Name of Work:-Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.

I N D E X

S. No.	PARTICULARS	PAGES
1	Index	1
2	Notice Inviting Tender	2
3	Press Notice	3-9
4	General Guidelines for Bidders	10-11
5	Brief Particulars of The Work	12-16
6	Guidelines/Procedure For 'E' Procurement.	17
7	Instructions To Tenderers for Submission of Tenders	18
8	Form PWD-6	19-25
9	Percentage Rate Tender (Form CPWD-7)	26-28
10	Evaluation Criteria for CPWD and Non-CPWD Contractors	29-32
11	Form A to N	33-49
12	FORMAT FOR VARIOUS GUARANTEE BONDS & AFFIDAVIT TO INCREASE OF VALIDITY OF BANK GUARANTEE	50-55
13	Schedule A To F	56-62
14	Integrity Pact	63-69
15	General Specifications	70-71
16	Special Conditions	72-75
17	General Conditions	76-91
18	Additional Conditions	92-95
19	Particular Specification	96-106
20	Condition for RMC and Design Mix Concrete	107-119
21	Special Conditions for Cement, Steel & RCC work	120-123
22	Specification for Bituminous work	124-132
23	Important Conditions for Drain work	133-134
24	General Specifications for RCC U Shape /Box Pre-Cast Drain	135-136
25	(TABLE-1) Equipment's for Testing of Materials of Concrete at Site Laboratory	137-138
26	Conditions for Security Deposit & Performa for mandatory test	139-140
27	Special Condition for submission of Running Account / Final bill by contractor	141
28	Special Condition of National Green Tribunal (NGT)	142
29	Special Condition for Malba Disposal	143
30	Special Condition for Prevent Air Pollution	144
31	Condition for Material and Quality Assurance, Safety Measures	145-149
32	List of Approved Institute/Laboratory for Design Mix / Job Mix	150
33	List of Preferred Make	151-152
34	Additional EPG circular No. F.sdpwd-2/CD057801602/ 1641-1647 dated 14.08.2025 & OM for Construction Works Circular No. Pr.CE(M&F)/EinC(PWD) /7111/ dspwd2/ 49-52 dated 10.01.2024.	153-156
35	Schedule Of Quantity	157-166

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)

NOTICE INVITING TENDER

NIT No.:	**13/CE/South/PWD/2026-27** **1 2 /EE/SWR-II/PWD/2026-27**
Name of Work: -	**Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.**
Estimated Cost	**Rs. 31,15,30,274/-**
Earnest Money	**Rs. 41,15,303/-**
Performance Guarantee	**5% of the Tendered value of the work + EPG**
Enhanced Performance Guarantee	**Amount equivalent to the difference between the 25% less amount of ECPT and quoted rate**
Security Deposit	**2.5 % of tendered value of the work + Additional Security Deposit @ 2.50% of the cost of Precast Drain.**
Time Allowed	**07 (Seven) Months**
Pre-Bid conference	**….NA….**
Certified that this NIT contains 166 pages (Serial numbered 1 to 166 pages).	

NIT amounting to Rs. 31,15,30,274/- (Rs. Thirty One Crore Fifteen Lakh Thirty Thousand Two Hundred Seventy Four Only) is hereby approved.

Assistant Engineer
South West Road Sub-Division-25

Executive Engineer
South West Road Division-2

Superintending Engineer
South West (M), Circle

Assistant Engineer (P)
South Maintenance Zone

Executive Engineer (P)
South Maintenance Zone

Approved

Chief Engineer
South Maintenance Zone

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)

PRESS NOTICE

The **Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi (E-Mail ID : eepwddelhim141@gmail.com)** "For & on behalf of President of India", invites online Percentage Rate tenders in **Two Bid System** from eligible contractors enlisted in B & R category with CPWD as well as other (Non-CPWD) experienced contractors who fulfill eligibility criteria.

The bid form and other details can be obtained from the website **https://govtprocurement.delhi.gov.in.**

S. No.	Name of Work	Estimated Cost	Earnest Money	Time Allowed	Date of Prebid conference	Date pf Pre-bid Meeting	Date of release of tender through e-procurement	Last Date and Time of receipt of tenders through e-procurement	Date and Time of opening of Tender
1	**Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.** **NIT No. 13/CE/South/PWD/2026-27 1 2 /EE/SWR-II/PWD/2026-27** **Tender No. 2026_PWD_291229_1**	**Rs. 31,15,30,274/-**	**Rs. 41,15,303/-**	**07 (Seven) Months**	**..NA..**	**..NA..**	**12.05.2026**	**03.06.2026 3.00 P.M.**	**03.06.2026 3.30 P.M.**

** To be filled by EE

The enlistment of the contractors should be valid on the last date of submission of tenders. In case only the last date of submission of tender is extended, the enlistment of contractor should be valid on the original date of submission of tenders. Joint venture is not allowed.

1. Eligibility Criteria:

The Contractors/ agencies who fulfil the following requirements shall be eligible to apply. Joint ventures are not accepted. (Applicable for CPWD enlisted as well as non-CPWD contractors) [1(b), 1(c) & 1(d) are not applicable for CPWD enlisted contractors of appropriate class and category. However, 1(a), 1(e) are applicable for CPWD enlisted contractors also

(a) Should have satisfactorily completed the works as mentioned below during the last seven years ending last day of the month previous to the one in which tenders are invited.

Three similar completed works each costing not less than 40% of the estimated cost put to tender

or

Two similar completed works each costing not less than 60% of the estimated cost put to tender

or

One similar completed work costing not less than 80% of the estimated cost put to tender

Similar work shall mean **"RCC Drains or RCC work in any infrastructure projects"**
In case there are other items of work executed in any infrastructure projects besides RCC work, the value of RCC work executed in the project duly certified by the Client Department shall only be taken as value of the similar work (s).

Note:

(i) In case, the eligible work has been executed by a Joint Venture through one or more individual firm(s), then cost of completed work shall be distributed among the individual firm(s) in proportion to their share in Joint Venture and that will be considered as work experience for individual firm(s) for pre-qualification in bidding.

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

(ii) The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple interest rate of 7% per annum; calculated from the date of completion to previous day of the last day of submission of tenders.

The work experience certificate should be certified by an officer not below the rank of Executive Engineer/Project Manager or equivalent.

(b) Should have had Average Annual Financial Turnover of 30% amount of the estimated cost on construction works during the last three years ending 31st March 2025(Scanned copy of Certificate from CA with Unique Document Identification Number (UDIN) to be uploaded). The year in which no turnover is shown would also be considered for working out the average. The value of annual turnover figures shall be brought to the current value by enhancing the actual turnover figures at simple rate of 7% per annum;**(Form-A)**.

