips

(ii) In respect of all projected slabs at all levels including cantilever, canopy, the payment for the RCC work shall be made under the item RCC slabs. The payment for shuttering at the edges shall be made under item of centering and shuttering for RCC slabs. Nothing extra shall be paid for the side shuttering at the edge of these projected balconies / projected verandah slabs.

2.6 **TOLERANCES -** As per CPWD Specifications.

2.7 **RATES: -**

(i) The rate includes the cost of materials, labour and T&P, including mixing, placing, transportation involved in all the operations described above except for the cost of centring, shuttering & reinforcement which will be paid for separately. It includes finishing i.e. making the top surface of smooth/in required level with trowel etc.

(ii) In case of rejection of concrete on account of unacceptable compressive strength, governed by para "Standard of Acceptance" as above, the work for which samples have failed shall be redone at the cost of contractor. However, the Engineer-in-charge may order for additional tests (like cutting cores, ultrasonic pulse velocity test, load test on structure or part of structure, etc) to be carried out at the cost of contractor to ascertain if the portion of structure wherein concrete represented by the sample has been used, can be retained on the basis of results of individual or combination of these tests. The Contractor shall take remedial measures necessary to retain the structure as approved by the Engineer-in-charge without any extra cost. However, for payment, the basis of rate payable to contractor shall be governed by the 28 days cube test results and reduced rates shall be regulated in accordance with CPWD Specifications.

2.8 **RCC WORK (ORDINARY**)

2.8.1 The work shall be done in accordance with CPWD Specifications (Volume-I) 2019 with up-to date correction slips

2.8.2 Water Cement ratio for Ordinary RCC work shall not be more than 0.5. Contractor shall use concrete mixture of proper design having arrangement for measuring water for mixing of concrete.

2.9 **FORM WORK**

2.9.1 The work shall be done in general as per CPWD Specifications.

2.9.2 Only M.S. centring / shuttering and scaffolding material unless & otherwise specified shall be used for all R.C.C. work to give an even finish of concrete surface. However, marine-ply shuttering in exceptional cases as per site requirement may be used on specific request from contractor to be approved by the Engineer-in-Charge. But nothing extra shall be paid on this account.

2.9.3 Nothing extra shall be paid for the centering and shuttering, circular in shape whenever the formwork is having a mean radius exceeding 6m in plan.

2.9.4 Nothing extra shall be paid for grid beams and the corresponding slabs having clear span more than 1.20 metres.

2.9.5 In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specifications, the level of top surface of R.C.C. shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the contractor except the places where different type of flooring is provided in the same room.

As per general engineering practice, level of floors in toilet / bath, balconies, shall be kept 12 to 20mm or as required, lower than general floors, shuttering should be adjusted accordingly. Nothing extra is payable on this account.

2.9.6 Steel shuttering as approved by the Engineer-in-Charge shall be used by the contractor. Minimum size of shuttering plates shall be 600mm x 900mm except for the case when closing pieces are required to complete the shuttering panels.

Dented, broken, cracked, twisted or rusted shuttering plates shall not be allowed to be used on the work. The shuttering plates shall be cleaned properly with electrically driven sanders to remove any cement slurry or cement mortar or rust. Proper shuttering oil or de-bonding compound shall be applied on the surface of the shuttering plates in the requisite quantity before assembly of steel reinforcement.

2.10 REINFORCEMENT:-

2.10.1 The reinforcement shall be done as per CPWD Specifications.

2.10.2 The rate of item of reinforcement of RCC work includes all operations including straightening, cutting, bending, welding, binding with annealed steel wire or welding and placing in position at all the floors with all leads and lift complete as per CPWD Specifications.

2.10.3 The contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings, spacer blocks of required shape and size. Chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. **Spacer blocks shall be casted well in advance with approved proprietary pre-packed free flowing mortars (Conbextra as manufactured by M/s Fosroc Chemicals India Ltd. or of approved equivalent)** of high early strength and same colour as of surrounding concrete. However, Cover Guard Bars shall also be used to maintain proper cover of RCC Columns in addition to spacer blocks as mentioned above. Pre-cast cement mortar/concrete blocks/blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-charge, rate of RCC items is inclusive of cost of such cover blocks & Cover Guard Bars.

2.11 PRE-CAST RCC WORK

2.11.1 The work shall be done in accordance with CPWD Specifications.

2.11.2 Pre-cast reinforced concrete units shall be of grade or mix as specified. Provision shall be made in the mould to accommodate fixing devices such as hooks etc. and forming of notches and holes. Each unit shall be cast in one operation. A sample of the unit shall be got approved from Engineer-in-charge before taking up the work.

2.11.3 Pre-cast units shall be clearly marked to indicate the top of member and its location.

2.11.4 Pre-cast units shall be stored, transported and placed in position in such a manner that these are not damaged.

2.11.5 The compaction of the concrete shall be done by vibrating, table or external vibrator, as approved by Engineer-in-charge. The rate quoted for the item shall include the element for framework and mechanical vibration.

2.11.6 Rate for item includes cost of all materials, labour, and all operations involved. Cost of M.S. frames, lugs including their welding, lifting hooks is also included.

2.11.7 In the item of providing and fixing precast reinforced cement concrete in shelves the cost of cutting chases and making good the same shall be inclusive in the item and nothing extra shall be paid on this account.

3.0 BRICK WORK:-

3.1 The brickwork shall be carried out with good quality well burnt FPS bricks of class designation 75 as per CPWD Specifications. Exposed brick work for ground level to plinth level shall be executed with selected FPS bricks of class designation 75.

3.2 The rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work.

3.3 Brick work provided around shaft or lifts walls or around slab cutouts shall be measured in the brick for corresponding floor level. Nothing extra shall be paid on this account.

3.4 M.S. Strip/ Bar provided at every third course of half brick masonry shall be in single piece. If required, welding joint can be used without overlaps. Nothing extra shall be paid for welding and overlaps.

4.0AUTOCLAVED AERATED CEMENT BLOCKS:

Only ISI marked Autoclaved Aerated Cement Blocks of Grade- I as per IS: 2185 (Part-III): 1984 shall be used in the work. These Autoclaved Aerated Cement Blocks shall be manufactured & tested as per IS 2185 (Part-III): 1984, except sizes of the blocks which may be as per site requirements and approved by Engineer-in-charge. The 28 days compressive strength of these blocks should not be less than 4 N/mm2. All other parameters including physical requirements thereof shall conform to IS: 2185 (Part-III): 1984.

5.0 STONE / MARBLE WORK

5.1 General: - The execution of stones work shall be in general as per CPWD Specifications (Volume-I) 2019, with up-to-date correction slips.

5.2 GRANITE/ MARBLE WORKS

5.2.1 The granite/ marble stonework shall, in general, be carried out as per the CPWD Specifications. The specifications for dressing, laying, curing, finishing, measurements, rate etc. for the granite/ marble stone flooring shall be same as that of works for the Marble flooring, skirting and risers of steps under Flooring Sub Head of the CPWD Specifications. The wall lining / veneer work with granite/ marble stone shall be as per the CPWD Specifications for Marble work Sub Head.

5.2.2 The decision of the Engineer-in-Charge as regards the approval of the samples for the various types of the granite/ marble stones shall be final and binding on the Contractor. No claim of any kind whatsoever shall be entertained from the Contractor on this account. The Contractor shall then procure and get the mock up prepared at site of work for approval of quality of workmanship and the granite/ marble stone as specified. The mock up shall be prepared in lift lobby, toilet etc. on one of the floors. The size of the stones shall be as per the architectural drawings. If the quality of the workmanship and the material is as per the required standards, the mock up shall be allowed as part of the work and measured for payment and shall not be dismantled. Otherwise, it shall be dismantled by the contractor as directed by the Engineer-in-Charge and taken away from the site of the work at his own cost. Nothing extra shall be payable on this account.

5.2.3 That the curvilinear profile of the entrance steps for the building shall be negotiated in segmental manner (using trapezoidal shaped granite stone pieces with straight edges for treads and rectangular stone pieces for the risers) and not in curved profiles as specified earlier. However the granite/ marble stone slabs shall be cut to required sizes and shapes, as per the architectural drawings, to negotiate the curved steps in segmented manner. The risers shall also be cut to required sizes and shapes and the edges chamfered at the joints, all as per the architectural drawings. However, the Contractor shall prepare the detailed shop drawings for the same and commence work only after the approval by the Engineer-in-Charge. The rate shall also include any consequent wastage, incidental charges involved in this work. Nothing extra shall be payable on this account. For the purpose of payment, the actual area of each type of granite/ marble stone as laid shall be measured.

5.2.4 For the steps (risers and treads) in the linear profile, the granite/ marble stone shall be provided in single pieces up to 2.0m as per the architectural drawings, unless otherwise specifically permitted by the Engineer-in-Charge. Wherever grooves are required to be provided the same is to be done as per architectural drawings and as directed by the Engineer-in-charge. Wherever required, the joints shall be provided as per the architectural drawings. Nothing extra shall be payable on these accounts.

5.2.5. The granite/ marble slabs used for providing and fixing in the sills, soffits and jambs of doors, windows, ventilators and similar locations shall be in single piece unless otherwise directed by the Engineer-in-Charge. Wherever stone slab other than in single piece is allowed to be fixed, the joints shall be provided as per the architectural drawings and as per the directions of the Engineer-in-Charge. In the cabin areas, the joints in sills shall preferably be provided in line with the partition wall. Depending on the number of joints, as far as possible, the stone slabs shall be procured and fixed in slabs of equal lengths as per the architectural drawings and as directed by Engineer-in-Charge.

5.2.6 While fixing the granite/ marble slabs in sills, soffits and jambs of doors, windows, ventilators etc., rebates shall be made by overlapping the stones at the required places for fixing shutters for doors, windows and ventilators etc. as shown in the architectural drawings and as per the directions of the Engineer-in-Charge. Epoxy based adhesives shall be used for fixing the granite/ marble stones to each other, or wherever required. The authorized overlap as per the architectural drawings or as directed by the Engineer-in-Charge shall be measured for payment under the same item. However, any extra mortar thickness required due to the overlap arrangement shall be deemed to have been included in the rate of this item. Nothing extra shall be payable on this account. The granite/ marble stone slab shall be fixed over low level storage cabinets using necessary adhesive as per the manufacturer's specification. The stone shall have uniform thickness and shall be provided in sizes as per the architectural drawings. The stone slab shall have uniformly leveled surface after fixing. All the joints shall be finished smoothly in a workmanlike manner.

5.2.7 The granite/ marble work shall be adequately protected by a layer of Plaster of Paris, which

shall be maintained throughout and removed just before handing over of the works for which nothing extra shall be payable.

5.2.8 **Acceptance Criteria**: - The stone/tile work shall carry Five years guarantee after completion of work against unsound material, workmanship as per guarantee bond. Five years guarantee in prescribed Performa attached under **PageNo. 97 of Part-B**must be given by the specified firm, which shall be counter signed by the contractor, in token of his overall responsibility. If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor.

5.3 SAMPLES FOR STONE WORK

Samples of each item of stone work either individually or in combination shall be prepared for approval of Engineer-in-charge before commencement of work.

6.0 WOOD WORK

6.1 The wood work in general shall be carried out as per CPWD Specifications (Volume-I) 2019, with up-to-date correction slips.

6.2 The factory shall be got approved from the Engineer-in-charge before commencement of work for factory made wood work. The sample of timber to be used shall be deposited by the contractor with Engineer-in-charge before commencement of work.

6.3 The shape and size of beading shall be as per drawings. The joints of beading shall be metred.

6.4 Timber shall be of specified species, good quality and well-seasoned. It shall have uniform colour, reasonably straight grains and shall be free from knots, cracks, shakes and sapwood. It shall be close grained. The contractor shall deposit the samples of species of timber to be used with the Engineer-in-Charge for testing before commencement of the work.

6.5 Wood work shall not be painted, oiled or otherwise treated before it has been approved by the Engineer-in-charge. All portion of timber including architrave abutting against masonry, concrete, stone or embedded in ground shall be painted with approved wood preservative or with boiling coal tar.

6.6 The contractor(s) shall produce cash voucher and certificates from approved Kiln Seasoning Plants about the timber used on the work having been kiln seasoned and chemically treated by them, falling which it would not be so accepted as kiln seasoned and/or chemically treated.

6.7 Transparent sheet glass conforming to IS: 2835 – 1977 shall be used. Thickness being governed as under unless otherwise specified in the item in wood work/steel work:

Area of Glazing	Thickness
(a) For glazing area up to 0.50 Sqm	4.0 mm
(b) For glazing area more than 0.50 Sqm	6.0 mm

6.8 Factory made wooden flush door shutters shall be carried out as per CPWD specifications (Volume-I)2019 with upto date correction slips).

6.9 The work shall be executed through specialized agencies to be approved by the Engineer in Charge.

6.10 The contractor shall propose well in advance to Engineer-in-Charge, the names and address of the factory where from the contractor intends to get the shutters manufactured along with the credential of the firm. The contractor shall place the order for manufacturing of shutters only after obtaining approval of the Engineer in Charge whose decision in this case shall be final & binding. In case the firm is not found suitable he shall propose another factory. The factory may also be inspected by a group of officers before granting approval; shutters shall however he accepted only if these meet the specified test.

6.11 Contractor will arrange stage wise inspection of the shutters at factory by the Engineer-in-Charge or his authorized representative. The contractor will have no claim if the shutters brought at site in part or full lot are rejected by the Engineer-in-Charge due to bad workmanship / quality. Such defective shutters will not be measured and paid. The contractor shall remove the same from the site of work within 7 days after the written instruction in this regard are issued by the Engineer-in-Charge.

