

INDEX

Name of work: - Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).

S. NO.	DESCRIPTION	PAGE NO.
1	PART-A	2
(i)	INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING.	3-4
(ii)	RECEIPT OF DEPOSITION OF ORIGINAL EMD	5
(iii)	PROFORMA FOR UNDERTAKING of OBTAINING GST CERTIFICATE	6
(iv)	CPWD-6 FOR e-TENDERING	7-10
(v)	TENDER FORM CPWD-7 INCLUDING SCHEDULE A TO F	11-18
(vi)	TABLE OF MILESTONES	19
2	PART-B (CIVIL WORK)	20
(i)	SPECIAL CONDITIONS FOR CIVIL WORK.	21-38
(ii)	PARTICULAR SPECIFICATIONS FOR CIVIL WORK.	39-50
(iii)	FORM OF BANK GUARANTEE FOR EARNEST MONEY DEPOSIT / PERFORMANCE GUARANTEE/ SECURITY DEPOSIT/MOBILIZATION ADVANCE	51
(iv)	LIST OF FIELD TEST, FIELD TESTING EQUIPMENTS AND INSTRUMENTS, LIST OF T&P & PROFORMA FOR TEST CARRIED OUT, PROFORMA FOR CEMENT/ PAINT REGISTERS.	52-54
(v)	LIST OF APPROVED MAKES OF CIVIL WORK MATERIAL.	55-59
4	PART- C (SCHEDULE OF QUANTITIES)	60
(i)	SCHEDULE OF QUANTITIES (CIVIL WORK)	62-65
5	PROFORMA FOR QUOTING PERCENTAGE RATE TENDER	66

This NIT approved for Rs. 19,34,793.00 (Rs. Nineteen Lakh Thirty-Four Thousand and Seven Hundred and Ninety-Three Only) comprises pages 1 to 66.

Sr. D/Man
CPWD, Ludhiana

Assistant Engineer (P)
CPWD, Ludhiana

Executive Engineer-Ludhiana Division
CPWD, Ludhiana

Name of work: - Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).

PART-A

**INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING FORMING PART OF
BID DOCUMENT AND TO BE POSTED ON WEBSITE.**

The Executive Engineer-Ludhiana, CPWD, Type-V/03, NSTI Campus, Ludhiana on behalf of President of India invites online **Percentage Rate Bids** from CPWD enlisted contractors of **appropriate class in (B&R) Buildings & roads category in single bid system** for the following work: -

Sl. No.	NIT No.	Name of Work and Location	Estimated Cost Put to Tender	Earnest Money	Time/Period of completion	Date of release of tender through e-procurement solution	Last date & time of submission of Financial Bid	Date and Time of opening of tender
1	17/EE-Ludhiana/2026-2027	Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).	Rs.19,34,793/-	Rs. 38,696/-	90 days	30.09.2026	07.10.2026 up to 03:00 PM	07.10.2026 at 03:30 PM

- 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.
- Information and Instructions for bidders posted on website shall form part of bid document.
- 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 can be seen and downloaded from website <https://etender.cpwd.gov.in/CPWD> or www.cpwd.gov.in free of cost.
- The bid can only be submitted after **deposition of original EMD either in the office of any Executive Engineer inviting bids or Division office of any Executive Engineer, CPWD within the period of bid submission. (The EMD document shall only be issued from the place in which the office of receiving division office is situated)** 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 Receipts and Bank Guarantee of any commercial Bank towards EMD in favour of respective Executive Engineer – Ludhiana, CPWD, Ludhiana and other documents as specified.
The Contractors already registered on the e-tendering portal will have option to continue by paying tender processing fee at existing rates upto one year from the date of registration, or to switch over to the new registration without tender processing fee any time. All new registrations from 01.04.2015 will be without tender processing fee.

5. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
6. On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
7. Contractor can upload documents in the form of JPG format and PDF format.
8. Contractor must ensure to quote Percentage rate. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as “0”. Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as “0” (ZERO).
9. SC/ST contractors enlisted under class V category are exempted from processing fee payable to ITI Ltd.
10. List of Documents other than financial instruments to be scanned and uploaded within the period of bid submission: -
 - i) Treasury Challan/ Demand Draft / Pay Order or Banker’s Cheque / Fixed Deposit Receipts/ Deposit at Call Receipt / Bank Guarantee of any commercial Bank against EMD.
 - ii) Copy of receipt for deposition of original EMD to division office of any Executive Engineer, [including NIT issuing EE] CPWD.
 - iii) EPFO, ESIC, BOCW Welfare Board, PF Nos., labour License if available otherwise the letter of award shall be issued to lowest bidder only on receipt of copy of Labour license, Registration with EPFO, ESIC, BOCW Welfare Board and PF Nos. or submitting the proof of applying for these thereof along with P.G.
 - 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 undertaking (as per **Form- “B”** enclosed) along with 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 CPWD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CPWD or GST department in this regard”.
Note: Under S. No. IV it is informed that “GST registration certificate” is to be of “Punjab” state. In case the bidder has certificate of registration of GST of some other state then that registration shall not be considered and thus the bidder must upload the undertaking to avoid disqualification.
 - v) Enlistment order of the CPWD contractors in appropriate class in **(B&R) Buildings & roads**.
 - vi) ERP training certificate.
 - vii) Email and mobile No. of the firm/agency on the letter head of firm/agency (for making correspondence).
 - viii) Any other document as specified in the NIT.
11. Integrity Pact of the bid document shall be signed between Executive Engineer and the successful bidder after acceptance of bid.
12. It will be mandatory to constitute Dispute Redressal Committee (DRC) & contractor or department can only seek arbitration if not satisfied with the decision of DRC. DRC shall be headed by Chief Engineer when total claims are more than Rs. 25.00 lacs & by the Chief Engineer when total claim are less than Rs. 25.00 lacs. This should be read along with provision of clause 25 of **GCC 2023 Maintenance Works** (amended up to last date of submission of tender) & further CON amendments issued up to last date of submission of tender.
13. It is mandatory to upload scanned copies of all documents mentioned above at Sr. No. 10 including GST registration as stipulated in the bid document. If such document is not uploaded his bid will become invalid and processing fee shall not be refunded.
14. If the contractor is found ineligible after opening of bids, his bid shall become invalid and processing fee shall not be refunded.
15. 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 contractor the bid shall become invalid and processing fee shall not be refunded.

Receipt of deposition of original EMD

(Receipt No...../ Date))

1	Name of work	Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).
2	NIT No	17/EE-Ludhiana/2026-2027
3	Estimated Cost	Rs.19,34,793/-
4	Amount of Earnest Money Deposit	Rs. 38,696/-
5	Last date of submission of bid	Upto 03:00 PM on 07.10.2026

(# To be filled by EMD receiving EE)

1	Name of Contactor	
2	Form of EMD	
3	Amount Earnest Money Deposit	
4	Date of submission of EMD	

Signature, Name and Designation of EMD
receiving officer (EE/AE/AAO)
alongwith Office Stamp

FORM “B”

Undertaking regarding obtaining GST registration Certificate

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 CPWD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CPWD or GST department in this regard.

Signature of Bidder(s) or an authorized

Officer of the firm with stamp

Signature of Notary with seal

CPWD-6 FOR e-TENDERING

1. **Percentage Rate Bids** from CPWD enlisted contractors of **appropriate class in (B&R) Buildings & roads category in single bid system** for the following work: **Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).** The enlistment of the contractors should be valid on the last date of submission of bids. In case the last date of submission of tender 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 **Rs.19,34,793/-**. This estimate, however, is given merely as a rough guide.
2. Agreement shall be drawn with the successful bidders on prescribed Form No. **CPWD 7** (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on website **www.cpwd.gov.in**. Bidders shall quote his rates as per various 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 upto 90 **days** from the date of start as defined in schedule 'F' or from the first date of handing over of the site, whichever is later, 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.

(ii). The architectural & structural drawing shall be made available in phased manner as per requirement of the same as per approved programme of completion submitted by the contractor after award of the work.
5. 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 from website **https://etender.cpwd.gov.in/CPWD** or **www.cpwd.gov.in** free of cost.
6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
8. When tenders are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.
9. **Earnest Money can be paid 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 Executive Engineer, CPWD, Ludhiana payable at Ludhiana)** along with Bank Guarantee of any Commercial Bank wherever applicable in accordance with the Form annexed hereto having validity for 6 months or more from the last date of receipt of tenders shall be scanned and uploaded to the e-tendering website within the period of tender submission. **The Original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. (The EMD document shall only be issued from the place in which the office of receiving division office is situated).** The EMD receiving Executive Engineer 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 upto the specified bid submission date and time.

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 Commercial bank **having validity for 6 months or more from the last date of receipt of bids which** is to be scanned and uploaded by the intending bidders.

Copy of Enlistment Order and certificate of work experience and other documents as specified in the press notice shall be scanned and uploaded to the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in press notice shall have to be submitted by the lowest bidder only within a week physically in the office of the tender opening authority.

Online bid/ tender documents submitted by intending bidders shall be opened only of those bidders, whose original EMD deposited with any division of CPWD and other documents placed envelope are found in order.

The bid submitted shall be opened at 03:30 PM on 07.10.2026.

10. The bid/ tender submitted shall become invalid and cost of bid & e-Tender processing fee shall not be refunded if:
 - (i) The bidder is found ineligible.
 - (ii) The bidder does not deposit EMD with division office of any Executive Engineer, CPWD. (The EMD document shall only be issued from the place in which the office of receiving division office is situated).**
 - (iii) The bidder does not upload all the documents (including GST) as stipulated in the bid documents including the copy of receipt for deposition of original EMD.**
 - (iv) 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 tenderer in the office of tender opening authority.
 - (v) 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.**
11. The contractor whose tender is accepted will be required to furnish performance guarantee of 5% (Five Percent) of the tendered amount within the period specified in Schedule F. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 10000/-) or Deposit at Call receipt of any commercial Bank/Banker's cheque of any commercial Bank/Demand Draft of any commercial Bank/Pay order of any Commercial Bank (in case guarantee amount is less than Rs. 99,854/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Commercial Bank or the State Bank of India 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 tender 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 and Programme Chart (Time and Progress) within the period specified in Schedule F.**

12. Intending bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders 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 tender. A tenderer shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent upon any misunderstanding or otherwise shall be allowed. The tenderer 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 tender by a tenderer 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, Conditions imposed by NIT authorities and other factors having a bearing on the execution of the work.
13. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.
14. Canvassing whether directly or indirectly, in connection with tenderers is strictly prohibited and the tenders submitted by the contractors who resort to canvassing will be liable to rejection.
15. 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.
16. The contractor shall not be permitted to tender for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted as 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 Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
17. 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 previous 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 anytime to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the tender or engagement in the contractor's service.
18. The bid for the works shall remain open for acceptance for a period of **Thirty (30) days** from the date of opening of bid.
Forfeiture of Earnest Money: -
 1. (i) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department within 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - (ii) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date 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.
 2. If contractor fails to furnish the prescribed performance guarantee within the prescribed period, the earnest money is absolutely forfeited to the President automatically without any notice.
 3. In case of forfeiture of earnest money as prescribed in Para (1) and (2) above, the bidder shall not be allowed to participate in the re-tendering process of the work.
19. This notice inviting bid shall form a part of the contract document. The successful bidder/specialized agency, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign contract consisting of:

- a) The Notice Inviting bid, all the documents including Special Conditions, General Specifications/ Particular 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 is applicable.