(c) Profit/Loss: The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheets ending31st March 2025 (standalone financial statement), duly certified and audited by the Chartered Accountant. **(Form-A)**

(d) Banker's Certificate from a Commercial Bank:
Should have a Banker's Certificate from a commercial Bank of 40% amount of the estimated cost)

Or

Net Worth certificate from CA with Unique Document Identification Number (UDIN) of minimum10% amount of ECPT (Applicable for non-CPWD contractors) (**FormB-1).**

(e) **Bidding Capacity:**
The bidding capacity of the contractor should be equal to or more than the estimated cost of the work put to tender**.** Bidding capacity shall be worked out by the following formula:
Bidding Capacity = {[AxNx1.5]-B}

Where,
A = Maximum turnover in construction works executed in any one year during the last seven years (i.e. upto 31st March-2025) taking into account the completed as well as works in progress. The value of annual turn over shall be brought to current costing level by enhancing at a simple rate of 7% per annum.
N = Number of years prescribed for completion of work for which bids have been invited.
The value of N shall be taken as 1 (one), where the completion period is less than one year.
B =Value of existing commitments of ongoing works during the period of completion of work for which bids have been invited.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general capacity formula being used for other entities shall be applicable to it for calculation of bidding capacity.

[Newly enlisted entity may like to follow general bidding capacity formula even before period of three years if it so chooses.]

Bidding capacity for newly enlisted entity based on rules 9.6.3 & 9.6.4 enlistment rules 2026 shall be as follows: -
Bidding capacity = {[A'xNx1.5]-B}

Where

A'= Proportionate share of newly enlisted director / partner in originally enlisted company / firm multiplied by the factor A, as given below. Value of A' will be mentioned in the enlistment order by member secretary of Advisory committee for Enlistment Authority, it will remain same for three years.

A = Maximum turnover in civil construction works executed in any one year during the last seven years taking into account the completed as well as works in progress. The value of completed works shall be brought to current costing level by enhancing at a simple rate of 7% per annum. This value is of originally enlisted entity at the time of enlistment of newly enlisted entity.

N = Number of years prescribed for completion of work for which bids have been invited.

B = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity.]

Annual turnover of newly enlisted entity shall be in proportion to the shareholding of partners / directors in the original enlisted entity at the time of enlistment of the newly enlisted entity.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula being used for other entities shall be applicable to it for calculation of bidding capacity. Newly enlisted entity may like to follow general bidding capacity formula even before period of three years, if it so chooses.

Note: The bidder should submit bidding capacity calculation as per Form "C-3".

(f) The bidder should have sufficient number of Technical and Administrative employees for the proper execution of the contract. The bidder shall have to submit a list of these employees stating clearly how these would be involved in this work within 15 days of award of work.

2. **An affidavit on non-judicial stamp paper minimum Rs.200/- for condition as below** (f**or Both CPWD and Non-CPWD contractors): I/We undertake that the work shall be executed with Tool & Plant of following specifications: -**

(i) Hot Mix Plant installed in NCR (Batch type only), fitted with electronic controls & screens of capacity 100-120 ton (30-40 Cum) per hour having arrangement of mixing of reclaimed materials from cold milled RAP in good working condition. There should be a valid pollution clearance certificate or NOC for running Hot Mix Plant from Central or concerned State Pollution Control Board.

(ii) Hydrostatic paver finisher fitted with electronic sensor control capable of laying minimum 4 m width and extendable up to 7 m conforming to MoRTH specifications and IRC-27, 2009 in good working condition.

3. The intending bidder must read the terms and condition 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.

4. This information and instructions for bidders posted on website shall form pay of bid document

5. Bid can only be submitted after deposition of original EMD in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt (FDR), Bankers Cheque or Bank Guarantee (as prescribed from any of the Commercial Bank) drawn in favour of **Executive Engineer, M-141(N), PWD, New Delhi** and shall be scanned and uploaded to the e-tendering website within the period of bid submission. The original EMD should be deposited either in the office of Executive Engineer inviting bid or division office of any Executive Engineer of PWD Delhi or any Executive Engineer of CPWD within the period of bid submission.

The EMD receiving Executive Engineer shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format **(as per Form-M)** uploaded by tender inviting EE in the NIT. The 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 lakhs, 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 a period of 90 days for single bid works and 180 days for two bid system or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders

The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier. However, in case of two/ three bid system, earnest money deposit of bidders unsuccessful during technical bid evaluation etc. should be returned within 30 days of declaration of result of technical bid evaluation.

6. 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 compiled with and other necessary documents can be seen and downloaded from https://govtprocurement.delhi.gov.in
7. Those contractors who are not registered or have not updated their profile on the website mentioned above, are required to get registered/update their profile beforehand.
8. The intending bidder must have valid Class-III digital signature to submit bid.
9. On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.
10. Contractor can upload documents in the form of JPG format and PDF format.

11. **Certificate of Turn Over:** At the time of submission of bid contractor may uploaded Certificate from **CA** duly issued with UDIN Number mentioning Financial Turnover of last 7 years or for the period as specified in the bid document and further details if required may be asked from the contractor after opening of technical bids. There is no need to upload entire voluminous balance sheet.

12. Contractor must ensure to quote rate in the prescribed column(s) meant for quoting rate in figures appears in pink colour and the moment rate is entered; it turns sky blue.

    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).

    However, 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.

13. The Technical Bid shall be opened first on due date and time as mentioned above. The time and date of opening of financial bid of contractors qualifying the technical bid shall be communicated to them at a later date.

14. Pre- Bid meeting shall be held in the Conference Hall of Chief Engineer, South Zone, PWD, 7thFloor, MSO Building, New Delhi-110002 on dated **NA** at **NA*** PM to clear the doubts of intending tenders, if any. Corrigendum/ modifications issued as a result of pre bid meeting shall be uploaded on https://govtprocurement.delhi.gov.in.

15. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

16. Enhanced Performance Guarantee (EPG) in case of abnormally low bids:
A bid shall be treated as abnormally low if the quoted bid price is more than 25% below the estimated cost put to tender (ECPT) (Suppose the Rate quoted is 30% Below ECPT, then the bid will be considered as Abnormally Low). In cases of abnormally low bid, the bidder shall be required to submit an Enhanced Performance Guarantee (EPG) in addition to the standard Performance Guarantee (PG) as per the following structure**: -**

Percentage Below ECPT	**Additional Enhanced Performance Guarantee to be submitted**
25% or below (Example 30% below)	Amount equivalent to the difference between 25% less the amount of ECPT and the quoted rate. Example ECPT= Rs. 1000.00 Rate Quoted = 30% Below **Additional Enhanced PG = (30%-25%) x 1000.00= 50.00**

17. <u>List of Mandatory Documents to be scanned and uploaded within the period of bid submission</u> (Applicable for both CPWD enlisted as well as Non CPWD enlisted contractor)

(i) Insurance Surety Bond, Demand Draft/ Account Payee Banker's Cheque / FDR/ Bank Guarantee of any commercial Bank (for balance amount as prescribed) against EMD in favour of **Executive Engineer, M-141(N), PWD, New Delhi -110045.**

(ii) Copy of Receipt of deposition of original EMD issued from division office of any Executive Engineer (including NIT issuing EE/AE), PWD, Delhi and any Executive Engineer, Central Public Works Department (CPWD) Form "M".

(iii) Enlistment order of the contractor.**(Applicable for CPWD enlisted contractors only).**

(iv) Certificate of financial turn over from Chartered Accountant duly issued with UDIN Number (Form – "A").

(v) Banker's Certificate / Net Worth Certificate duly issued with UDIN Number (Form "B"/ "B-1").

(vi) Detail of similar works completed during last 7 years as per Form "C"

(vii) Work experience Certificate issued by the owner department Form "D".

(viii) Calculation of Bidding capacity along with Form "C-1""C-2" &"C-3".

(ix) Certificate regarding structure and organization (Form – "E")

(x) The Copy of GST Registration Certificate of Delhi, if already obtained by the bidder. If the bidder has not obtained GST Registration of Delhi, or as required by GST authorities then in such a case the bidders shall scan and upload following undertaking along with other bid

document. "*If work is awarded to me, I/we shall obtain GST Registration certificate of Delhi, within one month from the date of receipt of award letter or before release of any payment by PWD, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by PWD or GST Department in this regard*" (Form- N).

(xi) Upload NIT in PDF form as uploaded by EE. This will satisfy digital signing of the terms and condition of the NIT by the bidder.

(xii) Letter of transmittal (Form "K")

(xiii) Affidavit on non-judicial stamp paper of Rs. 200/- as per the format specified in **Form - F, Form-H, Form-I, Form-J**, **Form-L**

(xiv) Copy of PAN Card issued by Income Tax Department.

(xv) Integrity Pact signed by the bidder in the presence of a witness for works equal to or above the threshold value given in Schedule-F.

(xvi) If the work experience certificate attached is for the work executed for any private entity, then bidder is required to upload the copy of final bill along with downloaded copy of TDS from TRACES website. Additionally, the tendering authority may, if necessary, verify the work.

(xvii) Scanned copy of an affidavit on non-judicial stamp paper minimum Rs.200/- for condition as below (Applicable for CPWD enlisted as well as non-CPWD contractors):

I/We undertake that the work shall be executed with Tools& Plants of following specifications:

(1) I/We will use Hot Mix Plant installed in NCR (Batch type only), fitted with electronic controls & screens of minimum capacity 100-120 ton (30-40 Cum) per hour having arrangement of mixing of reclaimed materials from cold milled RAP in good working condition with valid pollution clearance certificate or NOC for running Hot Mix Plant from Central or concerned State Pollution Control Board.

(2) I/We will arrange/install the sufficient numbers of hot mix plants (HMPs) to complete the work within stipulated period.

(3) I/We will use sufficient nos. of hydrostatic paver finishers fitted with electronic sensor control each capable of laying minimum 4 m width and extendable up to 7 m conforming to MoRTH specifications and IRC-27, 2009, all in good working condition.

Note: Tender documents shall be considered valid of only those contractors who will upload the scanned copies of the above-mentioned documents along with tender within the period of bid submission:

Certified copy of all the scanned and uploaded documents as specified in CPWD-6 shall have to be submitted by the lowest bidder only within a week of opening of tender, physically in the office of bid opening authority**.**

Online financial bid submitted by intending bidders shall be opened only of those bidders, whose original Earnest Money Deposit deposited with any division office of PWD, Delhi and any Division office of CPWD & other scanned and uploaded documents are found in order.

The EPG shall be in the form of Bank Guarantee or other acceptable form as per existing CPWD guidelines and must be submitted within the time frame prescribed for Performance Guarantee. Enhanced Performance Guarantee shall be submitted in favour of **Executive Engineer, M-141(N), PWD, New Delhi** (as per circular no. **F.dspwd-2/CD057801602/1641-1647 issued by the Deputy Secretary PWD, PWD Secretariat dated 14.08.2025**)

The tender 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 on the website https://govtprocurement.delhi.gov.in

….*….To be filled by EE.

Executive Engineer
Division, South West Road-2, M-141(N), PWD,
Under Dabri Flyover, Near Janak Cinema,
Pankha Road, New Delhi-110045

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)

GENERAL GUIDELINES FOR BIDDERS

1.0 GENERAL:

1.1 Letter of transmittal and forms for deciding eligibility are given in Section - Information Regarding Eligibility.

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

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

1.4 The bidder may furnish any additional information which he thinks is necessary to establish his capabilities to successfully complete the envisaged work. He is, however, advised not to furnish superfluous information.

1.5 No information/documents shall be entertained after submission of bid unless it is required to clarify the query raised by Employer.

2.0 DEFINITIONS

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

2.2 EMPLOYER: Means the President of India, acting through **Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi.**

2.3 **BIDDER**: Means the individual, proprietary firm, firm in partnership, limited company private or public or corporation.

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

3.0 METHOD OF APPLICATION

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

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

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

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

4.0 FINAL DECISION-MAKING AUTHORITY

The employer reserves the right to accept or reject any bid and to annul the process and reject all bids at any time, without assigning any reason or incurring any liability to the bidders.

5.0 PARTICULARS PROVISIONAL

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

6.0 SITE VISIT

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

1.0 OPENING OF BID

7.1 After opening of the Eligibility/Technical bids, the bid opening authority **shall check the mandatory documents submitted** by each bidder vis-a-vis requirements as per NIT. **He may seek clarifications on the submitted documents, if required**, and communicates the same to individual bidders by Speed Post/ e-mail with a request to furnish required clarifications with or without supporting documents within prescribed time, as decided by the tender inviting authority. In case of failure to submit the requisite documents/clarifications within the prescribed time, it shall be presumed that the bidder does not have any clarifications to furnish and the decision on bids shall be taken accordingly.

7.2 After evaluation of applications, a list of short-listed agencies will be prepared. Thereafter the financial bids of only the qualified and technically acceptable bidders shall be opened at notified time, date and place in the presence of qualified bidders or their representatives.