6.12 The shutters should be brought at site without primer / painting.

7.0 **Fire Rated Doors**

Fire rate doors shall conform to specifications lay down by NBC and/or relevant BIS codes etc. and shall have the following additional specifications:

7.1 **General Steel Door:**

Providing and fixing 45 ± 2 mm thick pure polyester steel door shutter with double skinned with 0.8 mm (22 gauge) galvanized steel sheets (bending radius 1.2 mm) spangle free of size to fit the above frame, stressed-skin design, (no visible joint on faces), lock seam joint (without any visible weld joints on the vertical edges also) and flush top with inverted channel; and with paper honey-comb infill bonded to the skin with pu/co-polymer resins, pre-punched /pre-drilled to receive ironmongery manufactured by approved vendor. Suitable reinforcement is to be provided in the door shutter to receive the hardware.

The doors with double shutters are to be provided with astragals on both sides & astragals to be fitted to the door without any fasteners. The shutter to be fixed with SS hinges 304 grades (size 100x75x3mm). The door frame (section size 100x57) should be made from 1.2mm thick GI steel /GP steel pressed to single rebate profile for better structural strength. Frames are to be fixed with fasteners. The entire assembly pre-finished with epoxy/PU/co-polymer or powder coated, as approved, tested to 4020 (type tests for doors) as applicable like slamming, edge-loading, racking, misuse etc. & guaranteed for 1, 00,000 slams test. Complete door shutter including frame shall be measured for payment. All fittings, fixtures, hinges & vision panel shall be paid separately.

7.2 **2 Hrs GI - Steel Fire Rated Door:**

Providing and fixing 45 ± 2mm Fire rated door of Pure Polyester (UV Resistant Grade) Powder coated, 120 minutes Fire Rated (for Stability & Integrity) Galvanized (Zinc Coated) Steel Door and frame conforming to IS 3614 Part 2 & BS 476 part 22. The Door Shutter should be made of 1.2mm thick steel pressed formed to provide a 45mm thick fully flush double skin door shell with lock seam joints at stile edges or as per manufactures specification prototype passed at GQMC-Government Quality Marking Center or CBRI. The internal construction of the door to be phenolic resin impregnated specially designed rock wool with suitable internal reinforcement. Suitable reinforcement is to be provided in the door shutter to receive the hardware and hardware to be fixed on the door with no visible fasteners. The doors with double shutters are to be provided with astragals on both sides & astragals to be fitted to the door without any fasteners. The shutter to be fixed with SS hinges 304 grade (size 100x75x3mm). Including the door frame (section size 143x57) made from 1.6mm thick GI steel pressed to double rebate profile for better structural strength. Frames are to be fixed with fasteners. The Gap between the frame & shutter should not exceed 3mm on all side except at the bottom where the gap can go up-to a maximum of 7mm. The entire assembly to be pre-finished -factory finished heat ovened, powder coated, & made as per drawing. The shutter will be provided with Vision Panel with Clear fire rated glass from with proper beading all around etc. Complete door shutter including frame shall be measured for payment. All fittings, fixtures, hinges &vision panel shall be paid separately.

7.4 Door Threshold

Door thresholds shall be provided as shown on drawing. Doors without threshold shall have bottom tie of approved type.

7.5 Handling and Storage of Fabricated Materials

All doors, windows, etc. shall be packed and crated properly before dispatch, to ensure that there shall be no damage to the fabricated materials. Loading into wagons and trucks shall be done with all care to ensure safe delivery of materials at site in undamaged condition.

While taking delivery of items supplied by Owner, the Contractor shall satisfy himself that the items supplied are upto the specified standard. Any defect detected shall promptly be brought to the notice of the Engineer.

All doors, windows etc. shall be stored under cover in a way to prevent damage or distortion. Special care shall be taken to prevent staining of aluminium products by rust, mortar etc.

7.6 Assembly & Erection at Site

In general, the fixing of steel doors, windows, ventilators, louvers, etc. shall conform to IS: 1081 and as shown on drawings. The contractor shall assemble and install all steel doors. Sashes, fixed metal louvers etc. including transoms and mullions for composite units in respective places as shown on drawings, keeping proper lines and levels, and in approved workmanship manner, to give trouble free and leak-proof installations. The installation shall be done according to recommendation of the manufacturer, and/or as per direction of the Engineer-in-charge. The installation shall be carried out under the supervision of the manufacturer's representative. The contractor shall take every precaution against damage of the components during installation. Necessary holes, chases, etc. required for fixing shall be made by the Contractor and made good again as per original, after installation, and nothing extra shall be

payable to the contractor on this account.
After installation of steel doors all abrasions to shop-coat of paint shall be retouched and made good with the same quality of paint used in shop coat.
All coupling mullions, transoms, frame, etc. in contact with adjacent steel and other members, shall be well bedded in mastic. The Contractor shall bring to the site the mastic cement in original sealed containers of manufacturer and shall apply it as per the instructions. For all frames supplied by either the Owner or the contractor, mastic shall be supplied by the Contractor and caulking done properly as per drawings, Specifications and as per instructions of the Engineer.
Door shutters partition hardware fixtures etc. shall be fixed only after major equipment has been installed in rooms.
Wherever required, nylon cords of approved quality shall be supplied along with pivoted sashes and shall be of adequate length to terminate one metre from the floor. Loose ends of cards shall end in metal or plastic pull as approved by the Engineer-in-charge.

7.7 **Acceptance Criteria**

7.7.1 For Fabricated Items

Overall dimensions shall be within ± 1.5 mm of the size shown on drawings.
Mullions, transoms etc. shall be in one length and permissible deviations from straightness shall be limited to ± 1.5 mm from the axis of the member.
Door and window shutters shall open without jamming. The clearance at heat and jamb for door shutters shall not exceed 1.5 mm. For double leaf doors, the gap at the meeting stiles shall not be more than 1.5 mm.
Door leaves shall be undercut where shown on drawings.
Doors, windows, frames etc. shall be on a true plane, free from warp or buckle.
All welds shall be dressed flush on exposed and contact surfaces.
Correctness of location and smoothness of operation of all shop installed hardware and fixtures.
Provision for hardwares and fixtures to be installed at site.
Glazing beads shall be cut with metred corners.
Glazing clips, fixing devices etc. shall be supplied in adequate numbers.
Shop coats shall be properly applied.
Exposed aluminium surface shall be free from scratches, stains and discoloration; Anodised surfaces shall present a uniform and pleasing look.

7.7.2. For Installed Items

Installations shall be at correct location, elevation an in general on a true vertical plane.
Fixing details shall be strictly as shown on drawings.
Assembly of composite units shall be strictly as per drawings, with mastic caulking at transoms and mullions, gaskets, weather strips etc. complete.
All frames on external walls shall be sealed with polysulphide or mastic caulked to prevent leakage through joint between frames and masonry.
All openable sections shall operate smoothly without jamming.
Cutting to concrete or masonry shall be made good and all abrasions to shop paint shall be touched up with paint of same quality as shop paint.
Aluminium doors, windows etc. shall be free from scratches, stain or discolouration. Hinges, Tower bolts, locks.
Before bulk supply, he shall submit for the approval of the Engineer-in-charge, samples of all bought out items and samples of each type of fabricated item. The samples shall be retained by the Engineer-in-charge for comparison of bulk supply and returned to the Contractor towards the end for the final incorporation in the job.

8.0 STEEL WORK

All steel work shall be carried out as per CPWD Specifications (Volume-I) 2019 with up-to-date correction slips.

9.0 FLOORING

9.1 All work in general shall be carried out as per CPWD Specifications (Volume-I) 2019 with up-to-date correction slips.

9.2 Whenever flooring is to be done in patterns of tiles and stones, the contractor shall get samples of each pattern laid and approved by the Engineer-in-charge before final laying of such flooring. Nothing extra shall be payable on this account.

9.3 Different stones / tiles used in pattern flooring shall be measured separately as defined in the nomenclature of the item and nothing extra for laying pattern flooring shall be paid over and above the quoted rate. No additional wastage, if any, shall be accounted for any extra payment.

9.4 Samples of flooring stones/ Tile (Kota/ Marble/ Granite/ Ceramic tiles/ Vitrified tiles etc.) shall be deposited well in advance with the Engineer-in-Charge for approval. Approved samples should be kept at site with the Engineer-in-Charge and the same shall not be removed except with the written permission of Engineer-in-Charge. No payment whatsoever shall be made for these samples.

9.5 The Marble/ Kota/ Granite or any other stone shall be fully supported by the details establishing the quarry and its location.

9.6 Full width Marble/ Kota/ Granite stone over kitchen platform shall be provided which shall not be less than 900mm long except to adjust for closing pieces. The marble / stone flooring in treads and risers of staircase shall not be less than 1500mm long except to adjust the closing pieces. Nothing extra shall be paid on these accounts

9.7 Vitrified Tile Flooring

The tiles shall be of approved make and shall generally conform to Table 12 of IS 15622. he full body Vitrified tiles of specified sizes shall be used & sample of tiles shall be got approved from the Engineer-in-Charge. All tiles shall be rectified and double charge minimum. The Mandatory tests for vitrified tiles shall be got done as per CPWD Specifications (volume-1)/relevant BIS Code.

9.8 Ceramic Tiles Flooring

The tiles shall be procured from the approved manufactures of the specified shade colour. The floor & wall tiles shall be conforming to IS:15622 for floor and wall tiles respectively. Tiles for dado shall be 300mm x 450mm (minimum size) or more (GROUP-III) as approved. Tiles for flooring shall be 300mm x 300mm (minimum size) or more (GROUP-V) as approved. Test shall be conducted to satisfy the quality of material as per CPWD Specifications

9.9 The rate of items of flooring is inclusive of providing sunken flooring in bathrooms, kitchen etc. and nothing extra on this account is admissible. The proper gradient shall be given to flooring for toilets, verandah, kitchen, courtyard, etc. as per the directions of Engineer-in-charge.

9.10 The entire responsibility for the quality of work will however rest with the building contractor only and he shall submit a Guarantee Bond as per Proforma at **PageNo. ~~97-99~~ of Part-B.** If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor.

10.0 **Wooden laminated flooring 12 mm thick AC-5 grade**

Providing and fixing wooden laminated flooring 12 mm thick AC-5 grade with 0.10 mm thick polythene sheet as moisture barrier and 2 mm thick foam for hush factor as per approved colour, shade and design complete by Engineer-in-Charge.

Materials and T&P: As mentioned in the item

Wooden laminated flooring 12 mm thick AC-5 grade of approved brand as decided by Engineer in Charge.

0.10 mm thick polythene sheet of superior quality, as approved by Engineer in Charge, as moisture barrier.

2 mm thick foam (heavy duty), as approved by Engineer in Charge, for hush factor. All related accessories and materials.

(a) **Testing:** The all material and equipments shall be tested for effectiveness before taking up the operation as per direction of Engineer in Charge.

(b) **Procedure:**

- **Step-1**: Follow the guidelines for Safety, Quality Assurance, Environmental Protection, Product delivery, Personnel, Supervision, Storage and Handling, etc. given in contract documents.
- **Step-2**: The hard base surface on which the wooden flooring shall be fixed shall be checked for dampness and corrected to levels. If any kind of dampness is observed effective measure shall be taken to prevent causes of dampness, so as to make surface damp free, before any installation operation of flooring.
- **Step-3:** 0.10 mm thick polythene sheet as moisture barrier shall be cut to the required length, brushed clean of dusting material and laid out flat on the hard base surface

corrected to required levels to eliminate curls and subsequent stretching, in such way that it is continued and raised by minimum 30 mm along the edge wall junction.

- **Step-4:** 2 mm thick foam (for hush factor) shall be cut to the required length, brushed clean of dusting material and laid out flat on wrinkle free surface of already laid polythene sheet to eliminate curls and subsequent stretching.
- **Step-5:** The end Wooden laminated flooring 12 mm thick AC-5 grade boards shall be accurately fixed with the sides parallel and close to the walls leaving a breathing gap of 10 mm along the edge of wall. Each adjoining board shall be carefully jointed and shall be tightened in position with proper inter locking. The flooring shall be truly level and plane. The joints shall be truly parallel and or perpendicular to the walls, unless otherwise specified or as directed by Engineer in charge. The floor shall be plane in both directions and made perfectly even, true and smooth.
- **Step-6**: After installation of flooring boarding, company recommended corner gola beading of required shape/pattern, matching colour/ shade, finish as approved by Engineer in charge shall be fixed with suitable nails along the edges of walls over the edge gaps taking the raised polythene sheet extending out. Extra part of polythene sheet visible beyond the beading shall be cut.
- **Step-7**: At the door openings company recommended edge beading of required shape/pattern, matching colour/shade, finish as approved by Engineer in charge shall be fixed along the edges taking polythene sheet extending out. Extra part of polythene sheet visible beyond the beading shall be cut.

(c) **Measurements:** Length and breadth of superficial area of the finished work shall be measured correct to a cm. Area shall be calculated in square meter correct to two places of decimal. No deduction will be made of openings of areas correct to 0.40 Sqm nor shall extra payment be made either for any extra material or labour involved in forming such openings. For openings exceeding 0.40 Sqm. in area, deduction in measurements shall be made.

(d) **Rates:** The rates shall cover cost of all materials, labour and T&P involved in all the operationsdescribed above at all levels.

11.0 **WATER PROOFING FOR SUNKEN FLOORS**:-

11.1 The work shall be got executed from the specialized agency as approved by the Engineer in Charge.

11.2 Total quantity of the water proofing compound required shall be arranged only after obtaining the prior approval of the make by Engineer-in-charge in writing. Materials shall be kept under double lock and key and proper account of the water proofing compound used in the work shall be maintained. It shall be ensured that the consumption of the compound is as per specified requirements.

11.3 The finished surface after water proofing treatment shall have adequate smooth slope as per the direction of the Engineer-in-charge.

11.4 Before commencement of treatment on any surface, it shall be ensured that the outlet drain pipes / spouts have been fixed and the spout openings have been chased and rounded off properly for easy flow of water.