Executive Engineer - Ludhiana
CPWD, Ludhiana
(For and on behalf of President of India)

GOVERNMENT OF INDIA

CENTRAL PUBLIC WORKS DEPARTMENT

STATE:	Punjab	CIRCLE:	SE-Jalandhar
BRANCH:	B&R	DIVISION:	EE-Ludhiana
SDG:	Project Region Chandigarh	SUB-DIV.:	AE-Bathinda-I

PERCENTAGE RATE TENDER & CONTRACT FOR WORKS

- i) Tender for the work of: **Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).** to be submitted online by **03:00 PM on 07.10.2026** through website <https://etender.cpwd.gov.in/CPWD> to **Executive Engineer, CPWD, Type-V/03, NSTI Campus, Ludhiana.**
- ii) To be opened through online in presence of tenderers who may be present at **03:30 PM on 07.10.2026** in the office of **Executive Engineer, CPWD, Type-V/03, NSTI Campus, Ludhiana.**

TENDER

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 Rate 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, Designs, Drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of Contract 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 **(30) Thirty days** from the date of opening of tender and not to make any modifications in its terms and conditions.

A sum of **Rs. 38,696/-** is hereby forwarded in Receipt Treasury Challan/ Deposit at Call Receipt of a Commercial Bank/ FDR of a Commercial Bank/ Demand Draft of a Commercial Bank/ Bank guarantee issued by a commercial Bank as earnest money. If I/we fail to furnish the prescribed Performance Guarantee within prescribed period, I/we agree that the said President of India or his successor in office shall without prejudice to any other right or remedy be at liberty to forfeit the said Earnest Money absolutely. Further, if I/we fail to commence work as specified, I/we agree that President of India or his successors in office shall, without prejudice to any other right or remedy available in law, be at liberty to forfeit the said **Performance Guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause**

12.2 & 12.3 of the tender form. Further, I/We agree that in case of forfeiture of earnest money or Performance Guarantee as aforesaid, I/We shall 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 through another contractor on back-to-back basis. Further that, if such a violation comes to the notice of Department, then I/we shall be debarred for tendering in CPWD in future forever. Also, if such a violation comes to the notice of Department before date of start of work, the Engineer-in-Charge shall 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 records connected with the work as Secret / Confidential documents and shall not communicate information / derived therefrom to any person other than a person to whom I/we am/are may authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated.....
Witness: -
Address: -
Occupation: -

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 Rs.....
(Rupees.....)

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

For & on behalf of the President of India.

i)
ii)
iii)
iv)

Signature.....

Dated:

Executive Engineer - Ludhiana

XX: To be filled by the Contractor

SCHEDULES (A TO F)

SCHEDULE 'A'

Schedule of quantities-

As per **Part –C of Page – 61-64 (Civil Work)**

SCHEDULE 'B'

Schedule of materials to be issued to the contractor.

S.No.	Description of item.	Quantity.	Rate in figures & words at which the material will be charged to the contractor	Place of issue
(1)	(2)	(3)	(4)	(5)
			NIL	

SCHEDULE 'C'

Tools and plants to be hired to the contractor

S.NO.	DESCRIPTION.	HIRE CHARGES PER DAY	PLACE OF ISSUE

SCHEDULE 'D'

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

- (i) Special Conditions - Part –B, Page No – 20 to 37
- (ii) Particular Specifications. - Part - B, Page No – 38 to 49

SCHEDULE 'E'

Reference to General Conditions of contract : General Conditions of contract for Central PWD Works. **GCC 2023 Maintenance Works** as amended/modified up to last date of submission of bid i/c correction slips (available on CPWD websites)

- 1.1 **Name of Work:** **Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).**
- 1.2 **Estimated Cost of work:** **Rs.19,34,793/-**
- 1.3 **Earnest Money:** **Rs. 38,696/-** (To be returned after receiving Performance Guarantee)
- 1.4 **Performance Guarantee**
 - (a) 5% of tendered value or Estimated cost put to tender (ECPT) whichever is higher
 - (b) Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance guarantee, in addition to the requirement in (a) above, shall be increased by an amount equal to the to the difference between the eighty percent (80%) amount of ECPT and tendered amount.
- 1.5 **Security Deposit** 2.5% of tendered value

SCHEDULE 'F':

General Rules & Directions:

Officer Inviting Tender: Executive Engineer-Ludhiana, CPWD, Ludhiana.

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

Refer Clause-12 below

Definitions:

2(v)	Engineer-In-Charge	Executive Engineer-Ludhiana, CPWD, Type-V/03, NSTI Campus, Ludhiana
2(viii)	Accepting Authority	Executive Engineer-Ludhiana, CPWD, Type-V/03, NSTI Campus, Ludhiana
2(x)	Percentage on cost of materials and labour to cover all overheads and profits	15%
2(xi)	Standard Schedule of Rates	Delhi Schedule of Rates 2023 with up-to-date correction slips
2(xii)	Department	Central Public Works Department
9(ii)	Standard CPWD Contract Form & General Conditions of Contract for CPWD	GCC-2023 Maintenance Works & CPWD-7 as amended/ modified up to last date of submission of bid.

Clause-1:

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

07 days

- (i) Maximum allowable extension with late fee @ 0.10% per day of performance guarantee amount beyond the period as provided in (i) above
- 1 to 3 days.

Clause-2: I. Authority for fixing compensation under clause-2.

Superintending Engineer - Jalandhar,
Kendriya Sadan, Surya Enclave, CPWD, Jalandhar

Clause-5: Number of days from the date of issue of letter of acceptable for reckoning date of start.

10 days

Clause – 5.1, 5.2, 5.3, 5.4, 5.5:

Whether clause-5.1, 5.2, 5.3, 5.4, 5.5 shall be applicable.

Applicable

Mile Stone

Table of Milestones (Refer Part–A, **Page No.-19**)

Time allowed for execution of work

90 **days**

Authority to decide

- | | | |
|------|---|---|
| i. | Extension of time | Superintending Engineer-Jalandhar
CPWD, Jalandhar |
| ii. | Re-scheduling of Mile stone | Superintending Engineer-Jalandhar,
CPWD, Jalandhar |
| iii. | Shifting of Date of Start in
case of delay in handing over of site | Executive Engineer-Ludhiana,
CPWD, Ludhiana (Pb) |

Clause-6:

Clause applicable- (6): Yes, Electronic Measurement Book (EMB)/ CMB

- | | | |
|----|--|-----------|
| i. | Mode of measurement: | CMB / EMB |
| | Note: - One option to be kept by NIT approving authority | |

Clause-7:

Gross work to be done together
with net payment / adjustment of
advances for material collected,
if any, since the last such payment
for being eligible to interim payment

Rs. 7.00 Lakhs

Clause-7A:- Whether Clause 7A shall be applicable Applicable

Clause-10A:

List of testing equipment to be
provided by the contractor at site lab. Refer Part –B, Page No.- **51 to 53**

Clause-10-B (ii):

Whether clause 10-B (ii) shall be applicable Not Applicable

Clause-10C: (Applicable in only those contracts where clause 10CC is not applicable) –

Component of labour expressed as percent of
total value of work. Not Applicable

Clause-10-CC: Not Applicable

Sr. No.	Relevant component of Material/ Labour for price escalation	Percentage of total value (civil) work
1	Cement Component	8%
2	Labour Component	25%
3	Civil Component of other construction Materials	47%
4	POL (Diesel) Component	2%
5	Reinforcement Steel bars/TMT bars/ structural Steels- (including stand and cables) Component	18%
	Total	100%

Clause-11: Specifications to be followed for execution of work C.P.W.D. Specifications 2019 Vol. I & II with upto date correction slips.

Clause-12:

Type of Work		Original Work
12.2 & 12.3	Deviation limit beyond which clause 12.2 & 12.3 shall apply for building work.	No Limit
12.4	(i) Deviation limit beyond which clause 12.2 & 12.3 shall apply for foundation works (except earth work)	
	(ii) Deviation limit for items in Earth work Sub-head of DSR or related items	

Clause-16: Competent Authority for deciding reduced rates. Superintending Engineer - Jalandhar, Kendriya Sadan, CPWD, Jalandhar

Clause-18: List of mandatory machinery tools & Plants to be deployed by the Contractor at site As per direction of Engineer-in-charge.

Clause 19 C: - Authority to decide penalty for each Default Executive Engineer-Ludhiana, CPWD or his successor thereof

Clause 19 D: - Authority to decide penalty for each default Executive Engineer-Ludhiana, CPWD or his successor thereof

Clause 19 G: - Authority to decide penalty for each default Executive Engineer-Ludhiana, CPWD or his successor thereof

Clause 19 K: - Authority to decide penalty for each Not applicable

Clause-25: Settlement of disputes by Conciliation and Arbitration

1.0 Conciliator: SDG (Chandigarh) or Successor thereof

2.0 Arbitrator Appointing Authority: SE-Jalandhar or Successor thereof

3.0 Place of Arbitration: As decided by Arbitrator.

Clause-32 Requirement of Technical Representative(s) and recovery Rate

Sr. No	Minimum Qualification of Technical Representative	Number	Minimum Experience	Designation (Principal Technical/ Technical Representative)	Rate at which recovery shall be made from contractor in the event of non-deployment.	
					Figures	Words

1.	Graduate Engineer Or Diploma Engineer	1	2 Years Or 5 Years	Project Manager cum Planning/ Quality/ Site/ Billing Engineer	15000	Fifteen Thousand Only per month
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Assistant Engineers retired from Government Services that are holding Diploma will be treated at par with Graduate Engineers.

Diploma holder with minimum 10-year relevant experience with a reputed construction co. can 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

Delhi Schedule of Rates 2023 with upto date correction slips and as per nomenclature of the items.

- 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.

- a. Steel Reinforcement and structure steel Sections for each diameter, section and category. 2% plus/ minus.
- b. Bitumen for all work. 2.5% Plus only & Nil on minus side.
- c. All other materials Nil

RECOVERY RATES FOR QUANTITIES BEYOND PERMISSIBLE VARIATION

Sl. No.	Description of Item	Rates in figures and words at which recovery shall be made from the Contractor	
		Excess beyond permissible variation	Less use beyond permissible variation
1.	Cement (PPC)	Nil	Rs. 7,000 per M.T.
2.	Cement (OPC)	Nil	Rs. 7,200 per M.T.
3.	Reinforcement Bars TMT-500		
(i)	Primary Manufacturer (Bar Set 1)	Nil	Rs. 75,900 per M.T.
(ii)	Secondary Manufacturer	Nil	---
4.	Structural Steel	Nil	Rs. 84,614 per M.T.