8.0 AWARD CRITERIA

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

(a) Amend the scope and value of contract to the bidder.
(b) Reject any or all the applications without assigning any reason.

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

BRIEF PARTICULARS OF THE WORK

Scope of Work:

Scope of this work is mainly "**Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.".**

This also includes:

1. Execution will be supervised by Engineer-in-Charge & concerned AEs and their field units for respective BOQs.

2. During construction of drains parallel access has to be provided to general public without any hindrance at all location as per direction of Engineer in Charge.

3. For construction of footpath, guidelines of UTTIPEC pack have to be followed.

4. The contractor shall mandatorily carry out a detailed survey of the entire stretch where the work is to be executed before commencement of the work. The survey shall include details of levels, existing drain condition, alignment and any other relevant parameters required for Propper execution etc.. The work shall be executed strictly in accordance with the approved drawings issued by the Engineer-in-Charge and direction of the Engineer-in-Charge. Any discrepancy observed between site condition and the Drawings shall be immediately brought to the notice of the Engineer-in-Charge for necessary instructions before proceeding further. The contractor shall carry out the survey including levels after execution of works. The survey work does not absolved the responsibility of contractor to carry out the work as per agreement terms and condition and to maintain proper slope of drain.

5. The scope of work includes execution of work & services and handing over the assets after making them usable and functional in all aspects. The work is to be executed as per BOQ and other terms & conditions of agreement. The cost of labour, material, tools, plants and machinery required for execution of the whole project as per Layout plan & detailed design and drawings to be approved, specifications etc. is within the scope of this work.

6. Detailed Layout Plan, Cross sectional details have to be prepared by Agency as per requirement before proceeding for the execution of work on ground. All work has to be executed as per approved drawings. Similarly detailed survey of drains has to be carried out by the successful bidder after award of work. The successful bidder has to vet the drawing prepared/issued by Department in lieu of survey of drain done by him. If any discrepancy found it has to be brought in the knowledge of Engineer-in-Charge to get the rectified and approved proposed drainage drawing from the from the Department and its consultant. No claim whatsoever will be entertained in this regard.

7. All works has to be executed as per Drawings Issued by Engineer in Charge, specifications provided in the bid document, CPWD Specifications Vol-I & Vol. II, Manual of Storm Water Drainage System 2019 as amended up to date of MoHUA and National Building Codes 2016 (in case of difference if any, stringent / higher specification of the two shall be followed. In absence of CPWD Specification, IS Codes, MoRTH Specifications, National Building Code 2016, Specifications, sound engineering practices shall be adopted as per order of precedence defined in the contract.

8. The scope of works & specification are given in general but they are not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and/ or described in the specifications, provided that the same can be reasonably inferred there from. There may be several incidental works, which are not mentioned in the contract document/specifications but will be necessary to complete the item in all respect.

9. In case, some of items are missing in the scope of work or specifications in the bidding documents same shall be taken from the specification mentioned in similar type of items mentioned for similar type of buildings in the scope of work or shall be executed as given in the CPWD Specifications, NBC-2016, IS Codes or according to sound engineering practices so as to make the Drainage System including related services fully functional. No claim what so ever may be entertained at later stage. All cost of construction, improvement of drainage system along with services, landscape and horticulture works fully complete in all aspect unless specifically mentioned in the contract document and making buildings with services fully functional are included in the cost tendered for this work.

10. The scope of work also includes preliminary works like setting and maintenance of permanent bench marks reference points, central line of the carriageway etc. It shall also include making adjustment in the layout if required as per site conditions and as directed by the Engineer-in-Charge. The layout shall be got approved from the Engineer-in-charge before starting actual work. Existing levels of the area under the scope of work shall also be recorded.

11. Clearing of site for construction of the work and all activities connected therewith before commencement of work to the satisfaction of the Engineer-in-Charge.

12. All the exposed concrete surfaces shall have shutter or form liner finish (except for piles and lean concrete) and nothing shall be paid extra for the same.

13. Maintenance of all works during construction till handing over to the Department

14. Protection and maintenance of existing services.

15. Provision for all safety measures for traffic, pedestrian workmen, machinery etc. as considered necessary by the Engineer-in-Charge.

16. Identification of services like sewer lines, water supply lines, electric and telephone cables etc. well in advance of actual execution.

17. It may be noted that all the safety requirements as may be felt necessary by the Engineer- in-Charge, shall have to be provided for allowing the traffic to pass underneath the superstructure at all times during the construction period.

18. In case of defective construction by the contractor or on account of any other reason attributable to the contractor if the consultants appointed by the department, submit additional claims for re-designing on account of additional input by them, due to such reasons, the same shall also be borne by the contractor. The opinion of the Engineer-in-charge in these matters shall be final and binding.

19. All ancillary and incidental facilities required for execution of the work i.e. labour camps, stores, offices for contractors, work shop facilities, watch and ward, temporary structure for plants and machinery, well equipped. site laboratory as mentioned in the tender; document, water storage structure, tube wells, electric /telephone installation and charges, liaison work, protection work during execution and not included in the main items, any other item /activity contained elsewhere in the tender documents which is necessary for execution of work in the opinion of the Engineer-in-Charge.

20. Pumping and bailing out water in suitable manner as directed by Engineer-in-Charge and nothing shall be payable for this.

21. Intending tenderer must visit the sites of work and physically assess the activities which are involved for completing the work, including the quantum of work besides the information supplied in the tender document. No claim whatsoever shall be entertained on this account.

22. The contractor shall make arrangement for a regular fortnightly or other frequency as desired by Engineer-in-Charge for the documentation of the progress of work.

23. Activities related to setting of various items such as permanent bench-marks, reference points, central line of carriageway, layout of foundations and bearings etc. shall be performed by total station survey.

24. Services like water supply lines, sewer lines, storm water drains, electricity lines, telephone lines, over head and underground cables /structure, if any falling in the alignment of the work (which are required to be removed or shifted in the opinion of the Engineer-in-Charge) shall be removed /shifted by the department if found necessary by the Engineer-in-Charge. Time taken for its shifting, removal, and diversion shall be accounted for towards according extension of times if it actually causes hindrance in execution of the work as per discretion of the Engineer-in-Charge. No claim for delay or otherwise due to above reasons shall be entertained on this account.

25. The protection of all nearby artificial and natural features (such as buildings, boundary wall, trees, pavements, roads etc.) prone to get damaged during the execution of work due to any activity (such as excavation, movement of machines, operation of T&P etc.).

26. Protection of earth work with the help of required planking, strutting, shoring etc., cutting of slopes with or without step and pumping out or bailing out of water, if required.