11.5 **GUARANTEE BOND FOR ALL WATER PROOFING ITEMS:-**

Five years Guarantee bond in prescribed proforma at **PageNo. 95 of Part-B**shall be submitted by the contractor which shall also be signed by both the specialized agency and the contractor to meet their liability / liabilities under the guarantee bond. However, the sole responsibility about efficiency of water proofing treatment shall rest with the building contractor**. Ten per cent (10%) of the cost of water-proofing work shall be retained as Security Deposit in addition to normal security deposit of the whole work and the amount so deducted would be released after five (05) years from the date of completion of the entire work under the agreement, if the performance of the treatment is found satisfactory.** If any defect is noticed during the guarantee period, the contractor shall rectify it within 15 days of receipt of intimation of defects in the work. If the defects pointed out are not attended to within the specified period, the same will be got done from another agency at the risk and cost of contractor.

12.0 **FINISHING:-**

12.1 The work shall be done in accordance with CPWD Specifications (Volume-II) 2019with up-to-date correction slips and/or manufacturers specifications wherever applicable.

12.2 All painting material of approved brand and manufacturer shall be brought to the site of work in the original sealed containers. The material brought to the site of work shall be sufficient for

at least 30 days of work. The material shall be kept under the joint custody of contractor and representative of the Engineer-in-charge. The empty containers shall not be removed from the site till the completion of the work without permission of the Engineer-in-charge.

12.3 In the item of finishing walls with water proofing cement paint, only the plain/flat area shall be measured for payment and nothing extra shall be paid on account of pointed wall surface.

13.0 **Gypsum Light Weight Plaster**

13.1 The contractor shall procure Gypsum Light Weight Plasterconforming to IS: 2547 (Part-I & II) as required in the work from reputed manufacturers of Gypsum Light Weight Plasteras per approved list**.** The Gypsum Light Weight Plasterof approved make as aforesaid in packages bearing manufacturer's name along with **manufacturers test certificate** for each lot shall be procured by the contractor.

13.2 In any consignment, all the packages of the Gypsum Light Weight Plasterof the same class and type and from the same batch of manufacture shall be grouped together to constitute a lot.

13.3 Samples shall be selected and tested separately from each lot to determine its conformity or otherwise to the requirement of the specification.

13.4 The packages for the sample shall be selected at random from the lot and in order to ensure the randomness of selection the procedures given in IS: 4905- 1968 may be adopted.

13.5 The number of packages to be selected for the sample from a lot shall depend upon the size of the lot and shall be in accordance with Col 1 and 2 of table below:-

Sl. No.	**LOT SIZE (No. of Packages in the lot) (1)**	**SAMPLE SIZE (No. of Packages to be selected for the sample) (2)**
1.	Up to 100	3
2.	101 to 150	4
3	151 to 300	5
4.	301 to 500	7
5.	501 and above	10

Samples of Gypsum Light Weight Plasterarranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant BIS Codes. The material for such testing purpose shall be supplied by the contractor free of charge. In case test results indicate that the material arranged by the contractor does not conform to the relevant BIS Codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of

written order from the Engineer-in-Charge to do so. The cost of tests shall be borne by the contractor/department in the manner indicated below:

i) By the contractor, if the results show that the Gypsum Light Weight Plasterdoes not confirmto relevant BIS Codes. ii) By the department, if the results show that the Gypsum Light Weight Plaster conforms to relevant BIS Codes.

13.5.1 The test results of the samples so obtained shall be in full compliance with the requirements of IS: 2547 (Part-I & II) in terms of composition of material, physical properties, chemical properties and other requirements laid down in the said standards. The setting time of the material should not be less than 30 minute in any case.

13.5.2 Work shall be carried out as per CPWD Specifications (Volume-II) 2019 with up-to date correction slips. RCC and brick work surfaces shall be properly hacked and racked respectively before application of plaster. PVC mesh of approved make shall be provided at joints of dissimilar materials.

13.5.3 The entire responsibility for the quality of work will however rest with the building contractor only and he shall submit a Guarantee Bond as per Proforma at **Page No. 99 of Part-B.** If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor.

13.5.4 Rate shall include the cost of all labour & material including PVC mesh involved, in all the operations described above and in CPWD Specifications (Volume-II)2019 with upto date correction slips.

14.0 **SANITARY INSTALLATIONS /WATER SUPPLY / DRAINAGE:-**

14.1 The contractor shall submit schematic drawing of water supply and sanitary installation showing details of layout, including internal water supply and drainage details, showing the

detail of water supply lines including fittings diameter wise and fixtures connecting to soil waste through traps and connection of W.C. to main shaft pipe for drainage including its ventilation system for approval of Engineer-in-Charge.

14.2 For the work of water supply and sanitary installations, the contractor shall engage the approved licensed plumbers and submit the name of proposed plumbing agencies with their credentials for approval of the Engineer-in-Charge.

14.3 The work in general shall be carried out as per CPWD Specifications (Volume-II) 2019 with up-to-date correction slips.

14.4 The tendered rates shall include the cost of cutting holes/cores in walls, floors, RCC slabs etc. wherever required and making good the same for which nothing extra shall be paid.

14.5 The Centrifugally spun cast iron pipe IS: 3989-1984 wherever necessary shall be fixed to RCC columns, beams etc. with rawl plugs of approved quality and nothing extra shall be paid for on this account.

14.6 The jointing should be as per CPWD specifications.

14.7 Nothing extra for providing & fixing CP Brass caps /extension pieces wherever required for CP Brass fittings shall be paid beyond the rates payable for corresponding CP Brass fittings.

14.8 The entire responsibility for the quality of work will however rest with the building contractor only and he shall submit a Guarantee Bond as per Performa at **PageNo. 96 of Part-B**. If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor.

15.0 Aluminium doors, windows, ventilators etc. glazing specifications

15.1 **Extent and Intent:** - The work shall be carried out in the factory through an approved Special Agency, who shall furnish all material, labour, accessories, equipment, tool and plants and incidentals required for providing and installing anodized/powder coated aluminium doors, windows, claddings, louvers and other items as called for on the drawings. The drawings and specifications cover the major requirements only. The supplying of additional fastenings, accessories, fixtures and other items not mentioned specifically herein, but which are necessary to make a complete installation shall be a part of this contract.Hinges for openable panel shall be stainless steel friction hinges / stays selected for specified wind load and dead loads or specifically extruded in-built hinges.

15.2 **General:** - Aluminium doors, windows etc. shall be of sizes, section details as shown on the Architectural drawings. The details shown on the drawings indicate generally the sizes of the component parts and general standards. These may be varied slightly to suit the standard adopted by the manufacturers. Before proceeding with any manufacturing, the contractor shall prepare and submit complete manufacturing and installation drawings for approval of the Engineer-in-Charge and no work shall be performed until the approval of these drawings is obtained.

15.3 **Shop Drawings:** - The contractor shall submit the shop drawings of doors, windows, louvers, cladding and other aluminium work, based on the architectural drawings to the Engineer-in-Charge for his approval. The shop drawing shall show full size sections of doors, windows etc. thickness of metal (i.e. wall thickness) details of construction, sub frame/rough ground profile, anchoring details hardware as well as connection of windows, doors and other metal work to adjacent work. Samples of all joints and methods of fastening and joining shall be submitted to the Engineer-in-Charge for approval well in advance of commencing the work.

15.4 **Samples:** - Samples of doors, windows louvers etc. shall be fabricated, assembled in the factory and submitted to Engineer-in-Charge for his approval. They shall be of sizes, types etc. as decided by Engineer-in-Charge. All samples shall be provided at the cost of the contractor.

15.5 **Sections:** - Aluminium doors and windows shall be fabricated from extruded sections of profiles as detailed on drawings. The sections shall be extruded by the manufacturers approved by the Engineerin-Charge. The aluminium extruded sections shall conform to BIS designation IIE/IIV 9 WP alloy, with chemical composition technical properties, as per IS: 733 and IS: 1285. The permissible tolerance of the extruded sections shall be such as not to impair the proper and smooth function/ operations and appearance of doors and windows.

15.6 **Fabrication:** - Doors, windows etc. shall be fabricated to sizes at factory and shall be of section, sizes, combinations and details as shown on the drawings. All doors, windows etc. shall have mechanical joints. The joints shall be designed to withstand a minimum wind load of 150 Kg. per Sqm. The design shall also incur that the maximum deflection of any member shall not exceed 1/175 of the span of the member. All members shall be accurately machined and fitted to form hairline joints prior to assembly. The joints accessories such as cleats, brackets etc. shall be of such material as not to cause any bimetallic action. The design of the joints and accessories shall be such that the accessories are fully concealed. The fabrication of doors, windows, etc. shall be done in suitable sections to facilitate easy transportation, handling and installation. Adequate provision shall be made in the door and window members for anchoring to support and fixing of hardware and other fixture as approved by the Architect.

15.7 **Anodizing/ powder coating:** -All aluminium sections shall be Powder coated (minimum 50 micron thickness) as per requirement as per IS: 7088 and to required colour as specified in the item as per IS: 1868 grading as specified in item schedule after cutting the member to requisite sizes before the final assembly. Powder coating shall be of minimum 50 micron thickness. Anodizing conforming to specified grade with minimum average thickness of 15 microns when measured as per IS: 612. The anodic coating shall be properly sealed by steams or in boiling water are cold sealing process as per IS:1868/IS: 6057. Polythene tape protection shall be applied on the anodised section before they are brought to site. All care shall be taken to ensure surface protection during transportation, storage at site and installation. The tape protection shall be removed on installation. The sample will be tested in the approved laboratory and cost of samples; etc. shall be borne by the contractor.

15.8 **Protection of finish:** - All aluminium members shall be wrapped with approved self-adhesive non-staining. PVC tapes.

15.9 Handling and Stacking:-

15.9.1 Fabricated materials shall be carried in an approved manner to protect the material against any damage during transportation. The loading and unloading shall be carried out with utmost care. On receipt of material at site, it shall be carefully examined to detect any damaged pieces. Arrangements shall be made for expeditious replacement of damaged pieces/ parts. Materials found to be acceptable on inspections shall be repacked in crates and stored safely.

15.9.2 In the case of composite windows and doors, the different units are to be assembled first. The assembled composite units should be checked for line, level and plumb before final fixing is done. Units may be serial numbered and identified as out how to be assembled in their final locations if situation so warrants.

15.9.3 The contractor shall be responsible for assembling composite, bedding and filling the grove with polysulphide sealant inside and outside, at transoms and mullions placing the doors, windows etc. in their respective openings. After the doors/ windows have been fixed in their correct assigned position, the open hollow sections abutting masonry concrete shall be fitted with approved poly-sulphide sealant densely packed and finished neat.

15.9.4 The contractor shall be responsible for doors, windows, etc. being set straight, plumb, level and for their satisfactory operation after fixing is complete.

15.10 **Installation**:

15.10.1 Just prior to installation the doors, windows, etc. shall be uncreated and stacked on edge on level bearers and supported evenly. The frame shall be fixed into position true to line and level using adequate number of expansion machine bolts, anchor fasteners, of approved size and manufacture and in an approved manner. The holes in concrete/masonry members for housing anchor bolts shall be drilled with an electric drill.

15.10.2 The doors/ windows assembled as shown on drawings shall be placed in correct final position on the opening and marks made on concrete members at jambs, sills and heads against the holes provided in frames for anchoring. The frame shall then be removed from the opening and laid aside. Neat holes with parallel sides of appropriate size shall then be drilled in the concrete members with an electric drill at the marking to house the expansion blots. The expansion bolts shall then be inserted in the holes, struck with a light hammer till the nut is forced into the anchor shell. The frame shall then be placed in final position in the opening and anchored to the support thought cadmium plated machine screws of required size and anchored to the support through cadmium plated machine screws of required size threaded to expansion bolts. The frame shall be set in the opening by using wooden wedges at supports and be plumbed in position. The wedges shall invariably be placed at the meeting at points of glazing bars and frame.

15.11 EPDM Rubber / Neoprene gaskets: The contractor shall provide and install EPDM Rubber /

Neoprene gaskets of approved size and profile at all locations as shown and as called for to render the doors, windows etc. absolutely air tight and weather tight. The contractor shall produce samples of the gaskets for approval and shall procure the same after approval only.

15.12 Fittings: Hinges, stays, handles, tower bolts, locks and other fittings shall be of quality and manufacturer as approved by the Engineer-in-Charge.

15.12.1 Manufacturer's Attendance: The manufacturer immediately prior to the commencement of glazing shall adjust and set all windows and doors and accept responsibility for the satisfactory working of the opening frames.

15.13 Poly-sulphide: The gaps between frames and supports and also any gaps in the door and windows sections shall be raked out as directed and filled with poly-sulphide of approved colour and make to ensure complete water tightness. The poly-sulphide shall be of such colour and composition that it would not stain the masonry/concrete work, shall receive paint without bleeding, will not sag or run and shall not set hard or dry out under any conditions of weather. The sample of poly-sulphide to be used for this purpose shall be got approved from the Engineer-in-Charge before its actual use.

15.15 **Details of Test:**

15.15.1 The various tests on aluminium sections shall be conducted in accordance with the relevant IS codes.

15.15.2 The minimum number of tests for anodizing/powder coating and corrosion resistance shall be as given below: -

S.No.	Details	No. of Tests
1.	Doors, windows and ventilators	One test for every 1000 kg or part thereof.

15.15.3 The samples of major member of each unit of doors/ windows shall be selected at random by Engineer-in-Charge as such that all the aluminium section shall be got tested.

15.16 **Acceptance Criteria:** - The entire responsibility for the quality of work will however rest with the building contractor only. The aluminium work shall carry Five years guarantee after completion of work against unsound material, workmanship and defective anodizing/ powder coating as per Guarantee Bond. Five years guarantee in prescribed Performa attached under **Page No.98 of Part –B** must be given by the specified firm, which shall be counter signed by the contractor, in token of his overall responsibility. If any defect is noticed during the guarantee period, the contractor should rectify it within seven days and if not attended to the same will be got done from another agency at the risk and cost of contractor.