Note: -Recovery rates of Cement & Steel including applicable GST

TABLE OF MILE STONE (S)

Name of work: - Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb)..

Time Period allowed for Completion of Work: 90 Days.

Sl. No.	Description of Financial Milestone	Time Allotted (From date of start)	Amount to be withheld in case of non-achievement of milestone (% of Tendered Amount)
1.	Work upto 1/2th of the tendered amount	60 Days	In the event of not achieving the necessary progress as assessed from the running payments, 2.5% of the tendered value of work will be withheld for failure of each milestone.
2.	Full work completed & handed over in all respect.	90 days	

ame of work: - **Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).**

PART-B

(CIVIL WORK)

SPECIAL CONDITIONS

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 -2019 Volume –I & II with upto date correction slips and as per instructions of Engineer-in-Charge. Wherever CPWD Specifications are silent, the latest IS Codes/ Specifications shall be followed and the rates should be all inclusive.

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.

In the case of any difference or discrepancy between the description of item as given in the Schedule of Quantities, particular Specifications for individual item of work (including special condition) and IS codes etc., the following order of preference shall be observed :-

- (i) Description of Item as given in Schedule of Quantities
- (ii) Special Conditions and Particular Specifications.
- (iii) General Condition of Contract for CPWD work and CPWD Specifications-2019 Volume –I & II with upto date correction slips.
- (iv) Indian Standard Specifications of B.I.S.
- (v) Manufacturers' specifications & as per decision of the Engineer-in-charge.

The works to be governed by this contract shall cover delivery and transportation upto 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 equipments and/or fittings/fixtures supplied by the contractor.

Contractor shall provide all the shop drawings or layout drawings for all the co-ordinated 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 submittals 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 upto 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 Equipments like batching plant, 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 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.
- 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 levelling and measuring arrangements as may be necessary at site for checking. All such equipments 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-in-Charge 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 notwithstanding 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 equipments 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 cooperate with and provide the facilities to the associate-Contractors and other agencies working at site for smooth execution of the work. The Contractor shall

- (a) Allow 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 The contractor shall submit completion plan for water, sewerage and drainage line plan within thirty days of the completion of the work at his own cost four prints of “as built” drawings 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, upto 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 submit the completion plan as aforesaid, the department will get it done through other agency at his cost and actual expenses incurred plus Rs 15,000/- for the same shall be recovered from the contractor.

- 2.0 Unless otherwise specified in the Agreement, 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 **Testing charges to be borne by contractor**

All expenditure to be incurred for testing of samples e.g. sample, packing, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor. The tests will be got conducted at NIT Jalandhar, NIT Kurukshetra, PEC Chandigarh, GNE Ludhiana, NITTTR Chandigarh and private testing labs approved by ADG (Region Chandigarh).

4.0 QUALITY ASSURANCE/TESTING OF MATERIALS:

4.1 Batch Mix Concrete

- 4.1.1 The contractor shall establish a laboratory at site to test the coarse aggregate, fine aggregate, water, sand, cement etc to be used in Batch Mix Plant. Contractor is also required to depute technical personnel specifically for running of Batch Mix Plant and for quality control of mix produced.
- 4.1.2 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.
- 4.1.3 Samples of materials required for testing shall be provided free of charge by the contractor. The cost of tests shall be borne by the contractor.
- 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.
 - 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/SE division office.
 - c) Contractor shall be responsible for safe custody of all the test registers.
 - d) Submission of copy of all test registers, materials 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.
- All other expenditure required to be incurred for taking samples; conveyance, packing etc. shall be borne by the contractor himself.
- 4.1.4 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.
- 4.1.5 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 adopted.

4.2 Field Laboratory

The contractor has to establish field laboratory at site including all necessary equipments and skilled manpower for the Field Tests as at Page No. **51-53** at his own cost to have proper quality control.

For performing the above tests, the Field Testing Equipments and Instruments as at Page No **51-53** are to be arranged and maintained by the contractor.

- 4.2.1 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.
- 4.2.2 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.

4.3 Sample of Materials:

- 4.3.1 All materials and fittings brought by the contractor to the site for use shall conform to 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 Approved Makes as at **Page No 54 to 58** 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.
- 4.3.2 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.
- 4.3.3 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.

- 4.3.4 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.

5.0 CEMENT & STEEL REINFORCEMENT (IF NOT STIPULATED TO BE SUPPLIED BY THE DEPARTMENT).

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

5.2 CEMENT:

- 5.2.1 The contractor shall procure 43 grade Pozzolona Portland Cement conforming to IS: 8112/ Portland Pozzolona Cement 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 and J.K. Cement or from any other reputed cement manufacturer having a production capacity not less than one million tons per annum as approved by ADG for that sub region. 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 Pozzolona 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 09.04.09. However, if the contractor uses higher grade of cement or uses OPC only nothing extra shall be paid.
- 5.2.2 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.

5.2.3 Cement shall be brought at site in bulk supply of approximately 30 tonnes or as decided by the Engineer-in-Charge.

5.2.4 OPC & PPC bags shall be stored in separate godowns. Separate godowns 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 godown is indicated in the sketches for guidance. The actual size of godown shall be as per site requirements and nothing extra shall be paid for the same. Each godown 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 godown 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 which 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 godowns each having capacity of 30 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.

5.2.5 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.

5.2.6 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 Engineer-in-charge regarding theoretical quantity of the cement, which should have been actually used, shall be final and binding on the contractor.

5.2.7 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.

5.2.8 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.

5.2.9 Cement, which is not used within 04 months 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.

5.3 **Steel Reinforcement:**

5.3.1 The contractor shall procure TMT bars of Fe500D grade from primary steel producers such as SAIL, Tata Steel Ltd., Rashtriya Ispat Nigam Ltd., Jindal Steel and Power Ltd. and JSW Steel Ltd. or any

other producer as approved by CPWD who are using iron ore as the basic raw material/ input and having crude steel capacity of 2.0 million tonnes per annum and above.

- a) The grade of the steel Fe 500 D to be procured is to be specified as per BIS 1786-2008.
- b) The TMT bars procured from primary producers shall conform to manufacture's specifications.
- c) TMT bars procured from primary producers; the specifications shall meet the provisions of IS 1786: 2008 pertaining to Fe 500 D grade of steel:

Mechanical Properties

Property	Fe 500 D
0.2 percent proof stress/ Yield stress, Min. , N/mm ²	500.0
Tensile Strength, Min	10 percent more than the actual 0.2 percent proof stress/ yield stress but not less than 565.0 N/ mm ² .
Elongation Percentage, Min. on gauge length $5.65\sqrt{A}$, where A is the cross-sectional area of the test piece	16.00

Chemical Properties

Constituent	Fe 500 D Max. Percent
Carbon	0.25
Sulphur	0.040
Phosphours	0.040
Sulphur + Phosphorus	0.075

- 5.3.2 The contractor shall have to obtain and furnish test certificates & challan to Engineer –in- Charge in respect of all the supplies brought by him to the site of work.
- 5.3.3 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 specifications, as defined under para 4.3.1 (a) above, the same shall stand rejected, and it shall be removed from the site of work by the contractor at his cost within a week time of written orders from the Engineer-in Charge to do so.
- 5.3.4 The steel reinforcement bars shall be brought in bulk supply of 25 tonnes or more or as decided by the Engineer-in-Charge along with manufacturer test certificate for each lot.
- 5.3.5 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 these accounts. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.
- 5.3.6 Unless OTHERWISE specified elsewhere in the contract document, the testing (nominal mass, tensile strength, bend test, rebend test etc.) shall be done as per frequency of samples not less than as given below:

SIZE OF BAR	FOR CONSIGNMENT BELOW 100 TONNES	FOR CONSIGNMENT OVER 100 TONNES
Under 10 mm dia	One sample for each 25 tonnes or part thereof.	One sample for each 40 tonnes or part thereof
10 mm to 16 mm dia	One sample for each 35 tonnes or part thereof.	One sample for each 45 tonnes or part thereof
Over 16 mm dia	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

- 5.3.7 The Actual issue and consumption of steel on work shall be regulated and proper account 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 variation, recovery at the rate so prescribed shall be made. In case of excess consumption, no adjustment needs to be made.

- 5.3.8 Steel brought to site and steel remaining unused shall not be removed from site without the written permission of the Engineer-in-Charge
- 5.3.9 The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated in the work. All consignment received at the work site shall be inspected by the Site staff along with the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer-in-Charge in respect of all the lots of steel brought by him from approved supplier to the site of work. The original vouchers and test certificates shall be defaced by the Site staff and kept on record in the site office.
- 5.3.10 Reinforcement including authorized spacer bars and lappings shall be measured in length of different diameters as actually (not more than as specified in the drawings) used in the work nearest to a centimeter. Wastage and unauthorized overlaps shall not be measured.
- 5.3.11 The standard sectional weights referred to as in Table 5.4 in para 5.3.4 in CPWD Specifications will be considered for conversion of length of various sizes of M.S. Bars, Steel Bars and T.M.T. bars into Standard Weight.
- 5.3.12 Records of actual Sectional weights shall also be kept dia-wise and lot-wise. The average sectional weight for each diameter shall be arrived at from samples from each lot of steel received at site. The decision of the Engineer-in-Charge shall be final for the procedure to be followed for determining the average sectional weight of each lot. Quantity of each diameter of steel received at site of work each day will constitute one single lot for the purpose. The weight of steel by conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be termed as Derived Actual Weight. However, for the stipulated issue of steel reinforcement up to and including 10mm diameter bars, the actual weight of steel issued shall be modified to take into account the variation between the actual and the standard coefficients and the contractors' accounts will be debited by the cost of modified quantity.
- 5.3.13 (a) If the Derived Weight as in sub-para (4.3.13) above is less than the Standard Weight as in Sub-para (4.3.12) above then the Derived Actual Weight shall be taken for payment provided, it is within the following tolerances specified in IS1786-2008, otherwise whole lot will be rejected.

Tolerances on Nominal Mass

Nominal Size in mm	Tolerance on Nominal mass Percent		
	Batch	Individual sample*	Individual sample for coil**
Upto and including 10	±7	-8	±8
Over 10 upto and Including 16	±5	-6	±6
Over 16	±3	-4	±4

* For individual sample plus tolerance is not specified.

**For coils batch tolerance is not specified.

b) If the Derived Actual Weight is found more than the Standard Weight, the Standard Weight as per in subpara (4.3.13) above shall be taken for payment. In such case nothing extra shall be paid for the difference between the Derived Actual Weight and the Standard Weight.

6.0 **SECRECY**

- 6.1 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.
- 6.2 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.
- 6.3 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.

7.0 **LABOUR AND SECURITY**

- 7.1 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.
- 7.2 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.
- 7.3 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.
- 7.4 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").
- 7.5 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.
- 7.6 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 & upto 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.
- 7.7 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".
- 7.8 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.