27. The contractor shall remove the malba on daily basis at his own cost and keep the carriageways & footpaths neat and clean during the execution of the work. In case the Agency fails to remove the malba, the same shall be removed by the department at his risk and cost and necessary recovery shall be made from the contractor.

28. The contractor will enrol himself in CBuD (Call before you Dig) Portal/Mobile App before start of work and upload geo coordinates of the area to be excavated before actual excavation on Public Roads.

29. Necessary steps shall be taken to keep noise and dust nuisance to the minimum. All work needs to be done under the direction of Engineer-in-Charge. Helmets, goggle, safety belts etc., should be used whenever required and as directed by the Engineer-in-Charge. The demolition work shall be proceeded with in such a way that it causes the least damage and nuisance to the adjoining building and the public. Barricading shall be provided as per NGT guidelines.

30. Excavation where directed by the Engineer-in- Charge shall be securely barricaded and provided with proper caution signs, conspicuously displayed during the day and properly illuminated with red lights and/or written using fluorescent reflective paint as directed by engineer in charge during the night to avoid accident.

31. Barricading shall be erected with 2.00 metre high temporary barricading at site; each panel of size 2.50 m x2.00 m made of 40x40x6 mm angle iron or 50x50x3 mm hollow MS tube posts/horizontal members/bracings covered with 1.63 mm thick MS sheet. The sheet shall be fixed with 30x5 mm MS flat by suitable welding/riveting. The panels shall be made so that gap of 50cm above the ground is

available making overall height as 2.5 m. MS channel ISLC 75 @ 5.70 kg/m, 50 cm long shall be provided at the bottom having oval shaped holes of size 50x25 mm at both ends with 50 cm long MS angle 40x40x6 mm bracing. Suitable arrangement shall be made to fix the barricading to avoid from overturning by providing 250 mm long expansion fasteners at both ends. The work shall be executed as per drawing/direction of Engineer-in-Charge which includes writing and painting, arrangement for traffic diversion such as traffic signals during construction at site for day and night, glow lamps, reflective signs, marking, flags, caution tape as directed by the Engineer-in-Charge. The barricading provided shall be retained in position at site continuously including shifting of barricading from one location to another location as many times as required during the execution of the entire work till its completion including its maintenance for damages, painting, all incidentals, labour materials, equipments and works required to execute the job. The barricading shall not be removed without prior approval of Engineer-in-Charge.

32. The Contractor shall take adequate protective measures to see that the excavation operations do not damage the adjoining structures or dislocate the services except the services demarked by Engineer-in-Charge for dislocation. Water supply pipes, sluice valve chambers, sewerage pipes, manholes, drainage pipes and chambers, communication cables, power supply cables etc., except the services demarked by Engineer-in-Charge for dislocation, met within the course of excavation shall be properly supported and adequately protected, so that these services remain functional. However, if any service is damaged during excavation shall be restored in reasonable time. Excavation shall not be carried out below the foundation level of the adjacent buildings until underpinning, shoring etc. is done as per the directions of the Engineer-in-Charge.

33. Any damages done by the contractor to any existing work shall be made good by him at his own cost. Existing drains pipes, culverts, overhead wires, water supply lines and similar services encountered during the course of execution, except those which are demarked by Engineer-in-Charge for dislocation, shall be protected against damage by the contractor. The contractor shall not store material or otherwise occupy any part of the site in manner likely to hinder the operations of such services.

34. Detecting underground services (Sewer, Water Supply, etc.) using specialized tools like radio-detection cameras (sondes), ground-penetrating radar (GPR), or electromagnetic (EM) locators to trace pipe paths without digging. The detection shall be done to identify the services (Sewer, Water Supply, etc.) for marking for dislocation of services.

35. Detecting underground cables using an electromagnetic cable locator **(transmitter and receiver)** to trace energized or de-energized lines, or by using Ground Penetrating Radar (GPR) for non-metallic utilities. The detection shall be done to identify the cables for marking for dislocation of services.

36. The manhole covers to be used in the work shall be embossed/engraved with the logo of the department as per the design/drawing provided by the Engineer-in-Charge.

37. The precast RCC element shall be provided with the embossed/engraved batch No./identification Number/Serial Number and date of casting at specified place of the element as approved by Engineer-in-Charge.

38. The contractor shall have to provide the relevant test reports of the precast element and the materials used in the manufacturing of precast elements, as per relevant BIS Codes, corresponding to the batch No./identification Number/Serial Number of the element.

39. Prior to the casting of precast elements, the contractor shall give the time schedule of manufacturing the precast elements in the factory in consultation with the manufacturer in advance. During this time schedule the Engineer-in-Charge or his authorised representative may visit the manufacturing unit to check the manufacturing process, reinforcement, cube casting and other relevant testing.

40. Contractor shall make necessary arrangement for non-destructive testing such as rebound hammer test, ultrasonic pulse velocity test, reinforcement bar locator etc., of precast elements at site as directed by Engineer-in-Charge.

Note:- The cost of above scope of work is including in the estimated cost and nothing extra shall be paid on account of any activity mentioned in the scope of work or anywhere in the NIT.

Guidelines / Procedure for 'e'- procurement.

1. **Payment of cost of Tender documents: -** The collection of cost of Tender documents is dispensed away with, as there is no physical supply of tender documents and also to have absolute anonymity of the bidders participating in e-procurement solution. The bidders can view / download the tender documents, from the **https://govtprocurement.delhi.gov.in.**
2. **Submission of Bids:** The bidders who are desirous of participating in 'e' procurement shall submit their price bids in the standard formats prescribed in the Tender documents, displayed at **https://govtprocurement.delhi.gov.in.** The bidder should upload the scanned copies of all the relevant certificates, documents etc., in the **https://govtprocurement.delhi.gov.in** in support of their price bids. The bidder shall sign on all the statements, documents, certificates, uploaded by him, owning responsibility for their correctness / authenticity.
3. **Payment of Bid Security (Earnest Money Deposit):** The EMD shall be in the form of insurance surety bonds, Account Payee demand draft, fixed deposit receipt, Banker's Cheque or Bank Guarantee of a Commercial Bank issued in favour of **Executive Engineer, M-141(N), PWD, New Delhi.** Copy of the EMD is to be scanned and uploaded along with the Bid.
4. **The physical EMD will be deposited in original with division office of any Executive Engineer PWD, Delhi and any Executive Engineer of CPWD before opening of financial bid otherwise department may reject the bid of concerned agency" This receipt shall also be uploaded to the e-tendering website by the intending bidder upto the specified bid submission date and time.**
5. **Price Bid Opening:** The Price Bids will be opened online by the concerned officer / officers at the specified date & time and the result will be displayed on the **https://govtprocurement.delhi.gov.in.** which can be seen by all the bidders who participated in the tenders.
6. **Processing of Tenders:** The concerned officer/officers will evaluate and process the tenders as done in the conventional tenders and will communicate the decision to the bidder online.
7. **Payment of performance Guarantee:** The bidder shall submit irrevocable performance guarantee of 5% (Five percent) and **Enhanced Performance Guarantee** (In Case of Abnormally Low Bids) Amount Equivalent to the difference between the **25% less amount of ECPT** and Quoted Rate, in addition to **Performance Guarantee of 5%** of the Tendered Value of the Work of the tendered amount in addition to other deposits mentioned else wherein the contract for his proper performance of the contract. This guarantee shall be in the form of insurance surety bonds, Account Payee demand draft, fixed deposit receipt, Banker's Cheque or Bank Guarantee of any Commercial Bank drawn in favour of **Executive Engineer, M-141(N), PWD, New Delhi-110045.**
8. **Participation of Bidders at the time of opening of bids:** Bidders have two options to participate in tendering process at the time of opening of Bids:

(i) Bidders can come at the place of opening of bids (electronically) as done in the conventional tender process.
(ii) Bidders can visualize the process online.

9. **Signing of agreement:** After the award of the contract, an agreement shall be signed as done in Conventional Tenders.

Executive Engineer
Division, South West Road-2, M-141(N), PWD,
Pankha Road, Janakpuri, New Delhi-110045

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)

INSTRUCTIONS TO TENDERERS FOR SUBMISSION OF TENDERS

1. The tenderers should read all the instructions terms & conditions, contract clauses, nomenclature of items, specifications etc. contained in the tender documents very carefully, before quoting the rates. The tenderer should also read the General conditions of contract for **CPWD Construction Works 2023** with upto date correction slips till submission of price bid which will form a part of the Agreement.

2. Tender should be signed and witnessed of tender documents indicating full address of witness and the names of signatories.

3. Tenderer, who propose any alteration in the work specified in this NIT, or in the time allowed for carrying out the work, or in any other condition including conditional rebates, will be summarily rejected.

4. The contractor shall quote his rates keeping in mind the specifications terms & conditions and special conditions etc. and nothing shall be payable extra whatsoever unless otherwise specified.

5. GST & Labour Cess etc. as applicable shall be paid by the contractor himself. The department shall deduct GST, Labour Cess and other statutory taxes/recoveries from the R/A bills as applicable. The contractor shall quote his rates considering all such Taxes.

6. Letter of recommendation for the exemption of Octroi shall be issued by the department on demand. However, the department is not liable to reimburse the Octroi duty in case such exemption certificates are not honoured by the concerned authorities.

7. The tender, which is not duly signed by authorized signatory or is conditional shall be treated as non-responsive and shall be summarily rejected.

C.P.W.D.-6

PUBLIC WORKS DEPARTMENT
NOTICE INVITING TENDER

The Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi -110045. For & on behalf of President of India", invites online Percentage Rate tenders in Two Bid System from eligible contractors enlisted in B & R category with CPWD as well as other (Non-CPWD) experienced contractors who fulfill eligibility criteria for the work:

Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.

The enlistment of the contractors should be valid on the last date of submission of tenders. In case only the last date of submission of tender is extended, the enlistment of contractor should be valid on the original date of submission of tenders. Joint venture is not allowed.

The work is estimated of cost **Rs. 31,15,30,274/-.** This estimate, however, is given merely as a rough guide.

1. Eligibility Criteria:

The Contractors/ agencies who fulfil the following requirements shall be eligible to apply. Joint ventures are not accepted. (Applicable for CPWD enlisted as well as non-CPWD contractors) [1(b), 1(c) & 1(d) are not applicable for CPWD enlisted contractors of appropriate class and category. However, 1(a), 1(e) are applicable for CPWD enlisted contractors also

(a) Should have satisfactorily completed the works as mentioned below during the last seven years ending last day of the month previous to the one in which tenders are invited.

Three similar completed works each costing not less than 40% of the estimated cost put to tender

or

Two similar completed works each costing not less than 60% of the estimated cost put to tender

or

One similar completed work costing not less than 80% of the estimated cost put to tender

Similar work shall mean **"RCC Drains or RCC work in any infrastructure projects"**

In case there are other items of work executed in any infrastructure projects besides RCC work, the value of RCC work executed in the project duly certified by the Client Department shall only be taken as value of the similar work (s).

Note:

(i) In case, the eligible work has been executed by a Joint Venture through one or more individual firm(s), then cost of completed work shall be distributed among the individual firm(s) in proportion to their share in Joint Venture and that will be considered as work experience for individual firm(s) for pre-qualification in bidding.

(ii) The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple interest rate of 7% per annum; calculated from the date of completion to previous day of the last day of submission of tenders.

The work experience certificate should be certified by an officer not below the rank of Executive Engineer/ Project Manager or equivalent.

(b) Should have had Average Annual Financial Turnover of 30% amount of the estimated cost on construction works during the last three year sending 31st March 2025(Scanned copy of Certificate from CA with Unique Document Identification Number (UDIN) to be uploaded). The year in which no turnover is shown would also be considered for working out the average. The value of annual turnover figures shall be brought to the current value by enhancing the actual turnover figures at simple rate of 7% per annum**(Form-A)**.

(c) Profit/Loss: The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheets ending 31st March 2025 (standalone financial statement), duly certified and audited by the Chartered Accountant.) **(Form-A)**

(d) Banker's Certificate from a Commercial Bank or Net worth Certificate:
Should have a Banker's Certificate from a commercial Bank of 40% amount of the estimated cost.

Or

Net Worth certificate from CA with Unique Document Identification Number (UDIN)of minimum 10% amount of ECPT (**Form B-1).**

(e) **Bidding Capacity:**
The bidding capacity of the contractor should be equal to or more than the estimated cost of the work put to tender**.** Bidding capacity shall be worked out by the following formula:
Bidding Capacity = {[AxNx1.5]-B}

Where,
A = Maximum turnover in construction works executed in any one year during the last seven years (i.e. upto 31st March-2025) taking into account the completed as well as works in progress. The value of annual turnover shall be brought to current costing level by enhancing at a simple rate of 7% per annum.
N = Number of years prescribed for completion of work for which bids have been invited.
The value of N shall be taken as 1 (one), where the completion period is less than one year.
B =Value of existing commitments of ongoing works during the period of completion of work for which bids have been invited.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general capacity formula being used for other entities shall be applicable to it for calculation of bidding capacity.