15.17 Rates: -

15.17.1 The rates of the item shall include the cost of materials, labour required in all the above operations.

15.17.2 The rates exclude the cost of stainless steel friction hinges / stays selected for specified wind load and dead loads or specifically extruded in-built hinges, and rest of the fittings shall also be paid separately.

16.0 STRUCTURAL GLAZING/CURTAIN WALL GLAZING

16.1 **SCOPE OF WORKS**

The scope of works under this contract includes design, supply, installation, protection, guarantees, testing and maintenance up-to the defects liability period for Structural Glazing, Curtain Wall Glazing, etc. The fabrication work shall be done in approved factory.

The work under this section includes all Labour, materials, equipment and services as required for the complete design, engineering, testing, fabrication, assembly, delivery, anchorage, installation, protection and waterproofing of the aluminium curtain wall / structural glazing system, and all in accordance with the true intent and meaning of the specifications and drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings or described in the specification provided that the same can be reasonably inferred there from. Anchorage includes all primary and secondary anchor assemblies and supportive structural framing as required to secure aluminium structural glazing system, cladding and louvers to the building structure.

16.1.1 **The detailed scope of works consists of:-**

The aluminium structural glazing system described hereafter shall include but will not

necessarily be limited to the following:-

a) Frames, vision panels, spandrels, doors and ventilators.
b) Openable panels where indicated, inclusive of all accessories, fittings etc.
c) Copings, soffit trimmers, and external metal cladding panels for both the wall cladding and the curtain walling system.
d) Aluminium doors, aluminium windows, aluminium fix glazing, louvers etc. wherever indicated.
e) All caulking, sealing and flashing including sealing at junctions with roof waterproofing and exterior wall, flashing at doorway, raised kerbs and in window surrounds.
f) Sealant within and around the perimeter of all work under this section.
g) Separators, neoprene / EPDM / silicon gaskets, trims etc.
h) All steel structural framing and beam supports, anchors and attachments as required for the complete installation of the whole system, wherever specified.
i) Inserts in concrete, anchor fasteners etc. for the anchorage of all work under this section to the approval of Engineer in charge.
j) Isolation of all dissimilar metal surfaces as well as moving surfaces similar or dissimilar.
k) Fire-stops, Flashings, Sealing of all interfaces with buildings etc.
l) Protection during storage and construction until handing over.
m) Engineering proposals, drawings and data.
n) Shop drawings, engineering data and structural calculations of all systems including framing, fasteners and cladding.
o) Scheduling and monitoring of the work.
p) All samples, mock-ups and test units.
q) Co-ordination with work of Civil Works and other contractors employed on site.
r) All final exterior and interior cleaning of the aluminium structural glazing system, cladding, doors, Louvers and window etc.
s) Hoisting, staging, scaffolding and temporary services.
t) Specified tests, inclusive of necessary reports.
u) Maintenance manuals.
v) Design and Performance guarantees.
w) Periodic inspection, supervision and advice by Contractor's Senior Personnel of the System Principal as well as guarantee in approved Proforma for the quality and performance of works.
x) Construction monitoring for regular quality control and technical inspection to ensure the work conforms to the shop drawing details (including any modification made during testing) and acceptable standards of quality.

16.2.1 **Building Regulation**

Design of the aluminum structural glazing system shall comply with all Government codes and regulations. For wind design, all calculations shall comply with the requirements of the relevant National Building Code and Indian Standard Code, unless specified otherwise.

16.2.2 **Guarantee**

The Contractor shall be fully responsible for and shall guarantee proper design and performance of his installed system for a period of 5 years from the date of completion of work. The design and installation shall be to the best international standards and shall specially take account of wind and seismic loads, storms, air pollution, thermal stresses, building movements and the like

In addition specific 5year guarantees in enclosed Proforma shall be given for performance of glass, aluminium, glazed units, anodizing, PVDF coating to cladding sheets / aluminium sections, EPDM / silicon gaskets and sealants. All the Guarantees shall be submitted before Final payment and shall not in any way limit any other rights to correction which the Employer may have under the Contract.

16.4 **CONTRACTOR'S RESPONSIBILITIES**

The Contractor's responsibilities include but are not necessarily limited to the following items:

a) The Contractor shall provide and install all supplementary parts necessary to complete all items generally implied in the drawings and in the specifications though not specifically shown or mentioned. This shall include the design and sizing of all sections and anchor assemblies to meet the performance and design requirements, furnishing and installation of all inserts, fasteners, clips, bracing and framework as required for the proper anchorage of the structural glazing system elements to the structure, unless otherwise noted or

specified to be furnished / installed by another contractor. Alternate anchorage proposals will be considered, if, in the opinion of the Engineer-in-charge the general design and intent of the drawings and specifications are maintained.The Contractor's system therefore must perform satisfactorily as a whole.

b) Design Responsibility:
Drawings and specifications indicate the required basic dimensions, profiles and performance criteria. The Contractor shall have the option of modification and addition of details provided the visual concept and performance requirements are fulfilled. Proposed modifications shall be clearly shown on shop drawings as "Design Modifications" and acceptance of the same will not relieve the Contractor from sole responsibility for performance of the aluminium structural glazing system and cladding. The Contractor shall be solely and fully responsible for due performance of his installation based on his own design and details.

c) In-plant and job site inspection: The Contractor shall allow the Engineer-in-Charge or his authorized representative full access to plants, shops and assembly points to view and inspect the processes and methods employed in the fabrication, assembly and finishing of the aluminium structural glazing system and cladding for this project.
The Engineer-in-Charge will have the right to reject any and all aluminium structural curtain wall / structural glazing system and cladding components and assemblies during assembly and erection if the workmanship and intent are not in strict conformity with the approved shop drawings, structural calculations, documentation, certifications, samples and mock-up.

d) Glass, sealants and other items or materials procured by purchase shall be back to back guaranteed by the manufacturer.

16.5 SHOP DRAWINGS

16.5.1 The contractor shall prepare necessary shop drawings based on the preliminary Architectural drawings and four (4) copies of all shop drawings shall be submitted to the Engineer-in-Charge for review and approval. The Engineer-in-Charge's review of all shop drawings will be limited to their conformity to the design concept & specifications. Engineer-in-Charge's approval of the shop drawings will not relieve the contractor from any of the responsibilities and requirements as stated drawings and all other related submissions, documentation, certifications, samples and the mock-up for that work have been reviewed and approved by the Engineer-in-Charge. On approval of the drawings by Engineer-in-Charge, the Contractor shall submit six (6) copies of all drawings with softcopy to Engineer-in-Charge for release to execution. Shop drawings shall incorporate scaled and dimensioned plans, elevations, sections and full size details for all work in this section.

Shop drawings shall indicate the desired dimensional profiles and modules, function, design and performance standards and, in general, delineate the scope of work. The contractor shall verify and coordinate these items with all applicable and/or related trades, contract drawings and specifications. Since the dimensions and modular references shown on the drawings are for specific and/or typical detail, the shop drawings shall include a full complete layout of all modular and referenced dimensions for all the aluminum structural glazing, cladding, doors, windows and louvers and their related elements. All dimensions / modules, etc., shall be field checked as required.

The full size details shall show and specify all metal sections, types of finishes; areas to be sealed and sealant materials; gaskets; direction and magnitude of thermal expansion; direction and magnitude of all applicable construction including fasteners and welds; all anchorage assemblies and components; the fabrication and erection tolerances for the work and applicable related works adjoining, attached to or in some way related to the work covered by these specifications. The location of all static and dynamic anchor assemblies, the direction of thermal and other applicable building movements, coordination with concrete works and the sequence of installation shall be designated on the applicable plans, elevations and / or sections. All details shall be subject to Engineer-in-Charge approval.

16.5.2 Shop drawings shall indicate the desired profiles, dimensions, details of metal finish and in general delineate the scope of the work. Profile adjustments in the interest of economy, fabrication, erection, weather-ability or ability to satisfy the performance requirements may be made only with the written approval of the Engineer-in-Charge, provided that the general design and intent of the drawings and specifications are maintained.

16.5.3 Shop drawings to be vetted by the Principal of the Structural Glazing & Cladding System. Six (6) copies each of all final approved shop drawings shall be submitted to Engineer-in-Charge

16.6 **STRUCTURAL CALCULATIONS**

16.6.1 The Contractor shall guarantee that his design will ensure the structural safety and integrity of the curtain wall, cladding and glass panels against all natural forces, superimposed loads, environment and consequent movements. For that purpose the contractor shall employ a competent design engineer to design his systems and components. During the design stage, the Contractor shall interact actively with the Architect concerning all aspects of design and shall obtain all the information from them concerning the structure, probable deflections and other building movements etc. The Contractor shall take full account of all possible building movements as well as the movements of his curtain wall and cladding systems in his design. The Contractor shall submit his detailed structural calculations for the systems and each of their components and shall guarantee that his design will ensure the structural safety and integrity of the curtain wall, cladding and glass panels against all natural forces, superimposed loads, environment and consequent movements.

The structure and functional design of curtain wall system must be vetted and approved by the Principals of the curtain wall system. The Contractor shall obtain the Engineer-in-Charge's approval to his design calculations and to the provisions made in his design for all the building movements, and shall be responsible for the correctness of the fixing and interaction of the curtain wall with the structure so as to ensure that all the movements envisaged between the structure and the curtain wall area are fully taken care of. The Contractor shall be responsible for the workmanship of fabrication and installation and shall indemnify the Employer against all claims due to defects or non-performance during the specified 10 year Guarantee period. The provisions of this clause shall not in any way limit the department rights under other clauses of the Contract.

16.6.2 The R.C.C. in the building structure is Grade M25 or anyother grade as per structure design and as per direction of Engineer-in-charge. The Contractor shall design anchorages for this grade of concrete with adequate safety factor.

16.6.3 Three (3) sets of approved design calculations which is compatible with R.C.C. and steel structure shall be submitted to Engineer-in-Charge.

16.7 **DOCUMENTATION AND CERTIFICATION**

16.7.1 Glass and Glazing Documentation:

The applicable glass manufacturer(s) shall submit written certification for Engineer-in-Charge's review and approval stating that all glass and glazing requirements as detailed and specified on the shop drawings have been reviewed and approved for use relative to their specific application and / or design parameters, compatibility to adjacent materials and in conformity with all requirements as detailed and specified in the Contract Documents. Certification shall further state that the proposed glass and glazing materials are most appropriately suited for the use or uses intended and recommended for the specific use or the selection of the glass and the glazing materials including, but not limited to, gaskets, setting blocks, sealant, the design and dimensional parameters of the glass pockets and the compatibility of materials. Test Certificate from approved laboratories for U-values and shading factor claimed by the Manufacturer shall be submitted.

16.7.2 Sealants Documents:

All sealant applications must be clearly designated on the applicable shop drawing details and referenced to a master sealant schedule specifying materials, special instructions and application procedures. The applicable sealant manufacturer(s) shall submit in writing that all sealant requirements as detailed and specified on the shop drawings have been reviewed and approved for use relative to their specific application and / or design intent, compatibility to adjacent materials and in conformity with all the requirements as detailed and specified in the contract documents. The manufacturer's certification shall specify the optimum life expectancy, in years, for the proposed sealant materials as detailed and specified on the shop drawings and/or master sealant schedule and shall further state that the proposed materials are most appropriately suited for the use or uses intended and recommended for the specific use or uses.

16.7.3 Quality Control Documentation:

In-plant and job site quality control procedures shall be documented in writing for review of Engineer-in-Charge and approval to ensure the design integrity and performance of the as-built product. Documentation shall include schedule, details, isometric and/or schematic explanatory sketches crossreferences to the shop drawings, data sheets, etc., all as required to intelligently witness and assess methods and materials; and to ensure that both the fabrication and installation are in accordance with the contract documents.

The Engineer-in-Charge or his authorized representative shall be given free access to the plant to inspect fabrication procedures. No fabrication or assembly of job site materials shall

commence until the first production unit is inspected and approved by Engineer-in-Charge.
The in-plant quality control procedures shall include but not necessarily be limited to the following items:

Fabrication	Tolerances, Joinery, Sleeves, etc.
Finish Match	Approved finish controls required for matching the exposed surfaces.
Assembly	Welds, fastener, sealants, gaskets, separators, glazing etc.
Protection	Handling, protection, shipping etc.

The job site quality control procedures shall include, but not necessarily be limited to the following items:

Anchorage	Lines, grades and related building tolerances
Installation	Tolerances, finish, match, joinery, sleeves, flashing, welds, fasteners, sealants, etc.
Sealing	As recommended by the applicable sealant manufacturer(s)
Protection & Cleaning	As recommended by the applicable sealant manufacturer(s)

16.8 SAMPLES AND MANUALS:

16.8.1 The following samples of actual job site materials together with detailed technical data / catalogues shall be submitted in duplicate, unless otherwise noted, and in the sizes noted, for Engineer-in-Charge's review and approval. Any omission of an item, or items which require the Contractor's compliance with these documents does not relieve him from such responsibility.

(a) Aluminium sheet panel: Each type and thickness; 600 x 600 mm of the specified thickness.
(b) Aluminium extrusions; one only of each section; 300 mm long of specified thickness.
(c) Glass; Each type and kind, 300 x 250 mm of specified thickness and including frame.
(d) Glazing gaskets, tapes, separators, glass setting blocks, etc. each section or unit, 300 mm long or unit.
(e) Fasteners and connections devices: Each type and size.
(f) Finish samples: After approval of the final finish coating the Engineer-in-Charge is to be provided with six (6) approved samples.
(g) Window and door ironmongery and accessories, as applicable.
(h) Flashings and finish samples.
(i) Cladding.
(j) Samples submitted should be also include assembly of various components forming a typical fixing and details complete with flat sheets, glazing, extrusion, fastener, sealants etc.