8.0 **TRANSPORTATION AND OFFICE INFRASTRUCTURE:**

- 8.1 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 CPWD 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.
- 8.2 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, MS-Windows-7, A-3 Coloured Inkjet & A-4 Laserjet Printers, Scanners, UPS etc. with required number of data entry operators(two or more) in the site office of Engineer-in-Charge.
- 8.3 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.

9.0 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.

10.0 PROGRAMME CHART

- 10.1 The Contractor shall prepare an integrated programme chart in MS Project/ Primavera software for the execution of work, showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the program within the stipulated period or earlier and submit the same for approval of the Engineer-in-Charge within 10 days of award of the contract.
- 10.2 The work has to be completed in stages as indicated in the Milestones under Schedule 'F' and the programme should be prepared in such a manner to achieve these Milestones as indicated therein or earlier.
- 10.3 The programme chart should include the following: -
 - a) Descriptive note explaining sequence of the various activities.
 - b) Network (PERT/ CPM / BAR CHART)
 - c) Programme for procurement of materials by the contractor.
 - d). Programme of procurement of machinery/ equipments having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor. In addition to above to achieve the progress of work as per programme, the contractor must bring at site adequate shuttering material required for cement concrete and R.C.C. works etc. for three floors within one month from the date of start of work till the completion of RCC work as per requirement of work. The contractor shall submit shuttering schedule adequate to complete structure work within laid down physical milestone.
- 10.4 If at any time, it appears to the Engineer-in-Charge that the actual progress of work does not conform to the approved program referred above or after rescheduling of milestone, the contractor shall produce a revised programme within 7 (seven) days, showing the modifications to the approved programme to ensure timely completion of the work. The modified schedule of programme shall be approved by the

Engineer-in- Charge. A recovery of Rs 1000/- shall be made on per day basis in case of delay in submission of the modified programme.

- 10.5 The submission for approval by the Engineer-in-Charge of such programme 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.
- 10.6 The Contractor shall submit the progress report using MS Project/ Primavera software with base line programme referred above for the work done during previous month to the Engineer-in-charge on or before fifth day of each month.

11.0 PROGRESS AND MONITORING OF WORK:

- 11.1 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.
- 11.2 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.
- 11.3 **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 co-ordination of various disciplines viz. building works, sanitary & water supply & electrical installations etc.**
- 11.4 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.

11.5 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.

11.6 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.

12.0 **ENGAGING SPECIALISED AGENCIES FOR WORKS**

12.1 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) Factory made Wooden Shutters of all types except Flush Doors.
- ii) Water proofing treatment work of all types.
- iii) Aluminium Work
- iv) Aluminium semi unitized/Curtain wall four way structural glazing.
- v) All type false ceilings.
- vi) Plumbing works.
- vii) Tube Well Installation.
- viii) Acoustic work.

12.2 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 except for Internal Electrical Installation, proposed to be engaged by him along with necessary performance certificates, within 04 months 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.

12.3 For Internal Electrical Installation work as contained in the Electrical component work under Part- D Schedule of quantities (Elect.), the Electrical Agency to be engaged as an associate electrical contractor for the Internal E.I/External E.I work should be enlisted contractor of CPWD in appropriate class as per the value of the work. The firm will be required to submit the credentials of the associate electrical contractor including their registration documents, electrical contractor license, sales tax documents apart from submission of the MOU. However, contractor shall submit MOU to Executive Engineer (Elect.) in-charge, signed with eligible Electrical Contractor/ Agency along with consent letter of Electrical Agency at least 7 days before the last date of submission of Performance Guarantee. It will be obligatory on the part of main contractor to sign the tender documents for all the components.

12.4 If the main contractor fails to associate agency/ agencies for execution of minor components of work within prescribed time or furnishes incomplete details or furnishes details of ineligible agencies even after the tenderer is given due opportunity, the entire scope of such component of works shall be

withdrawn from the tender and the same shall be got executed by the Engineer-in-Charge at the risk and cost of the main contractor.

- 12.5 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.

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 manmade.

Sl. No.	Description	Defect Liability
(i)	Concrete	(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 leaking mirror if found wavy. (c) Rectification of leakage of over head tanks. (d) Leakage/ seepage of sunken floor, blockage of taps/ pipes, non-functioning of cistern.
(x)	Finishes	(a) Making good of defective/ dissimilar patches of painting to match with remaining surfaces, peeling of paint.
Sl. No.	Description	Defect Liability
(xi)	Internal Water Supply	(a) Repairs/ Replacement of defective taps/ fittings. (b) Repair to leakage of GI water pipe lines including joints. (c) Removal of blockage of GI pipe lines.
(xii)	Roads	(a) Repair of sunken portion of road & potholes, if any

(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 equipment's 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.**
- 15.0 Special condition for Hardware and sanitary wares:
- 15.1 Engineer-in-Charge will take a decision regarding model numbers of equivalent Door/ window hardware's/ sanitary wares 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."

PARTICULAR SPECIFICATIONS

1.0 EARTH WORK

- 1.1 The Earth is to be excavated mechanically/ manually and refilled in trenches as per requirement of work and as per direction of Engineer- in Charge. Surplus earth received from excavation is to be filled within the campus and surplus earth after the approval of Engineer- in -Charge shall be carried mechanically out of the campus. All the work shall be done in accordance with CPWD Specifications

2 RCC

2.1 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.

2.2 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. 90% of the total tests shall be done at the laboratory established at site by the contractor and remaining 10% in any other laboratory as directed by the Engineer-in-Charge.

2.3 Standard of Acceptance:

- i) In case the test results of all the samples are above the characteristic compressive strength, the concrete shall be accepted.
- ii) In case the test result of one or more samples fails to meet the requirement, it shall be accepted if it meets the requirement as laid down in CPWD Specification.
- iii) Concrete of each grade shall be assessed separately.
- iv) Concrete is liable to be rejected, if it is porous or honeycombed or its placing has been interrupted without providing a proper construction joint or the reinforcement has been displaced beyond the tolerances specified, or construction tolerances have not been met.

- 2.4 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.
- (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.
- (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.

3.0 **R.C.C WORK (ORDINARY)**

- 3.1. The work shall be done in accordance with CPWD Specifications.
- 3.2. RCC work shall comprise of the following which shall be paid for separately as per description of item:
- i) Form work (centring and shuttering).
 - ii) Reinforcement
 - iii) Cement concrete i.e. Cast-in-situ/ Precast.
- 3.3. Water Cement ratio for Ordinary RCC work shall not be more than 0.5. This may be kept as specified in CPWD specifications depending upon the mix. Contractor shall use concrete mixture of proper design having arrangement for measuring water for mixing of concrete.
- 3.4. The materials i.e. Cement, water, coarse aggregates, fine aggregate, structural steel (T.M.T. bars) and water proofing materials etc. being used in cement concrete for RCC work/ Precast RCC work, should confirm to the CPWD specifications.
- 3.5. The consistency, placing, compaction, curing, sampling and testing of cement concrete used in RCC/ Precast RCC work should confirm to CPWD specifications. The testing results of cement concrete should confirm to laid down standard of acceptance.
- 3.6. The RCC work executed upto plinth level shall be paid in foundation. Above this level it shall be paid in respective items of RCC. The columns measurement shall be taken through as laid down in specifications.
- 3.7. The rate shall include the cost of materials and labour required for all the operations described in the CPWD specifications.

4.0 **FORM WORK**

- 4.1. The work shall be done in general as per CPWD Specifications.
- 4.2. The contractor has to arrange at site centring and shuttering for adequate plan area. 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.
- 4.3. Nothing extra shall be paid for the centring and shuttering, circular in shape whenever the formwork is having a mean radius exceeding 6m in plan.
- 4.4. Nothing extra shall be paid for grid beams and the corresponding slabs having clear span more than 1.20 metres.
- 4.5. 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 centring, shuttering and casting for which nothing extra shall be paid to the Contractor.
- 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.
- 4.6. 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.

- 4.7 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.
- 5.0 **REINFORCEMENT:**
- 5.1 The reinforcement shall be done as per CPWD Specifications.
- 5.2 The rate of item of reinforcement of RCC work includes all operations including straightening, cutting, bending, welding, binding with annealed steel or welding and placing in position at all the floors with all leads and lift complete as per CPWD Specifications.
- 5.3 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 block shall be cast well in advance with approved proprietary pre-packed free flooring mortar (Conbextra as manufactured by M/s Fosroc Chemical India Ltd. or approved equivalent) of high early strength and same colour as surrounding concrete, Precast cement mortar /concrete blocks /blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-Charge and rate of RCC items is inclusive of cost of such cover block. Cover blocks shall be cast well in advance and rate of RCC items is inclusive of cost of such cover blocks.
- 6.0 **PRE-CAST RCC WORK**
- 6.1 The work shall be done in accordance with CPWD Specifications.
- 6.2 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.
- 6.3 Pre-cast units shall be clearly marked to indicate the top of member and its location.
- 6.4 Pre-cast units shall be stored, transported and placed in position in such a manner that these are not damaged.
- 6.5 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
- 6.6 Rate for item includes cost of all materials, labour, and all operations involved. Cost of M.S. frames, their welding, lifting hooks is also included.
- 7.0 **BRICK WORK**
- 7.1 The brickwork shall be carried out with good quality well burnt FPS bricks of class designation 75 as per CPWD Specifications.
- 7.2 The rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work.
- 7.3 Brick work provided around shaft or lift walls or around slab cutouts shall be measured in the brick for corresponding floor level. Nothing extra shall be paid on this account.
- 7.4 M.S. Strip 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.
- 8.0 **STONE/ MARBLE WORK**
- 8.1 General:The execution of stones work shall be in general as per CPWD Specifications.
- 9.0 **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.

10.0 GRANITE/ MARBLE WORKS

- 10.1 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.
- 10.1.2 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.
- 10.1.3 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.

11.0 WOOD WORK

- 11.1 The wood work in general shall be carried out as per CPWD Specifications.
- 11.2 The sample of timber to be used shall be deposited by the contractor with Engineer-in-charge before commencement of work.
- 11.3 The shape and size of beading shall be as per drawings. The joints of beading shall be mitred.
- 11.4 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.
- 11.5 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 coaltar.
- 11.6 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.
- 11.7 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	5.5 mm

- 11.8 Factory made panelled / wire gauge door shutters.
- 11.9 The work shall be executed through specialized agencies to be approved by the Engineer in Charge.
- 11.10 The shutters should be fabricated in factories & fabrication should conform to CPWD Specifications Para 9.6.6 & IS 1003 Part-I.
- 11.11 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 be accepted only if these meet the specified test.

- 11.12 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.
- 11.13 The shutters should be brought at site without primer / painting.
- 11.14 Inspection of shutters shall be carried out for dimensions & tolerances, size & type general construction & workmanship, finish & glazing at the following frequency: -

Lot Size	Sample Size	Permissible number of defectiveness
Upto 25	2	0
26 to 50	5	0
51 to 100	8	0
101 to 150	13	1
151 to 300	20	2
301 to 500	32	3
501 to 1000	50	5
1001 & above	80	7

Criteria for conformity

Any sample shutter failing in any one or more of the requirements inspected for as above shall be considered as defective. A lot shall be considered as having satisfied the requirements of the standard if the number of defective shutters in the sample does not exceed the corresponding permissible number of defectiveness given above.