[Newly enlisted entity may like to follow general bidding capacity formula even before period of three years if it so chooses.]

Bidding capacity for newly enlisted entity based on rules 9.6.3 & 9.6.4 enlistment rules 2024 shall be as follows: -
Bidding capacity = {[A'xNx1.5]-B}

Where

A'= Proportionate share of newly enlisted director / partner in originally enlisted company / firm multiplied by the factor A, as given below. Value of A' will be mentioned in the enlistment order by member secretary of Advisory committee for Enlistment Authority, it will remain same for three years.

A = Maximum turnover in civil construction works executed in any one year during the last seven years taking into account the completed as well as works in progress. The value of completed works shall be brought to current costing level by enhancing at a simple rate of 7% per annum. This value is of originally enlisted entity at the time of enlistment of newly enlisted entity.

N = Number of years prescribed for completion of work for which bids have been invited.

B = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity.]

Annual turnover of newly enlisted entity shall be in proportion to the shareholding of partners / directors in the original enlisted entity at the time of enlistment of the newly enlisted entity.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula being used for other entities shall be applicable to it for calculation of bidding capacity. Newly enlisted entity may like to follow general bidding capacity formula even before period of three years, if it so chooses.

Note: The bidder should submit bidding capacity calculation as per Form "C-3".

(f) The bidder should have sufficient number of Technical and Administrative employees for the proper execution of the contract. The bidder shall have to submit a list of these employees stating clearly how these would be involved in this work within 15 days of award of work.

(g) **Evaluation of performance (Applicable for non-CPWD contractors):** Evaluation of the performance of contractors for eligibility shall be done by NIT approving authority or a Committee constituted by him. All the eligible similar works executed and submitted by the bidders in support of eligibility and any one of the ongoing works, may be got inspected by a committee. The marks for the quality shall be given based on this inspection, if inspection is carried out.
Scoring method of evaluation: The scoring for evaluation mentioned in these columns shall be done as given in Proforma. This has been made part of this tender document

2. **An affidavit on non-judicial stamp paper minimum Rs.200/- for condition as below** (f**or Both CPWD and Non-CPWD contractors) : I/We undertake that the work shall be executed with Tool & Plant of following specifications: -**
   (i) Hot Mix Plant installed in NCR (Batch type only), fitted with electronic controls & screens of capacity 100-120 ton (30-40 Cum) per hour having arrangement of mixing of reclaimed materials from cold milled RAP in good working condition. There should be a valid pollution clearance certificate or NOC for running Hot Mix Plant from Central or concerned State Pollution Control Board.

   (ii) Hydrostatic paver finisher fitted with electronic sensor control capable of laying minimum 4 m width and extendable up to 7 m conforming to MoRTH specifications and IRC-27, 2009 in good working condition.

3. The intending bidder must read the terms and condition 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.

4. This information and instructions for bidders posted on website shall form pay of bid document.

5. Bid can only be submitted after deposition of original EMD in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt (FDR), Bankers Cheque or Bank Guarantee (as prescribed from any of the Commercial Bank) drawn in favour of **Executive Engineer, M-141(N), PWD, New Delhi,** and shall be scanned and uploaded to the e-tendering website within the period of bid submission. The original

EMD should be deposited either in the office of Executive Engineer inviting bid or division office of any Executive Engineer of PWD Delhi or any Executive Engineer of CPWD within the period of bid submission. The EMD receiving Executive Engineer shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format **(as per Form-M)** uploaded by tender inviting EE in the NIT. The 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 lakhs, 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 a period of 90 days for single bid works and 180 days for two bid system or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.
The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier. However, in case of two/ three bid system, earnest money deposit of bidders unsuccessful during technical bid evaluation etc. should be returned within 30 days of declaration of result of technical bid evaluation.

6. 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 compiled with and other necessary documents can be seen and downloaded from https://govtprocurement.delhi.gov.in

7. Those contractors who are not registered or have not updated their profile on the website mentioned above, are required to get registered/update their profile beforehand.

8. The intending bidder must have valid Class-III digital signature to submit bid.

9. On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.

10. Contractor can upload documents in the form of JPG format and PDF format.

11. **Certificate of Financial Turn Over:** At the time of submission of bid contractor may uploaded Affidavit/Certificate from **CA** duly issued with UDIN number mentioning Financial Turnover of last 7 years or for the period as specified in the bid document and further details if required may be asked from the contractor after opening of technical bids. There is no need to upload entire voluminous balance sheet.

12. Contractor must ensure to quote rate in the prescribed column(s) meant for quoting rate in figures appears in pink colour and the moment rate is entered; it turns sky blue.

    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).

    However, 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.

13. The Technical Bid shall be opened first on due date and time as mentioned above. The time and date of opening of financial bid of contractors qualifying the technical bid shall be communicated to them at a later

date.

14. Pre- Bid meeting shall be held in the Conference Hall of Chief Engineer, South Zone, PWD, 7th Floor, MSO Building, New Delhi-110002 on dated …NA… at ….NA… PM to clear the doubts of intending tenders, if any. Corrigendum/ modifications issued as a result of pre bid meeting shall be uploaded on https://govtprocurement.delhi.gov.in.

15. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.

16. **Enhanced Performance Guarantee (EPG) in case of abnormally low bids:**
A bid shall be treated as abnormally low if the quoted bid price is more than 25% below the estimated cost put to tender (ECPT) (Suppose the Rate quoted is 30% Below ECPT, then the bid will be considered as Abnormally Low). In cases of abnormally low bid, the bidder shall be required to submit an Enhanced Performance Guarantee (EPG) in addition to the standard Performance Guarantee (PG) as per the following structure**: -**

Percentage Below ECPT	**Additional Enhanced Performance Guarantee to be submitted**
25% or below (Example 30% below)	Amount equivalent to the difference between 25% less the amount of ECPT and the quoted rate. Example ECPT= Rs. 1000.00 Rate Quoted = 30% Below **Additional Enhanced PG = (30%-25%) x 1000.00= 50.00**

17. **The description of the work is as follows:**
"**Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.".**

Intending Bidders are advised to inspect and examine the sites and their 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 sites, 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 on 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 and other factors having a bearing on the execution of the work.

18. 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.

19. 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.

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

21. The contractor **(enlisted or non- enlisted in CPWD)** shall not be **allowed** to **participate** in the tender for work (s) in the PWD (GNCTD) Zone / circle / Division / Sub – Division responsible for award and / or execution of contract (S) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of the **Chief Engineer** and Junior Engineer (both inclusive). He shall also intimae the names of persons who are working or are subsequently employed by him and who are near relatives to any officer **working** in the **CPWD/PWD (GNCTD)**. Any breach of this condition by the contractor would render him liable to be **debarred for a period upto two years from tendering in CPWD/PWD (GNCTD) as decided by the accepting authority mentioned in Schedule F.**

22. No Engineer of Gazette 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 any time 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.