16.8.2 Maintenance Manual:

Submit Maintenance Manuals approved by Engineer-in-Charge in three (3) copies each indicating the detailed procedures for the periodical inspection maintenance and cleaning of all the structural glazing, cladding, doors, windows and louver elements, finishes etc.

16.9 WORK SCHEDULE:

16.9.1 Immediately on receipt of the Award Letter the Contractor shall submit the final programme of work schedule for the completion of the whole of the works including submittals, approvals, fabrication, supply at site & installation. The time schedule shall be got approved from the Engineer-in-Charge.

16.9.2 The time schedule shall be prepared in consultation with Engineer-in-Charge to suit the overall project schedule and shall be updated from time to time to suit prevailing conditions and co-ordination with other Contractors employed on site.

16.10 **INSPECTION OF COMPONENTS**

16.10.1 The Contractor shall submit a schedule of material specification and procedure for inspection of the quality of components of the metal wall cladding / curtain walling the fabrication in the plant.

16.10.2 The Contractor shall submit fortnightly report on the results of the inspection of the components, in a format approved by the Engineer-in-Charge.

16.10.3 The Contractor shall submit a description of the procedure of delivery, hoisting, storage, handling, fixing, scaffolding, temporary working stage or gondola, protection and cleaning.

16.11 **STORAGE, PROTECTION AND PROGRAMME**

16.11.1 The Contractor shall submit a schedule on the procedure for inspection during installation so as to maintain quality control on the site.

16.11.2 The Contractor shall submit a detailed method statement for the protection of the surface of the aluminium structural glazing & cladding members during delivery and erection, with

description as to when the protection can be removed.

16.11.3 The Contractor shall submit weekly reports on the inspection of erection and installation as direction by the Engineer-in-Charge.

16.11.4 Delivery and Storage and Materials: All materials delivered to site shall be stored in allocated spaces where the stored materials will not be exposed to rainwater, moisture or damage, and shall permit easy access to and handling of the materials. Materials shall be stored neatly and properly stacked.

a) Factory made structural glazing units and / or their components shall be transported, handled and stored in a manner to preclude damage of any nature.

b) Accessory materials, required for erection at the site shall be delivered to the site in labeled containers by the manufacturer.

c) Remove all units or components which are cracked, bent, chipped, scratched or otherwise unsuitable for installation and replace them promptly. And nothing extra shall be payable on this account.

16.12 **PERFORMANCE REQUIREMENTS**

16.12.1 All components, assemblies and completed work included in or permit to the work of this section shall conform to or exceed the following performance standards and comply with all applicable and governing building codes and regulations.

16.12.2 Thermal Movement: Provide for noiseless contraction and expansion of component materials for an ambient temperature range of +10°C to 70°C and a material temperature range of 100°C without buckling, opening joints, glass breakage, undue stress on fasteners, or other detrimental effects. Make allowance for vertical and horizontal expansion. For fabrication, assembly and erection, procedures shall take into account the ambient temperature range at the time of respective operations.

16.12.3 Building Movement and Related Building tolerance. The design and installation of the structural glazing system shall accommodate all inherent building movements and/ or deflections and the fabrication and installation tolerances of all related work not involved in this section without the loss of, or any detrimental effect to, the performance requirements herein specified. The Contractor shall verify and co-ordinate all such movements and / or tolerances with the Engineer-in-Charge and the Engineer-in-Charge before designing all the components of structural glazing and aluminium cladding so that movements and deflections in the structure do not at any time affect the integrity and safety of curtain wall and aluminium cladding and vice versa.

16.13 Thermal property:

All insulation materials, fire-stops and smoke seals shall comply with the current requirements of the Chief Fire Officer, Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa, Fire Brigade and other authorities.

16.14 Structural Properties:

a) The design of curtain wall / structural glazing system and aluminium cladding and all related components shall comply with the requirements of National Building Code I.S. 875 and Indian Standard Code IS: 456.

b) No curtain wall / structural glazing system and aluminium cladding elements including sealants and sealed joints shall sustain permanent deformation or failure under loading equivalent to 1.5 times the design wind pressure herein specified.

c) Deflections: The specified deflections must be reduced if they are in any way detrimental to the aluminium structural glazing and cladding elements and sealants. (Refer to para 13.28 Design data)

16.15 General

1) All braces, supports and connections for the aluminium curtain wall / structural glazing and cladding shall be designed, provided and installed complete as required.

2) Anchors for curtain wall shall be located within a maximum distance of 500 mm above or below the R.C.C. floor slab unless specifically approved otherwise by the Engineer-in-Charge.

3) Variations from schematic layouts indicated on the drawings may be permitted but only if a proposed revision does not, in the Engineer-in-charge's opinion, deviate from the design intent, cause excessive stress in the structure, cause excessive deflection, inhibit thermal and building movement or conflict with other requirements.

4) Member shapes and / or profiles if schematically shown on the Architect's drawings are not necessarily the exact shapes required or best suited for the particular condition. Final shapes and locations shall be as designed by the contractor and are subject to the Engineer-in-Charge's review and approval.

5) The height-from the finished floor level to the top of the window sill shall not be less than as shown in the drawing.

The horizontal or lateral load on such transom / railing (where not backed by an R.C.C. parapet) shall be designed in accordance with the following criteria i.e. a horizontal UDL at 0.74 KN/m run, UDL supplied to the infill of 1.0 KN/m^2 and a point load applied to part of the infill at 0.5 KN.

6) No holes shall be burned, filed or drilled in any structural steel members unless approved by the Engineer-in-Charge in writing.

7) The contractor shall provide detailed layouts, alignment jigs etc. for the proper and exact placement of all welded anchor studs, anchorage components, embedded anchor assemblies etc.

8) All metal structural glazing and cladding elements and their applicable anchorage assemblies shall be designed to accommodate all thermal and building movements without any harmful effect to the structural glazing and cladding.

9) No field forming, cutting and/or alterations of primary wall elements will be allowed. All framing members shall be shop fabricated and finish coated. No unfinished surfaces will be permitted on exposed surfaces.

16.16 Concrete Tolerances:

a) The contractor shall take into account tolerance in concrete and masonry surfaces to which the structural and glazing framework is fixed.

b) In general, the construction tolerances in the building shall be as follows.

- Surface level of floor slab, sills and lintels +/-10 mm
- Plumb in a storey height +/-10 mm
- Plumb in full height of building +/-14 mm
- Cross – diagonal distortion between columns +/-14 mm
- Max. displacement of any point on External Fascia from its true location +/-14 mm

16.17 MATERIALS

16.17.1 GENERAL

16.17.1.1 Materials and components used shall be of the best quality and suitable for the purpose to Engineer-in-charge's approval and shall have been tried and tested in similar environments.

16.17.1.2 All materials shall be free from any defect that may impair the strength, functioning or appearance of the glazing and cladding system or adjacent construction.

16.17.1.3 Testing by independent testing laboratories or review of data by the Engineer-in-charge shall not relieve the Contractor's responsibility to verify for himself that the work conforms to the intent of the contract documents.

16.18 **METALS**

16.18.1 In general, metals shall comply with relevant Indian and International Standards.

16.18.2 **Fasteners:**

The type, size, alloy, quantity and spacing of all fasteners and / or anchorage devices shall be as required for the specified performance standards.

a) Bolts, anchors and other fastening devices shall be of approved types as required for the strength of the connections, shall be self-locking, unless otherwise noted, shall be suitable for the conditions encountered, and shall be torque tightened, where required, to achieve the maximum torque tension relationship in the fasteners. Washers, nuts and all accessory items shall be of the same material as fasteners.

b) Fastening devices between aluminium and aluminium shall be Grade 304 of AISI non-magnetic stainless steel unless otherwise approved.

c) Fastening devices between aluminium and dissimilar materials shall be Grade 304 of AISI nonmagnetic stainless steel unless otherwise approved.

d) Exposed fasteners are subject to Engineer-in-charge's approval and shall be M.S. epoxy coated.

e) Self-locking fasteners shall be stainless steel of grade 304 with nylon inserts or patches.

16.18.3 **Extrusions:**

All aluminium extrusions shall conform to the system principal's specification for tolerances

which shall, in any case, be better than DIN standards. Any section not conforming to the tolerances shall be rejected.

In general aluminium alloy for extrusions shall be 6063 T5 or T6 as per B.S.1474. However, the grade and tempering specifications shall be as recommended by the supplier for each application and shall be approved by the system principal.

All surfaces abutting the parent sections and designed to receive sealants shall have adequate sealant contact and adhesion. They shall be finished to match parent sections.

16.19 Soffits and Suspended Ceiling System

Soffits and suspended ceiling system if required shall be of similar metal of the aluminium wall cladding with a similar finish. Colour and shape shall be selected by the Architect.

16.20 Brackets:

Brackets shall be of chromotised Aluminum of grade 6161-T6 or 6005-T6 conforming to ASTM 6511/A and approved by Engineer-in-charge. Slots in brackets shall be pre-drilled / punched and not flame-cut.

16.21 Hardware and Fittings:

All hardware and fittings such as patch fittings, handles, locks, stay-arms, floor springs etc. for doors windows and openable panels shall be stainless steel to best International standards and to Engineer-in-charge's approval. Hinges for openable panel shall be stainless steel friction hinges / stays selected for specified wind load and dead loads or specifically extruded in-built hinges. All fittings and locks shall be approved by the Engineer-in-charge.

16.22 SEALANTS & GASKETS

16.22.1 All sealant applications must be clearly designated on the applicable shop drawings details and reference to a master sealant schedule specifying materials, special instructions and application procedures.

16.22.2 The compatibility and sequence of installation for all sealants must be carefully considered in all proposals in order to ensure the required cure and optimum performance. Sealants must not degrade and / or fail under all design conditions including, but not limited to thermal movement, water, ultraviolet exposure and / or other adverse environmental conditions. The following sealant materials are specified for performance standards only. All proposals must be equal to or better than the materials herein specified. The designation of sealant types noted on the drawings is intended for general design guidance. Final selection by the contractor for the sealant types shall be based on their conformity with the Performance Requirements herein specified and meets with the Engineer-in-Charge's approval.

Maximum precautions shall be taken to prevent failure of sealant.

16.22.3 Structural sealant:

Structural sealant shall be Dow Corning Silicone sealant 995, GE ultraglaze 4000, or approved equivalent recommended by manufacturer. All exposed and concealed metal to metal (including tight or butt type metal to metal assembly prior to assembly), perimeter metal to concrete joints shall be silicone base sealant, preferably 2 component, in approved colour, conforming to the manufacturer's recommendations for the specific uses and performance criteria. The manufacturer shall conduct laboratory test for adhesion for each lot of aluminium sections and glass. Laboratory reports shall be submitted to the Engineer-in-Charge for approval.

16.22.4 Weather Sealant:

The grades of sealants for concealed metal to metal and metal to concrete joints such as embedment and lapping of flashings elements to be installed or embedded in a full bed sealant shall be the best recommended by the manufacturer for the application. (Dow Corning, GE or equivalent).

16.22.5 Joint fillers and back-up materials shall be non-gaseous polyethylene foam, sponge neoprene as per written recommendations from the applicable sealant manufactures for each specific application. Shape, size, hardness, compatibility and bond breaking requirements are all factors to be considered.

16.22.6 All sealant must be non-staining and compatible with adjoining sealants, backup materials, substrate materials and their respective finishes and / or applied colour coatings.

16.22.7 Exposed assembly sealant will not be permitted at any wall area.

16.22.8 All sealants shall be given 5 years Guarantee for materials, workmanship and performance from the date of completion of Contract.

16.22.9 Caulking compound: Dow Corning 991 or approved equivalent, one part gun grade consistency, colour to match adjacent material or approved by Engineer-in-Charge for use around frame or between frame and floor slab.

16.23 **GASKETS:**

A) Silicon Gasket: All Gaskets and seals shall be SILICON of approved quality, compatible with substrates, finishes and other components they are in contact with.

16.24 **SEPARATORS**

16.24.1 Separators between steel and aluminium members and wherever required shall be rigid type, high impact, smooth both side Teflon with a minimum thickness of 0.8 mm or other non-conducting materials as approved by the Engineer-in-Charge.

16.25 **STRUCTURAL GLAZING SYSTEMS**

16.25.1 The method of assembly, reinforcing and anchorage of the aluminium structural glazing system, where indicated, is schematic. Locations and method of providing same shall be the Contractor's responsibility, who shall design the assembly, reinforcing and anchorage to suit each specified conditions in an acceptable manner complying with the requirements specified herein after.

16.25.2 Visible joints shall be as shown in the Architectural drawings.

16.25.3 All parts shall be secured by concealed means wherever possible and where exposed to view, screw positions are to be indicated on the preliminary drawings. Exposed screws shall be of the countersunk type coloured in same finish as of aluminium or non magnetic stainless steel and shall be evenly and neatly located in an approved manner.

16.25.4 All components shall be assembled, secured anchored, reinforced, sealed and made weather-tight in a manner not restricting thermal or wind movements of the structural glazing. Sealants shall be concealed wherever possible.

16.25.5 All fastening into or through aluminium shall be SS-306 as approved by Engineer-in-Charge.

16.25.6 Free and noiseless movement of all the components of the Curtain Walling system due to thermal effect, structural effect, wind pressure, seismic forces, erection or dead loads, shall be achieved without strain to the glass, without buckling of any components and without excessive stress to any members or assemblies.

16.25.7 Aluminium surfaces in contact with mortar, concrete, plaster, masonry, wet application of fire-proofing and absorptive materials shall be coated with an anti-galvanic, moisture barrier material.