- 11.15 **Testing** – The shutters shall be tested for species, seasoning & treatment, defects in the timber, panel material, construction & workmanship in the approved Govt. Laboratory at the following frequency: -

Lot Size	Sample Size
Upto 50	1
51 to 100	2
101 to 150	3
301 to 500	4
500 to 1000	6
1001 & above in multiple of 1000	10

If shutters are found defective in any one of the criterion, double the shutter shall be tested & if found permissible, can be accepted. If shutter is found defective in more than one criterion, the whole lot shall be rejected.

12.0 STEEL WORK

- 12.1 The work shall be carried out as per CPWD Specifications.
- 12.2 **Pressed Steel Frame/ T Iron Frames:** The work shall be done as per CPWD Specifications. The frames shall be fabricated in approved workshops. The angle and flat iron frames for cupboard shall also be fabricated from the above approved workshops.
- 12.3 **Steel windows/ ventilators:** The work shall be done strictly as per CPWD Specifications. Flash butt-welded steel windows/ ventilators only shall be provided and shall be procured from the approved manufacturers. The corners should be welded to form a solid fused welded joint conforming to the requirement given below.
- Weld shall be made all along the place of meeting the member.
 - eld should be properly grounded.

- c) Complete cross section of the corner shall form a solid joint with no cavities, free from cracks, under cutting, overlaps, gross porosity and entrapped slag.

All sub dividing and glazing bars shall be tenoned& riveted into the frames i.e. all centre mullion section F4B and glazing section T2, T6 shall not be directly welded to the frames. For this a slot has to be cut in the frames, the F4B/ T2/ T6 section inserted into it & head be hydraulically tenoned& riveted by TennonRivetting Machine.

The thickness of projecting type hinges shall not be less than 3.15 mm. For fixing of hinges to outer frame, slot shall be cut, hinges inserted & welded at the back. For non projected type hinges if allowed, the wall thickness shall not be less than 3 mm & total width not less than 40 mm. For fixing, the slot shall be cut in the fixed frames, hinge flap inserted & welded from the back.

The fixing lug shall be as per IS 1038 with adjustable slot & fixed to window frames by screws & nuts.

The fixing of unit shall be done as per IS 1081.

- 12.4 **M.S. Sheet Door** – M.S Sheet shall be in one piece i.e. no joint in M.S. Sheet shall be permitted.

- 12.5 **Steel work welded in built up sections/ framed work:** The contractor will submit the shop drawing to the Engineer-in-Charge for approval well in advance. The gate shall be provided with wheel like arrangement for its easy operation and cement concrete pavement shall be provided to meet the operational requirements of the gate. After its only the work shall be executed.

- 12.6 Flash butt welded steel work in frames etc. only shall be provided and shall be procured from the approved manufacturers. The corners should be welded to form a solid fused welded joint conforming to the requirement given below.

- a) Weld shall be made all along the place of meeting the member.
- b) Weld should be properly grounded.
- c) Complete cross section of the corner shall form a solid joint with no cavities, free from cracks, under cutting, overlaps, gross porosity and entrapped slag.

- 12.7 The work shall be done strictly as per CPWD Specifications.

13.0 **FLOORING**

- 13.1 All work in general shall be carried out as per CPWD Specifications.

- 13.2 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.

- 13.3 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.

- 13.4 Samples of flooring stones (Kota/ Marble/ Granite 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.

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

- 13.6 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 1000mm long except to adjust the closing pieces. Nothing extra shall be paid on these accounts

13.7 **Precast Terrazo Tile Flooring**

The tiles shall be procured from the Approved Manufacturer.

The tiles of 250 x 250 x 22 mm size shall be used & sample of tiles shall be got approved from the Engineer-in-Charge.

13.8 Vitrified and Ceramic Tiles

- 13.8.1 The contractor shall procure and submit the samples of approved make, shade and thickness of different types of vitrified and ceramic tiles, for the approval of the Engineer-in-charge prior to the execution of the item.
- 13.8.2 The mock up (one each) shall be prepared for flooring and dado, for vitrified tiles etc.
- 13.8.3 The entire supply for each type of tiles shall be procured from one manufacturer / authorized dealer, preferably, in one lot to keep variations to the minimum.
- 13.8.4 Size of ceramic tiles shall not be less than 300 mm x 450 mm for wall tiles and 300 mm x 300 mm for floor tiles unless otherwise specified by the Engineer-in-charge. Size of Glazed vitrified tiles shall not be less than 600 mm x 600 mm. Nothing extra shall be paid on this account
- 13.8.5 The tiling work may be required to be carried out in patterns, design and / or in combination with tiles of different colour and shade and in combination of different stone slabs / tiles for which nothing extra shall be payable. The tiles shall be provided as per the architectural drawings and wastages and incidental costs, if any, shall be deemed to be covered in the cost of the relevant items. Nothing extra shall be payable on this account.
- 13.8.6 For the flooring portions curved in plan, the tiles (at the edge) shall be cut to the required profile and shape as per the architectural drawings. Nothing extra shall be payable on this account and any consequent wastages and incidental charges on such accounts shall be deemed to be included in the cost of such items.
- 13.8.7 The Contractor shall obtain and submit to the Department the manufacturer's test certificate for compliance of various parameters for the material as per the manufacturer's specifications, with each lot of material received at site.
- 13.8.8 The flooring and dado / cladding should be set out such that the perimeter/ corner tiles are in excess of half a tile so that the edge panels on both the sides are of equal sizes, as far as possible. The tiles shall be cut to required size and shape in a workman like manner but with all precautions, as per the manufacturer's specifications.
- 13.8.9 For dado / cladding / skirting work, the tiles shall be chamfered at the meeting edges on the corners in a manner that butt edges are not visible. It shall be ensured that the edges shall be ground / filed to chamfer the edges so that the glazing layer at the edges of the tiles is not chipped off otherwise the work shall be rejected and redone by the Contractor at his own cost.

14.0 WATER PROOFING FOR SUNKEN FLOORS

- 14.1 The work shall be got executed from the specialized agency as approved by the Engineer in Charge.
- 14.2 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.
- 14.3 The finished surface after water proofing treatment shall have adequate smooth slope as per the direction of the Engineer-in-charge.
- 14.4 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.

15.0 FINISHING

- 15.1 The work shall be done in accordance with CPWD Specifications (Volume II) 2019 with up-to-date correction slips and/or manufacturers specifications wherever applicable.
- 15.2 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 104 months 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.

- 15.3 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

16.0 SANITARY INSTALLATIONS/WATER SUPPLY/ DRAINAGE

- 16.1 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.
- 16.2 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.
- 16.3 The work in general shall be carried out as per CPWD Specifications.
- 16.4 The tendered rates shall include the cost of cutting holes in walls, floors, RCC slabs etc. wherever required and making good the same for which nothing extra shall be paid.
- 16.5 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.
- 16.6 The pig lead to be used in jointing should be as per C.P.W.D. Specifications.
- 16.7 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

17.0 ALUMINIUM DOORS, WINDOWS, VENTILATORS ETC. GLAZING SPECIFICATIONS

- 17.1 **Extent and Intent:** The work shall be carried out through an approved Special Agency, who shall furnish all material, labour, accessories, equipment, tool and plants and incidentals required for providing and installing anodized 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.
- 17.2 **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.
- 17.3 **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.
- 17.4 **Samples:** Samples of doors, windows louvers etc. shall be fabricated, assembled 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.
- 17.5 **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 Engineer-in-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.

- 17.6 **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 wind load of 150 Kg. PerSqm. 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.
- 17.7 **Anodizing:** All aluminium sections shall be anodized 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. Anodizing confirming 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; cost of testing etc. shall be borne by the contractor.
- 17.8 **Protection of finish:** All aluminium members shall be wrapped with approved self-adhesive non-staining PVC tapes.
- 17.9 **Handling and Stacking-**
- 17.10 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.
- 17.11 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.
- 17.12 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 polysulphide sealant densely packed and finished neat.
- 17.13 The contractor shall be responsible for doors, windows, etc. being set straight, plumb, level and for their satisfactory operation after fixing is complete.
- 17.14 **INSTALLATION**
- 17.14.1 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.
- 17.14.2 The door/ 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 bolts. 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 through 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.

17.14.3 **PVC/ Neoprene gaskets:** The contractor shall provide and install PVC/ 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.

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

17.14.5 **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.

17.14.6 **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 architect before its actual use.

17.15 **Details of Test:**

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

17.15.2 The minimum number of tests for anodizing 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.

17.15.3 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.

17.16 **Measurement of Glazing**

17.16.1 All the aluminium sections i/c snap beadings fixed in place shall be measured in running meter along the outer periphery of composite section correct to a millimeter. The weight calculated on the basis of actual average (average of five samples) weight of composite section in kilogram correct to the second place of decimal shall be taken for payment (weight shall be taken after anodizing). The weight of cleat shall be added for payment. Neither any deduction nor anything extra shall be paid for skew cuts.

17.16.2 The height and width of double glazed/single glazed unit (the area of glass unit outside the snap beading shall only be measured) as fixed in place shall be measured correct to one centimeter and area calculated in sqm correct to second place of decimal shall be taken for payment.

17.17 **RATES**

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

17.17.2 The rates include the cost of hinges/ pivots and rest of the fittings shall be paid separately.

18.0 SPECIFICATIONS FOR SOLID POLY VINYL CHLORIDE (PVC) DOOR SHUTTERS

18.1 Scope

- 18.1.1 This specification lays down requirement regarding types, sizes, material, construction, workmanship, finish, performance evaluation, sampling and testing of solid Poly Vinyl Chloride (PVC) Panelled door shutters for use in residential buildings, non-residential buildings such as offices, schools, hospitals, etc.
- 18.1.2 This specification does not cover large size door shutters for industrial and special buildings such as workshops, garages, godowns etc.
- 18.1.3 PVC door shutters shall be used in internal locations only.

18.2 References

- 18.2.1 The Indian Standards and other Standards listed in Annexure-I are necessary adjuncts to this standard. The products bearing BIS certification i.e. ISI Mark with code number shall have precedence over those not bearing ISI Mark.

18.3 Terminology

- 18.3.1 For the purpose of this specification, the definitions given below in addition to those given in IS 707-1976 shall apply:
- (i) Blistering: Air or solvent entrapped during moulding.
 - (ii) Colour blots: Colour blots occurring on account of uneven distribution of pigment.
 - (iii) Crazing: Fine hair cracks on the surface.
 - (iv) Defective Impregnation: Imperfect impregnation of PVC resin with other additives.
 - (v) Colour Fading: Fading of colour on exposure to sunlight.
 - (vi) Impurities: Presence of matter other than those specified.
 - (vii) Pin holes: Pores of size less than 1mm appearing on the surface.
 - (viii) Small Pores: Pores of size more than 1mm but less than 2mm appearing on the surface.
 - (ix) Wrinkling: A slight ridge or furrow on surface.
 - (x) Aggregate Defects: Presence of defects such as pin holes, impurities and traces of mending 5 or more in aggregate for defects at localized place.