16.25.8 **Waterproofing:**

a) A complete drainage system must be incorporated into the structural glazing frame work. Water leakage and condensation shall be drained or discharged to exterior face of the wall and all internal spaces vented by acceptable means to ensure air pressure equalization wherever possible.
b) Drainage system will be sealed off at every floor to prevent infiltrated water from leaking to lower floors.
c) Movement of water behind and on exposed surfaces must be controlled to ensure that water is not retained and that elements will not be damaged or corroded by water and to avoid the potential for algae and fungus growth as a result of standing or trapped water.
d) The junction of bracket connecting S.S. Screen with reflector system & structural Glazing system shall be fully protected against ingress of water by providing suitable water proofing systems as approved by Engineer-in-Charge.

16.25.9 **Anchorage System and Building Frame**

Each glazed unit shall be fixed to the structural slab at each floor level. All fasteners shall be SS-304 of AISI as approved by Engineer-in-Charge. The contractor shall also make necessary modifications to the anchor fasteners to suit existing site conditions of steel reinforcement without additional charge.

16.25.10 **Mullions and Transoms**

a) The sections of mullions and transoms shall be designed to restrict deflection under wind pressure as specified and shall be rigid enough to support and retain the glass spandrel under all conditions. The mullions shall be designed if required, to act as guide tracks for gondolas to permit its free movement in vertical direction for window washing and to sustain concentrated loading by the gondola cage. The mullions & transoms shall also to be designed to cater for the loading of S.S Screen with reflector.
b) Reinforcing members, where used, shall be completely enclosed and if fabricated from steel shall be galvanized and protected with primer and two coats of zinc chromate.

16.26 **Window units (Vision Panels)**

All windows shall be glazed from inside where possible. All cladding as well as internal glazing beads, if any (unless otherwise specified) shall be in anodizedaluminum.

16.27 **Spandrel Units**

a) Spandrel shall be of glass having equal colour matching with vision areas with opacifier coating.
b) Structural spandrel beam, structural glazing fasteners and other construction shall not be seen through the glass from the exterior and shall be fully concealed behind shadow box.
c) A shadow box shall be provided a distance behind the spandrel glass panel. It shall consist of 50 mm semi–rigid fiber glass insulation of minimum density of 48 Kg/cum., and 0.8 mm galvanised sheet steel tray natural finished. The periphery shall be properly sealed. Surface #1 shall be adequately protected against damage until spandrel glazing is done.
d) Two hour rating fire stops–cum–smoke seals shall be constructed continuously at the spandrel to the approval of the Chief Fire Officer and other authorities.

16.28 **Ventilators, Openable Windows and Doors**

a) Ventilators, windows and doors shall be provided at positions as shown on the drawings. The ventilators when in closed position shall remain watertight under all weather conditions and pass the water tightness tests as specified.
b) All hardware and accessories shall be supplied by the contractor and when exposed shall be of stainless steel or approved aluminium alloys in approved finish.
c) Minimum aggregate openable area of the ventilator shall be as given in the Architectural drawings.
d) The detailed system of the ventilators and doors must be proposed by the tenderer keeping the position as shown on the drawings.

16.29 **Coping and Soffit Trimmer**

a) All coping and soffit panels shall have suitably designed frame reinforcement and be fixed rigidly to the structure.
b) All joints between coping /soffit panels and between coping / soffit panels to structural glazing frame and other sections of the work shall be tightly sealed up. Effective drainage system shall be provided to drain out the water that may penetrate through the joints.

16.30 **FABRICATION**

16.30.1 **General:** All assemblies shall be fabricated and assembled in accordance with the drawings and the requirements of these specifications. Deviations of any nature, without approval of the Architect /PMC shall not be permitted.

16.30.2 **Tolerances:** Furnish a schedule of fabrication tolerances for all major wall cladding components. In addition to the fabrication tolerances, provide for and schedule thermal movement including assembly and installation tolerances for all major and/or applicable wall cladding components and/or assemblies.

16.30.3 **Workmanship**

1) All work shall be performed by skilled workmen, specially trained and experienced in the applicable trades and in full conformity with the applicable provisions of the listed References and Standards and/or otherwise noted on the drawings or as specified herein.
2) All work shall be carefully fabricated and assembled with proper and approved provisions for thermal expansion and contraction, fabrication and installation tolerances and design criteria.
3) All forming and welding operations shall be done prior to finishing. Unless otherwise noted.
4) All work shall be true to detail with sharp, clean profiles, straight and free from defects, dents, marks, waves or flaws of any nature impairing strength or appearances; fitted with proper joints and intersections and with specified finishes.
5) All work shall be erected true to plumb, level, square to line, securely anchored, in proper alignment and relationship to work of other trades and free from waves, sags or other defects.
6) Sealants.

16.31 **Shop Assembly**

As far as practicable, all fitting and assembly of the work shall be done in the shop. Work that cannot be permanently shop assembled shall be temporarily assembled in the shop and marked with the approval of Engineer-in-Charge, before disassembly to ensure proper assembly later in the building.

16.32 **Sleeves**

Unless otherwise noted, all aluminum sleeves shall be extruded sections designed to accurately interlock with adjacent sections and incorporate serrated surfaces for the secure bedding of sealant between the parent metal and the sleeve.

16.33 **Fasteners**

1) All fasteners shall be of SS-304 of AISI **stainless steel** with self locking devices, unless otherwise specified, and of sufficient size and strength to withstand the applicable design wind load and dead load forces with safety allowance factors as required for the specific materials. The spacing and quantities of fasteners shall be as required to develop the maximum strength of the member they secure or support. Washers and/or other accessory items shall be of the same material as thee fastener. Torquetighten all assembly fasteners to achieve the maximum torque tension relationship in the fastener.
2) All fasteners shall be concealed unless otherwise shown or approved. The head style for all exposed fasteners shall be countersunk oval head unless otherwise specified on the drawings. Exposed fasteners shall be finished to match surrounding metal finish.
3) All fasteners including washers and accessory items shall be scheduled and designated on the shop drawings so that anyone can witness and assess the assembled units to ensure that all fasteners conform to the designated and approved type, size, material, spacing, etc. When certain items are not readily apparent, such as material and alloy or torque tightening requirements, special instructions for the identification and appraisal of such items shall be issued.

16.34 **Factory Application**

As much as possible work shall be carried out in the factory.
All glazing shall be done in the factory. Gaskets shall be pre-positioned and welded in the factory as far as possible.
Site work shall be kept to a minimum.

16.35 **Measurements & Payment:**

All dimensions of the various extruded sections of aluminum used shall be measured correct to a cm and will be converted into weight based on actual weight of sampling of material done at site as per direction of Engineer-in-charge. The item shall include all the above materials and operations. Only the glazing, hardwares and fittings such as patch fittings, handles, locks, stay-arms, floor springs etc shall be paid separately in the relevant items.

Form of Earnest Money Deposit Bank Guarantee Bond

WHEREAS, contractor..... (Name of contractor) (hereinafter called "the contractor") has submitted his tender dated ..... (date) for the construction of ..... (name of work) (hereinafter called "the Tender")

KNOW ALL PEOPLE by these presents that we .....registered office at ..... (hereinafter called "the Bank") are bound unto **Executive Engineer(C), Postal Civil Division, Mumbai**in the sum of Rs. ..... (Rs. in words .....) for which payment well and truly to be made to the said **Executive Engineer(C),**

Postal Civil Division, Mumbai the Bank binds itself, his successors and assigns by these presents.
SEALED with the Common Seal of the said Bank this .....day of ..... 20.... THE CONDITIONS of this obligation are:

(1) If after Eligibility Bid opening of tender; the Contractor withdraws, his tender during the period of validity of tender (including extended validity of tender) specified in the Form of Tender;

(2) If the contractor having been notified of the acceptance of his tender by the **Executive Engineer(C), Postal Civil Division, Mumbai:**

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to contractor, if required;

OR

(b) fails or refuses to furnish the Performance Guarantee, in accordance with the provisions of tender document and Instructions to contractor,

OR

(c) fails or refuses to start the work, in accordance with the provisions of the contract and Instructions to contractor,

OR

(d) fails or refuses to submit fresh Bank Guarantee of an equal amount of this Bank Guarantee, against Security Deposit after award of contract.

We undertake to pay to the **Executive Engineer(C),Postal Civil Division, Mumbai** either up to the above amount or part thereof upon receipt of his first written demand, without the **Executive Engineer(C),Postal Civil Division, Mumbai** having to substantiates his demand, provided that in his demand the **Executive Engineer(C),Postal Civil Division, Mumbai** will note that the amount claimed by him is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date* ..... after the deadline for submission of tender as such deadline is stated in the Instructions to contractor or as it may be extended by the **Executive Engineer(C), Postal Civil Division, Mumbai** notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE ..... SIGNATURE OF THE BANK

WITNESS ..... SEAL

(SIGNATURE, NAME AND ADDRESS)

*Date to be worked out on the basis of validity period of 180 days or more from the last date of receipt of tender.

In consideration of the President of India (hereinafter called "The Government") having offered to accept the terms and conditions of the proposed agreement between _____ and _____ (hereinafter called "the said contractor(s)" for the work _____ (hereinafter called "The said agreement") having agreed to production of a irrevocable Bank Guarantee for Rs._____(Rupees _____ only) as security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We _____(indicate the name of the bank) (hereinafter referred to as "the Bank) hereby undertake topay to the Government an amount not exceeding Rs._____ (Rupees _____ only) on demand by the Government.
2. We _____ (indicate the name of the bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demure, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs._____ (Rupees _____ only).
3. We, the said bank further undertake to pay to the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and un-equivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.
4. We _____(indicate the name of the Bank) further agree that the guarantee herein contained shallremain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the Government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor (s) and accordingly discharges this guarantee.
5. We _____(indicate name of the bank) further agree with the Government that the government shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) form time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor(s) or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).
7. We _____ (indicate the name of Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.
8. This guarantee shall be valid upto _____ unless extended on demand by Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs._____ (Rupees _____ only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

   Dated the _____ day of_____ for_____.

(indicate the name of Bank)

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER-PROOFING WORKS
(All Water - Proofing Items).

The agreement made this..... day of ..... (Two Thousand _____ only) .....between .....S/o .....(hereinafter called the GUARANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated ..... and made between the GUARANTOR OF THE ONE PART AND the Government of the other part whereby the contractor inter alia undertook to render the building and structures in the said contract recitedcompletely water and leak-proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain water and leak proof, for ten years from the date of completion of work.

NOW THE GUARANTOR hereby guarantees that work executed by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be **Five(05) years**to be reckoned from the date of the completion of work.

The decision of the Engineer-in-charge with regard to nature and cause of defect shall be final and binding on Guarantor.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect being found render the building water proof to the satisfaction of the Engineer-In-Charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the Guarantor's cost and risk. The decision of the Engineer-in-charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing or commits breach thereunder, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and / or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator .....and ..... by ..... for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of:-

1. ..... 2. .....

SIGNED FOR AND BEHALF OF THE PRESIDENT OF INDIA BY .....in the presence of:-

1. ..... 2. .....

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETIONIN RESPECT OF SANITARY INSTALLATIONS / WATER SUPPLY / DRAINAGE WORK.

The agreement made this..... day of ..... (Two Thousand …… only) .....between .....S/o .....(hereinafter called the GUARANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated ..... and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor inter alia, undertook to render the work in the said contract recited leak proof with sound material and workmanship.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable, leak proof and guaranteed against faulty material and workmanship, and finishing for five years from the date of completion of work.

NOW THE GUARANTOR hereby guarantee that work executed by him will be free from any leakage, seepage, cracks in pipes and guaranteed against faulty material and workmanship improper slope, defective galvanizing etc. for Five years to be reckoned from the date of completion of the work.

The decision of the Engineer-In-Charge with regard to nature and cause of defect shall be final.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect to satisfaction of Engineer-in-charge at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the guarantor's cost and risk. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all defects or commits breach thereunder, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator ....and ..... by ..... for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of:-

1. ..... 2. .....

SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY..... in the presence of:-

1. ..... 2. .....

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF STONE WORK/ TILE WORK.

The agreement made this..... day of ..... (Two Thousand _____ only) .....between .....S/o .....(hereinafter called the GUARANTOR of the one part) and the President of India (hereinafter called the Government of the other part)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated ..... and made between the GUARANTOR OF THE ONE PART AND the Government of the other part whereby the contractor inter alia undertook to render the work in the said contract recited structurally stable workmanship, finishing and use of sound materials.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable and guaranteed against faulty workmanship, improper slope, finishing and materials.

NOW THE GUARANTOR hereby guarantee that work executed by him will be free from any material defects, structural defects, cracks, hollow pockets, improper slope, faulty joints etc. for **five (05) years**to be reckoned from the date of completion of the work.

The decision of the Engineer-in-charge with regard to nature and cause of defect shall be final.

During this period of guarantee, the guarantor shall make good all defects to the satisfaction of the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the Guarantor's cost and risk. The decision of the Engineer-in-charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all the defects, commits breach thereunder, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator .....and ..... by ..... for and on behalf of the President of India on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of:-

1. ..... 2. .....

SIGNED FOR AND BEHALF OF THE PRESIDENT OF INDIA BY .....in the presence of:-

1. ..... 2. .....

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OF DEFECTS AFTER COMPLETIONIN RESPECT OF ALUMINIUM DOORS, WINDOWS, VENTILATOR WORK.

The agreement made this..... day of ..... (Two Thousand …… only)..... between .....S/o .....(hereinafter called the GUARANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated ..... and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable, workmanship, powder coating, anodizing, colouring and sealing etc.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable and guaranteed against faulty material and workmanship, defective anodizing/ powder coating for five years from the date of completion of work.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable and guaranteed against faulty material and workmanship, defective anodizing/ powder coating for five years to be reckoned from the date of completion of the work.

The decision of the Engineer-In-Charge with regard to nature and cause of defect shall be final.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect to satisfaction of Engineer-in-charge at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the guarantor's cost and risk. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all defects or commits breach there under, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator ....and ..... by ..... for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of:-

1. ..... 2. .....

SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY..... in the presence of:-

1. ..... 2. .....