18.4 Handling

- 18.4.1 Handling and direction of closing of shutters shall be designated in accordance with IS: 4043:1969.

18.5 Material

- 18.5.1 Poly Vinyl Chloride Resin (suspension grade) is the basic raw material of PVC compound. PVC resin in mixed with chemicals like calcium searate, hydrocarbon Wax, Titanium dioxide, calcium carbonate Acrylic base etc. Further additives like UV stabilizers, impact modifiers, pigments, epoxy plasticizer, lubricants, acrylic processing aid etc. are also added. The purpose of adding the chemicals and additives is to impart strength, surface finish, colour and resistance to fading by light rays. These chemicals are mixed in the desired proportion and shall be used in the formulation of PVC material and for free and smooth extrusion of PVC cellular sheets.

18.6 PROCESS

- 18.6.1 **Mixing:** The PVC material so formulated with the addition of chemicals, fillers & additives shall be mixed dry powder form in a high speed hot mixer at a temperature of 1100 C to 1250 C. The heated dry blend is then to be cooled at room temperature. However, the temperature has to be determined keeping in view the climatic conditions and the process requirements.
- 18.6.2 **Extrusion:** The cooled dry blend is off loaded into the hopper of the extruder, and then is fed to the screw & barrel of the extruder, where it is melted and kneaded at varying temperatures upto 2050 C

by rotating screws. The thick paste of PVC material is then passed through a hot die to make the sheet of required thickness.

18.6.3 **Polishing:** The basic shape of the sheet so acquired is then polished with the help of a three-roll calendar. At the same time the sheet is cooled by circulating water in the rolls of the calendar and thereafter on a roller table by atmospheric air.

18.6.4 **Cutting:** The final finished product coming out of the haul-off is cut as per the required size.

19.0 ROAD WORK

19.1 The work shall be done in accordance with CPWD Specifications and MORTH specifications where ever required.

19.2 The sources of coarse aggregate, fine aggregate, water blinding materials to be used in W.B.M road and premix 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 Engineerin Charge.

- | | | |
|-----|-------------------|----------------------------|
| (a) | Coarse Aggregate: | As per CPWD Specifications |
| (b) | Fine Aggregate: | As per CPWD Specifications |

(On non-judicial stamp paper of minimum Rs. 100)

(Guarantee offered by Bank to CPWD in connection with the execution of contracts)

Form of Bank Guarantee for Earnest Money Deposit / Performance Guarantee/ Security Deposit/Mobilization Advance

1. Whereas the Executive Engineer (name of division) CPWD on behalf of the President of India (hereinafter called "The Government") has invited bids under (NIT number) dated for (name of work) The Government has further agreed to accept irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date)* as Earnest Money Deposit from (name and address of contractor) (hereinafter called "the contractor") for compliance of his obligations in accordance with the terms and conditions of the said NIT.

OR**

- Whereas the Executive Engineer (name of division), CPWD on behalf of the President of India (hereinafter called "The Government") has entered into an agreement bearing number with (name and address of the contractor) (hereinafter called "the Contractor") for execution of work (name of work) The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date) as Performance Guarantee/Security Deposit/Mobilization Advance from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.
2. We, (indicate the name of the bank) (herein after referred to as "the Bank"), hereby undertake to pay to the Government an amount not exceeding Rs. (Rupees only) on demand by the Government within 10 days of the demand.
3. We, (indicate the name of the Bank), do hereby undertake to pay the amount due and payable under this guarantee without any demur, 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. 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)
4. We, (indicate the name of the Bank), further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor in any suit or proceeding pending before any Court or Tribunal, our liability under this Bank Guarantee being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.
5. We, (indicate the name of the Bank), further agree that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation here under to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor from 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 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 or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor 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. We, (indicate the name of the Bank), further agree that the Government at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor at the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee the Government may have in relation to the Contractor's liabilities.
7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.
8. We, (indicate the name of the Bank), undertake not to revoke this guarantee except with the consent of the Government in writing.
9. This Bank Guarantee shall be valid up to unless extended on demand by the 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 the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Date

Witnesses:

- | | | | |
|----|------------------------------------|------------|---|
| 1. | Signature.....
Name and address | Authorized | signatory
Name
Designation
Staff Code No.
Bank Seal |
| 2. | Signature.....
Name and address | | |

~~*Date to be worked out on the basis of validity period of 04 months where only financial bids are invited and 180 days for two/three bid system from the date of submission of tender.~~

~~**In paragraph 1, strike out the portion not applicable. Bank Guarantee will be made either for earnest money or for performance guarantee/security deposit/mobilization advance, as the case may be.~~

LIST OF FIELD TESTS

- 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° C

FIELD TESTING EQUIPMENT AND INSTRUMENTS

C. 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.
 - d) Weighing scale platform type 100 kg capacity.
- 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, manually 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 150 X 150 X 150 mm concrete cube moulds as per site requirement.
- viii) Graduated cylinder 1000 ml. Capacity.
- ix) Pumps & pressure gauges for hydraulic testing of pipes.
- x) PH Meter.
- xi) 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) Vernier Calipers
- iii) 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) Magnifying glass
- x) Screw driver 30 cms long
- xi) Plastic bags for taking samples
- xii) Levelling machine

C. **Minimum required T&P**

Sr. No.	Detail of T&P	Qty.	Remarks
1	Concrete mixer with hopper (Full bag)	01 No.	
2	Steel Shuttering	100 Sqm.	
3	Needle Vibrator	01 No.	
4	Welding Machine	01 No.	

PROFORMA FOR TESTS CARRIED OUT

NAME OF THE WORK:

DIVISION:

AGREEMENT NO.& DATE:

SUB-DIVISION:

Sl. No.	Item	Quantities as per agreement	Frequency as per specification	No. of tests required	R.A. bill No.	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:
AGREEMENT NO.

DIVISION
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	Progressive Total	Date of Issue	Qty Issued	Items of work for which Issued	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	J.E.'s Initial	Periodical Check	
					By AE	By EE
12	13	14	15	16	17	18

LIST OF PREFERRED MAKES FOR CIVIL WORKS

Name of work: **Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).**

Sr.No.	Name of Product/ Material	Preferred Brand Names
1	ORDINARY PORTLAND CEMENT (GREY) (43 GRADE)	ACC, ULTRATECH, VIKRAM, SHREE CEMENT, AMBUJA, JAYPEE CEMENT, CENTURY CEMENT & J.K. CEMENT.
2	PORTLAND POZZOLONA CEMENT (GREY)	ACC, ULTRATECH, VIKRAM, SHREE CEMENT, AMBUJA, JAYPEE CEMENT, CENTURY CEMENT & J.K. CEMENT.
3	WHITE CEMENT	J.K.WHITE, JAIPUR SUPREME PACKAGING PVT. LTD., ULTRATECH CEMENT LIMITED.
4	REINFORCEMENT STEEL	SAIL, TATA STEEL LTD., RINL, JINDAL STEEL & POWER LTD. AND JSW STEEL LTD.
5	ADMIXTURES	HIND PLAST SUPER, DR. FIXIT, SIKA
6	WATER PROOFING COMPOUND	FOSROC, CICO, KRYTON, BUILDMATE, PIDLITE, PRIYA ENTERPRISES, FAIRMATE, SIKA
7	WATER PROOFING COATING	PRIYA ENTERPRISES, CHOKSEY, SIKA
8	READY MIX CONCRETE	M/S L&T CONCRETE (LAFARGE), ULTRATECH CEMENT LTD., ACC CONCRETE LTD., RMC READY MIX (INDIA) PVT. LTD., NDCON CONSTRUCTIONS
9	AUTOCLAVED AERATED BLOCKS	BILTECH, ECO GREEN, FINECRETE, J.K. LAKSHMI CEMENT LTD.
10	POLYMER MODIFIED ADHESIVE FOR AAC BLOCKS	MYK LATICRETE, FERROUS CRETE, ARDEX ENDURA, ULTRATECH, SIKA.
11	FACTORY MADE PANELLED & WIRE GAUGE WOODEN DOOR/ WINDOW SHUTTERS.	M/S JAIN WOOD INDUSTRIES, KUTTY DOORS, SAMRAT PLYWOOD, NEW JAGDAMBA DOORS, MERINO, KITPLY, AS TIMBER
12	FLUSH DOOR SHUTTERS	KUTTY FLUSH DOOR, SAMRAT LAMINATE, NATIONAL PLYWOODS, JAIN WOOD INDUSTRIES, MINIMAX, CENTURY, AS TIMBER.
13	BLOCK BOARD	MERINO, MINIMAX, NATIONAL, ARCHIDPLY, CENT PLY, JAYNA, CENTURY.
14	LAMINATES	SAMRAT, VIRGO, MERINO, ARCHIDPLY, CENTURY LAMINATES
15	PRE-LAMINATED PARTICLE BOARD	ARCHIDPLY, CENTURY PLY BOARDS, BALAJI ACTION BUILDWELL, ECOBOARD
16	PARTICLE BOARD (MEDIUM DENSITY)/ VENEERED PARTICLE BOARD	CENTURY PLYBOARDS (INDIAN) LTD., BALAJI ACTION BUILDWELL, EVERGREEN BOARDLAM, ECOBOARD INDUSTRIES LTD.
17	PRE-LAMINATED MEDIUM DENSITY FIBRE BOARD	CENTURY PLYBOARDS, GREEN PLY, BALAJI ACTION BUILDWELL
18	TOILET CUBICALS	GREELAM, MERINO, DORMA
19	STAINLESS STEEL DOOR/ WINDOW HARDWARE FITTINGS (FIRE RATED AND NON-FIRE RATED)	DORMA, ASSA ABLOY, GEZE, D-LINE
(i)	FIRE RATED BALL BEARING HINGES OF STEEL GRADE SS304	GEZE MODEL NO. 98850001 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(ii)	FIRE RATED DEAD LOCK BOTH SIDE KEY OPERATION	GEZE MODEL NO. 98484002 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(iii)	PANIC BAR 1&2 POINT LOCKING PANIC BOLT (DOOR Ht. UPTO 2400MM)	GEZE MODEL NO. 98536301 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE

(iv)	EXTERNAL TRIM WITH LEVER HANDLE	GEZE MODEL NO. 98536302 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(v)	AUTOMATIC DOOR METAL SEAL	GEZEMODEL NO. 98427392 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(vi)	SURFACE MOUNTED RACK&PINION FIRE RATED DOOR CLOSER (DOOR WT. 100 KG)	GEZE MODEL NO. 1010008 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(vii)	PULL HANDLE BACK TO BACK, LEGNTH 300MM OF STEEL GRADE SS 304	GEZE MODEL NO. 98163135 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(viii)	FLOOR STOPPER OF HALF DOME OF 45MM DIA OF STEEL GRADE SS 304	GEZE MODEL NO. 98487003 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(ix)	LEVER HANDLE IN SS 304 FINISH	GEZEMODEL NO. 98482004 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(x)	GRAB BAR OF LENGTH 610MM, 25MM DIA	GEZE MODEL NO. 98163011 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(xi)	SURFACE MOUNTED RACK & PINION DOOR CLOSER	GEZE MODEL NO. 1010001 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(xii)	KICK PLATE 0.9MM THICKNESS IN SS 304 FINISH	GEZE MODEL NO. 98167014 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(xiii)	FIRE SEAL	DORMA RP55 OR EQUIVALENT MODEL OF ASSA ABLOY, GEZEMODEL NO. 98427392, D-LINE, GODREJ
(xiv)	PUSH PLATE IN SS 304 GRADE	DORMA MODEL NO. 1100 OR EQUIVALENT MODEL OF ASSA ABLOY, GEZE, D-LINE, GODREJ
(xv)	DUST EXCLUDING SOCKET IN SS 304 GRADE	DORMA 3/24 OR EQUIVALENT MODEL OF ASSA ABLOY, GEZEMODEL NO. 98487007, D-LINE, GODREJ
(xvi)	LEVER ACTION FLUSH BOLT 300MM LENGTH	GEZE MODEL NO. 98307012 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(xvii)	BALL BEARING HINGES HAVING 5 KNUCKLE	GEZE MODEL NO. 98850001 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(xviii)	DEAD LOCK WITH 55MM BASKET IN SS 304	GEZE MODEL NO. 98344021 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(xix)	DISABLE/ MALE/ FEMALE SIGN PLATE IN SS 304	GEZE MODEL NO. 8167003M,8167004F,8167005D OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE
(xx)	AUTOMATIC SLIDING GLASSDOOR	DORMA ES200 OR EQUIVALENT MODEL OF ASSA ABLOY, GEZE, D-LINE.
(xxi)	FLOOR SPRINGS SATIN STAINLESS STEEL	GEZE MODEL NO. 1740004,1740002 OR EQUIVALENT MODEL OF DORMA, ASSA ABLOY, D-LINE.
20	ANODISED/ ZINC ALLOY/ ALUMINIUM HARDWARE DOOR/ WINDOW FITTINGS	PULSE, SAVIO, HOPPE, ALUTECH
21	FRP DOOR FRAMES & SHUTTERS	ASHISH INDUSTRIES, JAYNA, SAINIK (CENTURY PLYWOOD), SELECTED PRODUCTS CO.
22	UPVC WINDOWS/ DOORS	VEKA, FENESTA, REHAU, PROMINANCE WINDOW SYSTEM, ALUPLAST
23	UPVC WINDOW/ DOOR HARDWARE FITTINGS (ZINC ALLOY)	PULSE, HOPPE, GU, ROTO
24	WIDOWS BLINDS	VISTA, MAC, HUNTER DOUGLAS, DE-DÉCOR
25	STRUCTURAL STEEL SUCH AS MS FLATS, SQ.BARS ANGLES ETC.	SAIL, TATA STEEL, RINL, JINDAL STEEL & POWER LTD. AND JSW STEEL LTD.
26	FIRE RATED DOORS (METTALIC/ NON METTALIC)	KUTTY DOORS, NAVAIR, PROMAT, SYNERGY THRISLINGTON
27	HOT-ROLLED STEEL SECTIONS FOR MS DOORS, WINDOWS AND VENTILATORS	NAV DURGA STEEL CORPN, CRM STEELS P. LTD, SHYAM ISPAT UDYOG, VIMAL, SHIV
28	MILD STEEL DOOR, WINDOWS & VENTILATORS MANUFACTURERS	FRIENDS MANUFACTURING COMPANY, KOTKAPURA, PD INDUSTRIES, SHAKTI INDUSTRIES, STEELMAN INDUSTRIES, SKS STEEL INDUSTRIES, SHIVAM

29	PRESSED STEEL DOOR FRAMES MANUFACTURERS	KRISHNA STEEL FABRICATOR SIRSA, LAXMI STEEL WORKS BAHADURGARH, ASHISH INDUSTRIES GHAZIABAD, ASHWANI & SONS.
30	HOLLOW STEEL SECTIONS	JINDAL INDUSTRIES HISAR, TATA STEEL, STEEL & METAL TUBES (INDIA) PVT. LTD., MADHAV ALLOYS (JYOTI), APL APOLLO STEEL PIPES.
31	STEEL TUBES FOR STRUCTURAL STEEL/ERW PIPES & TUBES	JINDAL INDUSTRIES HISAR, TATA STEEL, STEEL & METAL TUBES (INDIA) PVT. LTD., MADHAV ALLOYS (JYOTI), APL APOLLO STEEL PIPES.
32	DASH/ ANCHORING FASTENERS, BOLTS, SCREWS AND NUTS.	HILTI, FISCHER, CKW, ATUL, PRIYA
33	STAINLESS STEEL RAILING	DORMA, KICH, OM STEEL, D-LINE.
34	CHEQUERRED PRE-CAST CC TILES	NTC, SWASTIK TILE, GTC, DALAL TILES PVT. LTD.
35	CERAMIC TILES	SOMANY, KAJARIA, ORIENTBELL, RAK.
36	VITRIFIED TILES	SOMANY, KAJARIA, ORIENT BELL, RAK.
37	ADHESIVE/ GROUTING FOR USE WITH TILES	FERROUS CRETE, MYK LATICRETE, ARDEX EDURA, FAIRMATE, DURA BUILD CARE, SIKA
38	WOODEN LAMINATE FLOORING	PERGO, KRONOTEX, FLORENCE, UNITEX, ACTION TESA
39	UNPLASTICISED RIGID PVC PIPE & FITTINGS	SUPREME, FINOLEX, PRINCE, KISAN, DIPLAST.
40	GALVANISED STEEL SHEETS (UNCOATED & PRE-COATED)	SAIL, TATA, JINDAL
41	ROOFING SHEETS (GALVALUME)	CRIL, LLOYDS, INTERACH, MULTICOLOR.
42	FALSE CEILING- GYPSUM	SAINT GOBAIN, VANS, GYPSUM, USG BORAL, LLYOD, GYPTECH
43	FALSE CEILING- METAL	ARMSTRONG, DEXUNE, SAINT GOBAIN, HUNTER DOUGLAS, GYPTECH
44	FALSE CEILING- CALCIUM SILICATE	HILUX, AEROLITE, ARMSTRONG, GYPTECH
45	FALSE CEILING-MINERAL FIBRE	ARMSTRONG, DEIKEN, DEXUNE, SAINT GOBAIN, GYPTECH
46	ACCOUSTIC: GLASS / WOODEN FIBRE FALSE CEILING AND WOODEN/ FABRIC WALL LINING	ARMSTRONG, ACCOUSTIBLOK, HIMALYAN ACOUSTICS, ANUTONE, GYPTECH
47	FALSE CEILING-ALUMINIUM POWDER COATED	ARMSTRONG, DEXUNE, SAINT GOBAIN, HUNTER DOUGLAS
48	LIGHT WEIGHT GYPSUM PLASTER	SAINT GOBAIN, ULTRATECH, FERROUS CRETE, USG BORAL.
49	OIL BOUND DISTEMPER/ ACRYLIC DISTEMPER *	NEROLAC ACRYLIC DISTEMPER, TRACTOR ACRYLIC DISTEMPER (ASIAN PAINTS), MAXILITE ACRYLIC DISTEMPER (ICI), BISON ACRYLIC DISTEMPER (BERGER).
50	INTERIOR EMULSION/ PLASTIC EMULSION*	DULUX ACRYLIC EMULSION/ SOLITAIRE A-1000 (ICI), APCOLITE PREMIUM EMULSION (ASIAN), BEAUTY GOLD (NEROLAC), SILK (BERGER)
51	ACRYLIC SMOOTH EXTERIOR PAINT*	APEX ULTIMA (ASIAN), DULUX WEATHERSHEILD MAX (ICI), EXCEL (NEROLAC), WEATHERCOAT ALL GUARD (BERGER)
52	DRY DISTEMPER*	NEROLAC, BERGER, ASIAN PAINTS, ICI, JENSON & NICHOLSON (J&N)
53	TEXTURED EXTERIOR PAINT*	NEROLAC, BERGER, ASIAN PAINTS, ICI
54	SYNTHETIC ENAMEL PAINTS*	DULUX HI-GLOSS (ICI), APCOLITE PREMIUM GLOSS (ASIAN), NEROLAC HIGH GLOSS (NEROLAC), LUXOL HI-GLOSS (BERGER)
55	WOOD PRIMER*	NEROLAC, BERGER, ASIAN PAINTS, ICI
56	STEEL PRIMER*	NEROLAC, BERGER, ASIAN PAINTS, ICI
57	EXTERIOR WALL PRIMER*	EXTERIOR NEROLAC PRIMER, EXTERIOR BERGER PRIMER, EXTERIOR ASIAN PAINTS PRIMER, EXTERIOR ICI PRIMER