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR FOR REMOVAL OFDEFECTS AFTER COMPLETION IN RESPECT OF GYPSUM LIGHT WEIGHT PLASTER.

The agreement made this..... day of ..... (Two Thousand …… only)..... between .....S/o .....(hereinafter called the GUARANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated ..... and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable, workmanship, powder coating, anodizing, colouring and sealing etc.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable and guaranteed against faulty material and workmanship, Cracks, peeling off plaster etc. for five years from the date of completion of work.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain sound in quality and guaranteed against faulty material and workmanship, Cracks, peeling off plaster etc for five years to be reckoned from the date of completion of the work.

The decision of the Engineer-In-Charge with regard to nature and cause of defect shall be final.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect to satisfaction of Engineer-in-charge at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the guarantor's cost and risk. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all defects or commits breach there under, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligator ....and ..... by ..... for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of:-

1. ..... 2. .....

SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY..... in the presence of:-

1. ..... 2. .....

i) Particle size and shape
ii) Slump test
iii) Flakiness & Elongation Index tests
iv) Compressive strength (concrete or bricks) test
v) Rebound Hammer test
vi) Bulking of sand
vii) Silt content of sand
viii) Temperature measuring with thermometer with brass protected end 0-200^{o} C

FIELD TESTING EQUIPMENT AND INSTRUMENTS

A. Testing Equipment at Field Laboratories

i) Balances
   a) 7kg to 10 kg. Capacity, Semi-self indicating type-Accuracy 10 gm
   b) 500 gm. Capacity, Semi-self indicating type Accuracy 1 gm
   c) Pan Balance – 5 Kg. Capacity, accuracy 10 gm.

ii) Sieves: as per IS 460-1962.
   a) I.S. Sieves – 450 mm internal dia of sizes 100 mm, 80 mm, 63 mm, 50mm, 40 mm, 25 mm, 20 mm, 12.5 mm, 10 mm, 6.3 mm, 4.75 mm complete with lid and pan.
   b) IS Sieves – 200 mm internal dia(brass frame) consisting of 2.36 mm, 1.18 mm, 600 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns with lid and pan.

iii) Sieve shaker capable of 200 mm and 300 mm dia sieves, motorized operated with timing switch assembly.

iv) Equipment for slump test – Slump Cone, Steel Plate, tamping rod, steel scale, scoop.

v) Graduated measuring cylinders 200 ml capacity

vi) Enamel trays (for efflorescence test for bricks and other tests)
   a) 300 mm X 250 mm X 40 mm
   b) Circular plates of 250 mm dia
   c) 600 mm X 450 mm X 500 mm
   d) 450 mm X 300 mm X 40 mm.

vii) ISI marked 150X150X150 mm concrete cube moulds as per site requirement – 18 Nos.

viii) Graduated cylinder 1000 ml. Capacity.

ix) Pumps & pressure gauges for hydraulic testing of pipes.

x) Moisture meter xi) Oven xii) PH Meter.

xiii) Any other equipment for site tests as outline in BIS and as directed by the Engineer-in-charge.

B. Field Testing Instruments

i) Steel tapes – 3 m

ii) Digital Vernier calipers

iii) Digital Micrometer Screw 25 mm gauge

iv) A good quality plumb bob

v) Spirit level minimum 30 cms long with 3 bubbles for horizontal vertical

vi) Wire gauge (circular type) disc.

vii) Foot rule

viii) Long nylon thread

ix) Rebound hammer for testing concrete

x) Magnifying glass

xi) Screw driver 30 cms long

xii) Ball pin hammer, 100 gms

xiii) Plastic bags for taking samples

xiv) Digital Distance meter

xv) Leveling machine

xvi) Theodolite

xvii) Total survey station

xviii) Ultrasonic Pulse velocity meter

Note: The above list is only indicative and not exhaustive. (If the contractor fails to bring any of the equipment mentioned under A & B of above, necessary recovery shall be made from the contractor)

C. Minimum required T&P

Sl. no.	Detail of T&P	Qty.	Remarks
1	Steel Shuttering	**1500 Sq.M.**	
2	Steel props of required sizes	**1500 Sq.M. space**	
3	Excavator cum loader	1 Nos.	
4	Building Hoist	1 No.	
5	Concrete mixer with hopper (For other than RCC work)	1 No.	
6	DG set (Over all capacity 20 KVA)	1 No.	
7	Welding machine	2 Nos.	
8	Plate Vibrator	2 Nos.	
9	Needle Vibrator (Electrically operated)	2 Nos.	
10	Needle Vibrator (Diesel/Petroloperated)	2 Nos.	
11	Bar Cutting & Bending machine	1 Nos.	
12	Water pump	2 Nos.	
13	Cover meter	1 No.	

PROFORMA FOR TESTS CARRIEDOUT

NAME OF THE WORK: DIVISION/
AGREEMENTNO.&DATE: SUB-DIVISION

Sl. No.	Item	Quantities as per agreement	Frequency as per specification	No. of tests required	R.A. billNo.	Uptodate quantity	No. of tests required	No. of tests actually done	Remarks
1	2	3	4	5	6	7	8	9	10

Signature of Contractor

CEMENT/PAINT REGISTER

NAME OF WORK: DIVISION:

AGREEMENT NO.: SUB-DIVISION:

Particulars of Receipt

Date of Receipt	Source of receipt with details if any	Batch No.	Date of manufacture	Date of expiry	Qty. received	ProgressiveTotal	Date of issued	Qty Issued	Items of work for which	Qty Returned at the end of day's work
1	2	3	4	5	6	7	8	9	10	11

Particulars of Issue

Net Qty. Issued	Progressive Total	Daily Balance in Hand	Contractor's Initial	JE's Initials	Periodical Check	
					By AE	By EE
12	13	14	15	16	17	18

LIST OF PREFERRED MAKES OF MATERIALS (FOR CIVIL WORKS)

Note:

1. Unless otherwise specified, the brand/make of the material as specified in the item nomenclature or in the particular specifications or in the list of approved materials attached in the tender shall be used in the work.
2. The Contractor shall obtain prior approval from the Engineer-in-Charge before placing order for any specific Brand/ Make of material.
3. Whenever the specified brand of material is not available then, the Engineer-in-Charge may approve any material equivalent to that specified subject to a definite proof being offered by the Contractor for its equivalence and its non-availability to his satisfaction.

No.	MATERIALS:	PREFFERED BRAND / MAKE
1.	Acrylic Emulsion Paint	Asian (Royale), ICI (Velvet), Berger (Luxol Silk), Nerolac (Allscapes)
2.	Premium Acrylic Smooth Exterior Paint	**Apex Ultima** of Asian paints, **Weather Coat All Guard** of Berger Paint.
3.	Aluminium Composite Panel	Alpolic, Aluco Bond,Reynobond, Euro bond, Al-stone, Aludecor.
4.	Aluminium Extrusions	Hindalco, Indalco, Jindal.
5.	Aluminum Sections	Hindalco, Indalco, Jindal.
6.	Board & Plywood	Duro, Green, Century.
7.	Ceramic/Rectified Tiles	Premium double charge tiles of :-Kajaria, RAK, HR Johnsons
8.	CP fittings	Hindware, Johnson, Marc, Cera
9.	CPVC Pipes	Astral,Flowguard, Ashirvad, finolex,supreme
10.	Designer coloured cement concrete floor tiles for external used / Concrete paver blocks.	Ultra, Nitco, or Equivalent(mandatory tests to be performed before execution).
11.	Epoxy Primer & Paints	Berger, Pidilite, SIKO, Asian.
12.	Float Glass	Modi Float, Saint Gobain, Tata.
13.	Flush Doors (ISI Mark only)	Green, Duro, Century or Equivalent (mandatory tests to be performed before execution).
14.	Galvanized/Stainless Steel Anchor Fasteners	Arrow, Hilti, Fischer, Hatticth
15.	Gun Metal Gate Valve	Zoloto, Leader, SAINT
16.	Gypsum Board False Ceiling	Boral Gypsum, Gypsum India Limited, USG, St. Gobain(Gyproc)
17.	Hardner	Hard crete of Snowcem India, MC Deritop F.H.
18.	Hydraulic Door Closer	Hardwyn, Godrej, Dorma, Doorset
19.	Hydraulic Floor spring	Hardwyn, Godrej, Dorma, Doorset
20.	Laminate	Greenlam, Decolam, Century, Formica.
21.	Melamine Polish	Melamine Gold of Asian Paint, Wudfin of pidilite, Timbertone of ICI Dulux.
22.	M. S. Pipe	Electro Steel, Apollo (ISI), Jindal, Tata
23.	Marine Plywood / BWP Ply	Century, Green, Duro
24.	Oil Bound Distemper	Asian (Tractor), ICI (Maxi lite), Berger(Bison), Nerolac (NAD)
25.	Sanitary fittings	Hindware, Cera, Jaquar
26.	Plastic Connection Pipe	Jaquar, Kamal Delux.

No.	MATERIALS:	PREFFERED BRAND / MAKE
27.	Ply Wood	Duroply, Green ply, Century ply
28.	Pre-coated GI sheet for roofing	Jindal Saw, Tata Blue Scope.
29.	Polymer Modified Cementitious grout	Bal-Endura, Pidilite, Ceco.
30.	Pre-laminated Particle Board IS : 12823 (Gr-I, Type-II)	Action TESA, Kitlam, Archid Ply, Asis, Green Lam
31.	Primer	Asian, ICI DuLux, Nerolac
32.	PVC Rain Water Pipe & Fitting IS:13592 Type A	Finolax, Supreme, Plasto.
33.	PVC Shutter	Rajshri, Sintex, Akal America.
34.	PVC Tank (ISI Marked)	Sintex, Star, Lotus, Plasto, Supreme.
35.	R. C. C. Pipes (NP-2)	ISI Make
36.	Solid Plastic Seat Cover for EWC	EWC standard seat cover white of Perryware/Hindware/ Neycer, Cera.
37.	Stainless Steel	Jindal Stainless Steel, Salem Steel
38.	Stainless steel Sink with or without Draining board.	Nirali, Hindware
39.	Structural Silicon Sealant	Dow Corning, Wacker, GE.
40.	Structural steel section	TATA, SAIL, RINL, Jindal.
41.	Synthetic Enamel Paints	ICI(Dulux),Asian (Apcolite),Berger (Luxol),Nerolac (NST)
42.	Textured Exterior wall paint	Snowcem, ICI (dulux), Asian.
43.	Towel Ring/Towel Rod/Towel Rack.	Marc, Jaquar,
44.	Tubular Section Windows	M/S classic Engineers & Fabricator, Raipur, M/s JK Enterprises, Jaipur.
45.	TMT Bars	As per criteria laid down in Para 4.3 of Part-B
46.	Vitrified Tiles	First quality full body tiles of Kajaria, RAK Ceramics, Johnson, NITCO, RESTILE
47.	Waste Pipe	Kamal with brass checknut,Viking
48.	Water Proofing Compound (Liquid)	Pidiproof Ltd., Sico, Impermo
49.	Wire mesh	Sterling, Trimurty welded mesh.
50.	White Cement	JK, Birla etc
51.	Wall Putty	JK, BIRLA, Asian
52.	Work Stations/ Modular Furniture	Godrej, Wipro
53.	Stoneware pipe and Gully Trap	Perfect or equivalent
54.	PVC flushing System	Johnson, Somany, Hindware, Jaquar
55.	Tactile Tiles	Johnson, Somany, Kajaria
56.	Plastic Emulsion Paint	Asian, ICI, Berger, Nerolac

Financial Bid: - Part C
(Work Schedule)

Name of Work: **Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa**

Schedule of Quantity

N/W	Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa				
SLNo	**Description**	**Qty**	**Unit**	**Rate**	**Amount**
1	Carriage of Materials				
1.1	By Mechanical Transport including loading,unloading and stacking				
1.1.1	Disposal of moorum/building rubbish/ malba/ similar unserviceable, dismantled or waste material by mechanical transport including loading, transporting, unloading to approved municipal dumping ground for lead upto 10 km for all lifts, complete as per directions of Engineer-in-charge. Note - Item to be applicable in urban areas having directions for restricted hours for movement/plying of load carrying motor vehicle of 3.5 cum or more.	5	cum	548.07	2740.33
2	EARTH WORK				
2.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, for all lift, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
2.1.1	All kinds of soil.	5	cum	288.73	1443.65
2.2	Excavating trenches by mechinical / manual means of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, for all depth, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m:				
2.2.1	All kinds of soil				
2.2.1.1	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	20	metre	390.61	7812.24
3	CEMENT CONCRETE (CAST IN SITU)				
3.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
3.1.1	1:2:4 (1 Cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 40 mm nominal size derived from natural sources)	1	cum	8630.06	8630.06
3.1.2	1:5:10 (1 cement : 5 coarse sand (zone-III) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)	2	cum	7230.56	14461.12
4	MASONRY WORK				
4.1	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 3.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :				
4.1.1	Cement mortar 1:6(1 cement : 6 coarse sand)	0.5	cum	10100.50	5050.25
5	CLADDING WORK				
5.1	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing of edges to give high gloss finish etc. complete at all levels.				
5.1.1	Granite stone slab of colour black, Cherry/Ruby red				
5.1.1.1	Area of slab over 0.50 sqm	2	sqm	5697.29	11394.57