58	WALL PUTTY (WHITE CEMENT BASED)	BIRLA WALL CARE, JK WHITE, SARA WALL PUTTY
59	POLYMER MODIFIED SELF CURING PLASTER	MYK LATICRETE, FERROUS CRETE, ARDEX ENDURA, ULTRATECH
60	PAVER BLOCK & KERB STONE	NITCO, UNITILE, N.T.C., SCC, DALAL TILES, POOJA CONCRETE FABRICATOR, SUPER PAVER BLOCK, MS CONCRETE
61	HEAT RESISTANT TILES	NATIONAL TILES CORPORATION, FREDO COOL TILES, INSULLA, WHITE FEET, DALAL TILES PVT. LTD.
62	VITREOUS CHINA SANITARY WARE	HINDWARE, CERA, JOHNSON PEDDER, SOMANY, KEROVIT
(I)	WHITE VITREOUS CHINA UNDER COUNTER RECTANGULAR BASIN	CERA CAT. NO. S 2030104 OR EQUIVALENT MODEL OF HINDWARE, JOHNSON PEDDER, SOMANY, KEROVIT
63	PLASTIC FLUSHING CISTERN FOR WC AND URINALS	JINDAL, STEEL BIRD, SEEMLINE, VIKRAM PLASTIC, PRAYAG POLYMERS (P) LTD.
64	PLASTIC SEAT COVER OF W.C.	AJANTA POLYMERS, JINDAL MALPINE, JAIN POLYMERS
65	STAINLESS STEEL SINK	ALLEX, JAYNA, JMD INTERNATIONAL, STEEL CRAFT
66	MIRROR GLASS	ATUL, MODIGUARD, GOLDEN FISH
67	CENTRIFUGALLY CAST (SPUN) IRON PIPES	NECO, BENGAL IRON, DURGAPUR ISPAT UDYOG, SINGHAL IRON FOUNDRY (SKF), KAPILANSH DHATU UDYOG PVT. LTD., RPFM, HIF.
68	HUBLESS CENTRIFUGALLY CAST (SPUN) IRON PIPES	NECO, BENGAL IRON, RAJ PATTERN MAKERS & FOUNDERS, SINGHAL IRON FOUNDRY (SKF).
69	CP FITTINGS & ACCESSORIES	MODEL OF JAQUAR, HINDWARE, KEROVIT AS PER NOMENCLAURE OF ITEMS AND EQUIVALENT MODEL OF JAINKO, JAL, PRIMA.
70	BRASS STOP & BIB COCK	DHAWAN SANITARY UDYOG, JAINKO, SHAKTI, VARDHMAN INDIA PRODUCTS
71	FERRULES FOR WATER SUPPLY	HIND METAL WORKS, KRITIKA, DRP, SHAKTI
72	BALL COCK WITH ROD	RESP FAUCET INDUSTRIES, DHAWAN SANITARY UDYOG, NEW METAL WORKS, KPR, PRAYAG.
73	POLYETHYLENE WATER STORAGE TANK	SINTEX, VECTUS, KAVERI, ORIENT
74	STONEWARE PIPES & GULLY TRAPS	SORKHI INDUSTRIES, RK INDUSTRIES, NAVNEET, MOLI CERAMICS, OCR, ANAND
75	PRE-CAST CONCRETE PIPES (NON-PRESSURE)	RAMNIK, BFSP, JAGDAMBHEY SPUN PIPE, GURKIRPA SPUN PIPES
76	GI PIPE	JINDAL (HISSAR), TATA, BST, PRAKASH SURYA
77	GI FITTINGS	UNIK, AVR, ZOLOTO, SANT, HBI, C-BRAND, NVR
78	C-PVC PIPE	PRINCE, JINDAL (FLOWKEM), ASTRAL, AJAY POLYMERS, SUPREME, FINOLEX.
79	WATER METER	CRESCENT, PRINCE, FEDREL, DASHMESH, NBESON, SANT
80	GUN METAL GATE, GLOBE, CHECK VALVES & NON-RETURN VALVES	LEADER, ZOLOTO, SANT, RAJAN METAL INDUSTRIES, H.B. METALS, HVI, NVR.
81	CENTRIFUGALLY CAST (SPUN) IRON PIPES (CLASS LA).	TRU FORM ENGINEERS, KAPILANSH, ELECTROSTEEL, HITECH METAL CASTINGS.
82	C.I. SLUICE VALVES & REFLEX VALVES	ZOLOTO INDUSTRIES, SANT VALVES, AMCO INDUSTRIES, KIRLOSKAR, RATAN INDUSTRIAL CORPORATION, HVI, NVR.
83	STAINLESS STEEL PIPES & FITTINGS	JINDAL STAINLESS STEEL, OM STEEL GROUP, V STEEL, VIEGA, RAMPART INDIA PVT. LTD.,
84	DUCTILE IRON PIPES & FITTINGS	JINDAL SAW LTD, ELECTRO STEEL, CHANDRANCHAL INFRA, ELECTROTHERAM
85	C.I./D.I. MANHOLE COVERS & FRAMES	SWASTIKA ENTERPRISES, BENGAL IRON CORPORATION, NECO, BINAY UDYOG, CHANDERANCHAL

86	WATER REPELLANT SILANE CHEMICAL	PIDILITE, FERROUS CRETE, ARDEX ENDURA
87	ALUMINIUM SECTIONS	HINDALCO, JINDAL, INDIAN ALUMINIUM CO.
88	BASIC/ TOUGHENED ETC. GLASS	SAINT GOBAIN, ASAHI, MODI, GOLD PLUS GLASS, PILINGTON.
89	APPROVED PROCESSORS FOR PERFORMANCE GLASS/ TOUGHENED GLASS/ HERMETICALLY SEALED/ LACQUERED GLASS etc.	ART & GLASS, MIRAGE TOUGHENED GLASSES (P) LTD., AAR PAR GLASS, VERMA GLASS.
90	STRUCTURAL GLAZING	ALCOB, ALUPRO, ALUPLAX, SP FABRICATORS, SAINT GOBAIN, GLAVERBEL.
91	FAÇADE GLASS OPENABLE FITTINGS	ALUALPHA, SAVIO, HOPPE, ALUTECH
92	GLASS FAÇADE/ GLASS CANOPY WITH SS SPIDER FITTINGS	ALCOB, ALUPRO, ALUPLAX, SP FABRICATORS, SAINT GOBAIN, GLAVERBEL.
93	FRAMELESS GLAZING WITH SS PATCH FITTINGS	DORMA, ASSA ABLOY, GEZE, D-LINE
94	GRC WALL TILES	DALAL TILES PVT. LTD.
95	GRC SCREEN/ JALI PANELS	DALAL TILES PVT. LTD.
96	STRUCTURAL STEEL:	SAIL, TATA STEEL, JINDAL (HISAR).

NOTE: -

- 1) A List of Preferred Brand Names of Various Materials / Products are shown above for usage in execution of Work. Only preferred brands shall be used in work.
- 2) For materials for which preferred brand is not mentioned then it must be ensured, in general, that materials to be used in the works shall be good quality of reputed make and bear BIS Certification mark.
- 3) In cases where for a particular material/product BIS Certification Mark is not available, then the material proposed to be procured can be used subject to the condition that it should conform to CPWD Specifications, meeting minimum GRIHA 3-star rating and relevant BIS codes. In such cases written approval of the Engineer-in-Charge shall be obtained before use of such material in their works.
- 4) The list given above does not absolve the Executing Agency from their responsibility for using these products. It is only after, they are satisfied about the quality and performance, the products shall be used. To achieve this, proper check on the quality of the product, actually to be used, should be exercised.
- 5) However, in exceptional circumstance alternate approved equivalent material of any other Specialized Companies / Firms may also be used, like in case it is established that the Brands Specified in the list are not available in the current market or in other unavoidable circumstances and subject to approval of the alternate brand by the Superintending Engineer and the decision of SE (Jalandhar) shall be binding and final in this regard. Also in such situation, cost adjustment (if required) shall also be made if felt necessary.

Name of work: - Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).

PART-C

(SCHEDULE OF QUANTITIES)

SCHEDULE OF QUANTITIES

Name of work: - Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).

Sr. No	Description of item	Qty.	Unit	Rate	Amount
1	Earth work in excavation by mechanical means (Hydraulic excavator) / in manual means in foundation trenches or drains (not exceeding 1.5 m 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.				
1.1	All kinds of soil.	24.00	cum	260.30	6,247.00
2	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	5712.00	Sqm	17.60	100,531.00
3	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	1:5:10 (1 cement : 5 coarse sand (zone-III) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)	1.00	cum	6518.60	6,519.00
4	Providing and fixing up to floor five level precast cement concrete string or lacing courses, copings, bed plates, anchor blocks, plain window sills, shelves, louvers, steps, stair cases, etc., including hoisting and setting in position with cement mortar 1:3 (1 Cement : 3 coarse sand), cost of required Centering complete.				
4.1	1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20mm nominal size derived from natural sources)	1.00	cum	10105.10	10,105.00

5	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :				
5.1	1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	3.00	cum	9045.75	27,137.00
6	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above plinth level up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement :				
6.1	1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	2.00	cum	10852.95	21,706.00
7	Centering and shuttering including strutting, propping etc. and removal of form for				
7.1	Foundations, footings, bases of columns, etc. for mass concrete	7.50	sqm	392.15	2,941.00
7.2	Columns, Pillars, Piers, Abutments, Posts and Struts	19.00	sqm	961.30	18,265.00
8	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
8.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	500.00	kg	107.85	53,925.00
9	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:				
9.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	6.00	cum	7132.25	42,794.00
10	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :				
10.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	15.00	cum	9105.95	136,589.00

11	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.				
11.1	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	1000.00	Kg	172.60	172,600.00
12	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	625.00	kg	772.40	482,750.00
13	12 mm cement plaster :				
13.1	1:4 (1 cement : 4 coarse sand)	670.00	Sqm	357.35	239,425.00
14	15 mm cement plaster on rough side of single or half brick wall of mix:				
14.1	1:4 (1 cement: 4 coarse sand)	470.00	Sqm	411.75	193,523.00
15	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:				
15.1	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)	1140.00	sqm	171.10	195,054.00
16	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :				
16.1	Two or more coats on new work	30.00	sqm	155.90	4,677.00
17	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.	1140.00	Sqm	156.05	177,897.00

18	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge.	1.00	cum	3551.25	3,551.00
19	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.				
19.1	In cement mortar	5.00	cum	2060.20	10,301.00
20	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 metres lead.	350.00	kg	5.65	1,978.00
21	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	100.00	cum	263.95	26,395.00
22	Providing and fixing concertina coil fencing with punched tape concertina coil Y' 600 mm dia 10 metre openable length (total length 90 m), having 50 nos rounds per 6 metre length, upto 3 m height of wall with existing angle iron shaped placed 2.4m or 3.00 m apart and with 9 horizontal R.B.T. reinforced barbed wire, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, all kg/sq. complete as per direction of Engineer-in-charge, with reinforced barbed tape(R.B.T.) / Spring core (2.5 mm thick) wire of high tensile strength of 165 mm with tape (0.52 mm thick) and weight 43.478 gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately)	330.00	metre	375.80	124,014.00
				Total	2,058,924.00
	Modified Estimated Cost after using correction factor on DSR 2023 on account of GST @ 0.973 (X)				2,003,333.00
	Less Cost Index @3.74% on (X)				-74924.65
	Total				1,928,408.35

23	Forming groove of uniform size in the plaster work as per approved pattern using wooden battens, nailed to the under layer, including removal of wooden battens, repair to the edges of panels and finishing the groove complete as per specifications and direction of the Engineer-in-charge :				
23.1	15 mm wide to 10 mm deep groove	235.00	mtr	71.85	16,885.00
24	Credit for old dismantle iron door i/c loading from site, transportation and cleaning the site as per direction of engineer-in-charge	350.00	kg	-30.00	-10500.00
	Total				19,34,793.00

(Er. Amandeep Kamboj)
Assistant Engineer (P) - Ludhiana
CPWD, Ludhiana

(Er. Sukhbir Singh)
Executive Engineer – Ludhiana
CPWD, Ludhiana



Central Public Works Department

NIT/ RFP No. 17/EE-Ludhiana/2026-27

Name of Work:- Repair of Damaged Boundary wall, main Gate & Department Entry Board, painting, fixing of concertina coil with Y-shaped Angle at top and stainless-steel gates etc. at Income Tax, campus Moga (Pb).

SCHEDULE OF QUANTITIES

Name of the Contractor / Company Name					
Sl. No.	Name of Component	Estimated cost	Percentage above or below the estimated cost	% in Figures	Total Cost
1	Total Cost	Rs. 19,34,793.00			
	Grand Total				