5.2	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3(1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	50	sqm	1406.44	70321.77
5.3	Providing & Fixing Cudappah stone (one sided polished) of required size at kitchen platform, wash basin counter platform and fixed in walls or similar types of works using cement,adhesive etc including finishing as per direction of Engineer - in -charge. (Cudappah stone of thickness not less than 25mm)	6	sqm	1444.00	8664.03
6	WOOD AND P. V. C. WORK				
6.1	Providing wood work in frames of false ceiling, partitions etc. sawn and fixed in position with necessary stainless steel screws etc.				
6.1.1	Sal wood	0.2	cum	116195.62	23239.12
6.2	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick.				
6.2.1	Float glass panes				
6.2.1.1	4 mm thick glass pane (weight not less than 10 kg/sqm).	1	sqm	2486.65	2486.65
6.3	Providing and fixing glazed shutters for doors, windows and clerestory windows using 4 mm thick float glass panes (weight not less than 10 kg per sqm) fixing with ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws.				
6.4	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:				
6.4.1	25 mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws	5.25	sqm	2322.37	12192.46
6.5	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS: 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :				
6.5.1	250x16 mm	6	each	289.06	1734.38
6.6	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				
6.6.1	250x10 mm	8	each	127.73	1021.81
6.7	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				
6.7.1	125 mm	8	each	73.49	587.89
6.8	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete.				
6.8.1	Single rubber stopper	4	each	43.93	175.70
6.9	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.				
6.9.1	1.0 mm thick	10	sqm	995.30	9953.03

6.1	Providing and fixing plain lining with necessary screws/nuts & bolts/ nails, including a coat of approved primer on one face, and fixed on wooden /steel frame work, complete as per direction of Engineer-in- charge (Frame work shall be paid for separately).				
6.10.1	12 mm thick commercial ply conforming to IS : 1328 BWR type	5	sqm	1358.41	6792.03
6.11	Providing and fixing steel roller for uPVC sliding window with necessary screws etc. complete.	16	each	128.45	2055.16
6.12	Providing and fixing steel (white power coated) crescent lock for uPVC sliding window/ door with necessary screws etc. complete.	8	each	219.96	1759.67
7	STEEL WORK				
7.1	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	100	kg	148.30	14830.27
8	FLOORING				
8.1	Providing and fixing 1st quality ceramic glazed floor tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement: 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	5.5	sqm	1234.23	6788.26
8.2	Providing and laying Vitrified tiles in floor in diferent sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.				
8.2.1	Double charge vitrified tile polished finish of size				
8.2.1.1	Size of Tile 600 x 600 mm	50	sqm	1612.42	80620.88
8.3	Providing and laying Vitrified tiles in diferent sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joint with white cement & matching pigments etc. complete.				
8.3.1	Size of Tile 600x600 mm	5	sqm	1800.32	9001.60
9	ROOFING				
9.1	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS :5382, leaving 10 mm gap for thermal expansion.				
9.1.1	Bend 87.5°				
9.1.1.1	110 mm bend	8	each	166.77	1334.17
9.2	Providing and fixing precoated galvanised iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-Charge) of total coated thickness 0.50 mm (base metal of minimum 0.45 mm thickness with total coating thickness of 0.05mm) with zinc coating 120 grams per sqm as per IS: 277, in 240 mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55 mm) with EPDM seal, complete upto any pitch in horizontal/ vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required.	10	sqm	819.33	8193.25

9.3	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type B, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				
9.3.1	110 mm diameter	12	mtr	596.92	7162.99
9.4	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type B, including jointing with seal ring conforming to IS :5382, leaving 10 mm gap for thermal expansion.				
9.4.1	Single equal plain junction of required degree with access door 110x110x110mm	4	each	398.75	1595.01
10	FINISHING				
10.1	Distempering with 1st quality acrylic distemper (ready mixed) having VOC content less than 50 gram/litre, of approved manufacturer and of required shade and colour all complete to achieve even shade and colour:				
10.1.1	New work (two or more coats) over and including water thinnable priming coat with cement primer having VOC content less than 50 gram/litre	230	sqm	205.93	47363.14
10.2	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:				
10.2.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	50	sqm	189.79	9489.38
10.3	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
10.3.1	Two or more coats on new work	65	sqm	172.93	11240.28
10.4	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	230	sqm	173.13	39820.13
10.5	Removing white or colour wash by scrapping and sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete	230	sqm	21.91	5038.63
11	REPAIRS TO BUILDING				
11.1	Repairs to plaster of thickness 12 mm to 20 mm in patches of area 2.5 sq.meters and under, including cutting the patch in proper shape, raking out joints and preparing and plastering the surface of the walls complete, including disposal of rubbish to the dumping ground, all complete as per direction of Engineer-in-Charge.				
11.1.1	With cement mortar 1:4 (1cement: 4 coarse sand)	15	sqm	621.72	9325.77
11.2	Cleaning and desilting of gully trap chamber, including removal of rubbish mixed with earth etc. and disposal of same, all as per the direction of Engineer-in-charge.	4	each	120.13	480.51
11.3	Cleaning of chocked sewer line by diesel running vehicle mounting hydraulic operated high pressure suction cum jetting sewer cleaning machine fitted with pump having 4000 litres suction capacity and 6000 litres water jetting tank capacity including skilled operator, supervising engineer etc. for cleaning and partial desilting of manholes and dechocking of sewer lines. Dechocking and flushing of sewer line from one manhole to another by high pressure jetting system of 2200 PSI for sewer line from 150 mm dia upto 300 mm	30	metre	377.97	11339.00
11.4	Dismantling W.C. Pan of all sizes including disposal of dismantled materials including malba all complete as per directions of Engineer-in-Charge.	2	each	148.75	297.49
11.5	Hacking of CC flooring including cleaning for surface etc. complete as per direction of the Engineer-in-Charge.	51	sqm	3.83	195.17
11.6	Dismantling 15 to 40 mm dia G.I. pipe including stacking of dismantled pipes (within 50 metres lead) as per direction of Engineer-in-Charge. (a) Internal Work- Exposed on wall	20	metre	3.60	72.10

11.7	Taking out existing wooden door shutter, repair by cutting, painting etc. and refixing of repaired door shutters to existing door frames, including replacement of hinges with screws, etc. as required, all complete as per the direction of the Engineer-in-charge.	6	each	475.97	2855.80
11.8	Taking out existing wooden glazed/panelled/flush window shutter, repair by cutting and refixing of repaired window shutters to existing window frames, including replacement of hinges with screws, etc. as required, all complete as per the direction of the Engineer-in-charge.	6	each	463.15	2778.93
12	Dismantling and Demolishing				
12.1	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead.				
12.1.1	For thickness of tiles 10 mm to 25 mm	50	sqm	81.42	4070.84
13	SANITARY INSTALLATIONS				
13.1	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:				
13.1.1	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	2	each	7506.54	15013.07
13.2	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:				
13.2.1	White Vitreous China Flat back wash basin size 550x 400 mm with single 15 mm C.P. brass pillar tap	2	each	2084.45	4168.89
13.3	Providing and fixing CP Brass 32 mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	2	each	1147.82	2295.64
13.4	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
13.4.1	Semi rigid pipe				
13.4.1.1	32 mm dia	2	each	115.25	230.50
13.5	Providing and fixing mirror of superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shade with 6 mm thick hard board backing :				
13.5.1	Rectangular shape 453x357 mm	2	each	1510.54	3021.07
13.6	Providing and fixing PTMT towel ring trapezoidal shape 215 mm long, 200 mm wide with minimum distances of 37 mm from wall face with concealed fittings arrangement of approved quality and colour, weighing not less than 88 gms.	2	each	257.28	514.57
13.7	Providing and fixing SWR PVC Nahani trap of 100 mm inlet and 75 mm outlet including cost of cutting and making good the walls and floors :	4	each	229.90	919.59
14	WATER SUPPLY				
14.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply and all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall				
14.1.1	20 mm nominal dia Pipes	20	metre	371.59	7431.77
14.1.2	25 mm nominal dia Pipes	20	metre	445.41	8908.15
14.2	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. External work				
14.2.1	32 mm nominal dia Pipes	10	metre	486.50	4865.04

14.3	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete :				
14.3.1	25 to 40 mm nominal bore	1	each	1011.50	1011.50
14.4	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
14.4.1	25 mm nominal bore	2	each	690.38	1380.76
14.4.2	32 mm nominal bore.	1	each	764.92	764.92
14.5	Providing and fixing uplasticised PVC connection pipe with brass unions :				
14.5.1	30 cm length				
14.5.1.1	15 mm nominal bore	2	each	94.28	188.57
14.6	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :				
14.6.1	15 mm nominal bore	2	each	562.15	1124.31
14.7	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.				
14.7.1	15 mm nominal bore	4	each	910.34	3641.35
14.8	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.				
14.8.1	15 mm nominal bore	4	each	743.68	2974.71
14.9	Providing and fixing PTMT grating of approved quality and colour.				
14.9.1	Circular type				
14.9.1.1	100 mm nominal dia	4	each	41.71	166.83
14.1	Providing and fixing PTMT extension nipple for water tank pipe, fittings of approved quality and colour.				
14.10.1	25 mm nominal bore, weighing not less than 62 gms	6	each	125.73	754.38
15	DRAINAGE				
15.1	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round pipes including bed concrete as per standard design :				
15.1.1	150 mm diameter S.W. pipe	20	metre	1308.71	26174.26
15.2	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x 300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design:				
15.2.1	100x100 mm size P type				
15.2.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 3.5	2	each	3003.38	6006.76
15.3	Dismantling of old S.W. pipes including breaking of joints and bed concrete stacking of useful materials near the site within 50 m lead and disposal of unserviceable materials into municipal dumps :				
15.3.1	100 mm diameter	15	metre	98.72	1480.81
15.4	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :				

15.4.1	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
15.4.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 3.5	4	each	14165.35	56661.40
15.5	Supplying and fixing C.I. cover without frame for manholes :				
15.5.1	455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg	-4	each	1506.32	-6025.28
15.6	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality				
15.6.1	L D- 2.5				
15.6.1.1	Rectangular shape 600x450 mm internal dimensions	4	each	1594.67	6378.68
15.7	Dismantling of manhole including R.C.C. top slab, C.I. cover with frame, including stacking of useful materials near the site and disposal of unserviceable materials within 50 m lead as per direction of Engineer-in-charge:				
15.7.1	Rectangular manhole 90x80 cm and 45 cm deep	2	each	2818.36	5636.72
15.8	Providing and fixing foamfit drainage pipes conforming to IS : 16098 including jointing with approved sealing solvent (i) Single socketed pipes.- (SN-8) a) 160 mm diameter.	20	mtr	1078.21	21564.12
16	ALUMINIUM WORK				
16.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :				
16.1.1	For fixed portion				
16.1.1.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	25	kg	588.88	14722.12
16.1.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)				
16.1.2.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	20	kg	703.74	14074.89
16.2	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):				
16.2.1	With float glass panes of 4.0 mm thickness (weight not less than 10kg/sqm)	4	sqm	1305.33	5221.32
16.3	Taking out existing aluminium sliding/casement window shutter, repair by re aligning and refixing of repaired window shutters to existing window frames, including replacement of hinges with screws,rollers etc. as required, all complete as per the direction of the Engineer-in-charge.	4	each	231.55	926.20
17	NEW TECHNOLOGIES AND MATERIALS				

17.1	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/Clerestory windows & other Frames/ Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/ wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm2, modulus of elasticity 900 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engineer-In- Charge. (M.S hold fast/lugs or SS dash fasteners shall be paid for separately). Note: For WPC solid door/window frames, minus 5 mm tolerance in dimensions i.e depth and width of profile shall be acceptable. Variation in profile dimensions on plus side shall be acceptable but no extra payment on this account shall be made.				
17.1.1	Frame size 50 x 100 mm	19	metre	1051.21	19972.95
17.2	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid plain flush door shutter of required size comprising of virgin polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) having minimum density of 650 kg/cum and screw withdrawal strength of 1800 N (Face) & 900 N (Edge), minimum compressive strength 50 N/mm2, modulus of elasticity 850 N/mm2 and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixing with stainless steel butt hinges of required size with necessary full body threaded star headed counter sunk S.S screws, all as per direction of Engineer-In- Charge. (Note: stainless steel butt hinges and necessary S.S screws shall be paid separately)				
17.2.1	30 mm thick	7.2	sqm	4821.45	34714.42
18	Credit items				
18.1	Cerdit for taking out the existing unserviceable matertials received from site.				
18.1.1	a) Old unserviceable Bib cock/stop cock/pillar tap.	4	each	-49.00	-196.00
18.1.2	b) Old unserviceable Brass gate valve.upto 25/32/40 mm dia.	4	each	-104.00	-416.00
18.1.3	c) Old unserviceable 15 mm to 40 mm dia GI pipe & fittings.	20	rmt	-62.00	-1240.00
18.1.4	f) Old unserviceable wooden door shutters / flush door shutte/Panelled door shutters/ glazed shutters.	2	each	-462.00	-924.00
	Total				**730518.50**
	Say				**730519.00**

Say Grand Total = 7,30,519

Proforma for quoting the rates(SPECIMEN COPY FOR VIEWING ONLY)
(RATES SHALL BE QUOTED IN EXCEL FILE AS PER NIT CONDITIONS)

Percentage BoQ

Tender Inviting Authority: Executive Engineer (Civil), Postal Civil Division, Mumbai

Name of Work	**Repairs to Gents and Ladies rest room of Panaji STG Office (PSQ:A13/I & A-14/I) at Postal Staff Colony, Alto Porvorim, Goa**
Contract No. : NIT No. 04/PCD(M)/2026-27	
Name of the Bidder/Bidding Firm/Company	

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevent columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER#	TEXT #	NUMBER#	TEXT #	NUMBER#	NUMBER#	TEXT #
Sl.No.	Item Description	Quantity	Units	Estimated Rate In Rs. P	TOTAL AMOUNT WithTaxes in Rs. P	TOTALAMOUNT In Words
1	**2**	**3**	**4**	5	6	7
1	As per schedule attached in tender document					
1.01	Contractor should quote %age above/ Below/ At par on total estimated cost.	**1.00**	**Nos.**	Rs. 7,30,519	Rs.7,30,519	
Total in Figures						
Quoted Rate in Figures			Select		Rs.7,30,519	INR Rupees Seven Lakh Thirty Thousand Five Hundred Nineteen Only
Quoted Rate in Words	**INR Zero Only**					