23. During the currency of Work, In case main contractor fails to make the payment to contractor associated by him for specified component(s) within 15 days of receipt of each running account payment then on the written complain of the contractor associated for such specified component(s), the Executive Engineer in charge of concerned component shall serve show cause notice to main contractor and after considering the reply of the same he may make payment directly to the contractor associated for specified component(s) as per terms and conditions of the agreement drawn between main contractor and the associated contractor for the specified component(s).

24. **The bid for the works shall remain open for acceptance for a period of 75 (Seventy-Five) days from the due date of opening of technical bid.**

    Further,

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

    (ii) If any tenderer withdraws his tender 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.

    (iii) Before bid submission period withdrawal of the tender, by the tenderer, shall only be made through e-tender portal. Any other method i.e. through letter / email etc. shall not be considered.

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

25. This Notice Inviting of Tender shall form a part of the contract document. The successful tenderer / contractor, on acceptance of his tender by the accepting authority, shall, within 15 days from the stipulated date of start of the work sign the contract consisting of:-

(a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming 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 i.e., **General Conditions of Contract 2023, Construction Work of CPWD** with amendments up to the date of receipt of tender.

26. **Price Preference to SC/ST individual contractor for item rate/percentage rate tender:**
Price preference in quoted item rate/percentage rate tender shall be applicable to the individual enlisted/non-enlisted SC/ST contractor as under: -

(i) For work(s) upto and equal to an estimated cost of Rs. 2.70 lakh a price preference upto 5% (with reference to the lowest valid tender) may be allowed in favour of individual SC/ST enlisted/non-enlisted contractor. No earnest money is required in such case(s).

(ii) For work(s) beyond an estimated cost of Rs. 2.70 lakh and upto and equal to estimated cost of Rs. 6.20 lakh, the price preference upto 5% (with reference to the lowest valid tender) may be allowed in favour of individual enlisted SC/ST contractor. However, earnest money at a reduced rate of ½% may be accepted in such cases.

The price preference up to 5% (with reference to the lowest valid price bid) may be allowed in favour of individual SC/ST contractor only. The above concession shall be allowed only after verification of the individual contractor's claim of belonging to SC/ST community.

27. Self-attested copies of Tax paid bills of materials which are to be taken in MAS Register shall be submitted by the agencies/ contractors before settling the payments. ln case of any doubt the same can be verified by the field staff. However, onus of genuineness of Tax paid bills rests with the agencies/contractors.

28. The agency shall quote the percentage rate inclusive of all applicable taxes such as GST, Labour Welfare Cess and any other statutory charges etc. as imposed by Government from time to time. Nothing will be reimbursed except for ESI and EPF subscription deposited by agency on production of valid payment receipts**.**

***….To be filled by Executive Engineer.**

Executive Engineer
Division, South West Road-2, M-141(N), PWD,
Pankha Road, Janakpuri, New Delhi-110045

CPWD – 7

GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT

STATE : **GNCTD** ZONE **: SOUTH (M)** CIRCLE **: SOUTH WEST (M)**
BRANCH **: B & R** DIVISION : **SOUTH WEST ROAD-2**

Percentage Rate Tender & Contract for Works

Tender for the work: "Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.".

(i) To be submitted/uploaded at by 3.00PM on **03.06.2026** at **https://govtprocurement.delhi.gov.in.**

(ii) To be opened in the presence of tenderers who may be present at **3.30 PM onward 03.06.2026** in the office of **Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi -110045.**

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 & other documents and Rules referred to in the condition 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, design, drawings and instructions in writing referred to in Rule-I 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 condition so far as applicable.

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

I / We have deposited EMD for the prescribed amount in the office of concerned Executive Engineer as per the bid document.

A copy of earnest money deposit receipt of prescribed amount deposited in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Bankers Cheque or Bank Guarantee (as prescribed) issued by a Commercial Bank, is scanned and uploaded (strike out as the case may be). If I/We fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said President of India or his successors representatives, 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 the successors representatives in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said the 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 and 12.3** of the tender form.

Further I/We agree that in case of forfeit of Earnest Money / 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 works 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 bidding in CPWD/PWD in further 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 there from to any person other than a person to whom I/We am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated _____**_____ Signature of Contractor

Postal Address_____**_____

_____

Witness: ***_____ _____**_____

Address: ***_____ Mobile WhatsApp No./Telegram No_____

Occupation: ***_____ Telephone No._____

Fax _____

E-Mail_____

(**) Mandatory to be filled in by the Contractor
(***) To be filled in by the Witness.

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 letter referred to below shall form part of this agreement: -

a)
b) _____*_____
c)

For & on behalf of the President of India

Signature.....*.....

Executive Engineer
Division, South West Road-2, M-141(N), PWD,
Pankha Road, Janakpuri, New Delhi-110045

Dated .....*.....

(*) To be filled by EE/PWD

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

Evaluation Criteria for CPWD and Non-CPWD Contractors

INITIAL CRITERIA FOR ELGIBILITY AND EVALUATION PARAMETERS FOR CPWD AND NON-CPWD ENLISTED CONTRACTOR

1. INITIAL CRITERIA FOR ELIGIBILITY

The Contractors/ agencies who fulfil the following requirements shall be eligible to apply. Joint ventures are not accepted. **(Applicable for CPWD enlisted as well as non-CPWD contractors)** [1(b), 1(c) & 1(d) are not applicable for CPWD enlisted contractors of appropriate class and category. However, 1(a), 1(e) are applicable for CPWD enlisted contractors also

(a) Should have satisfactorily completed the works as mentioned below during the last seven years ending last day of the month previous to the one in which tenders are invited.

Three similar completed works each costing not less than 40% of the estimated cost put to tender

or

Two similar completed works each costing not less than 60% of the estimated cost put to tender

or

One similar completed work costing not less than 80% of the estimated cost put to tender

Similar work shall mean **"RCC Drains or RCC work in any infrastructure projects"**
In case there are other items of work executed in any infrastructure projects besides RCC work, the value of RCC work executed in the project duly certified by the Client Department shall only be taken as value of the similar work (s).

Note:

(i) In case, the eligible work has been executed by a Joint Venture through one or more individual firm(s), then cost of completed work shall be distributed among the individual firm(s) in proportion to their share in Joint Venture and that will be considered as work experience for individual firm(s) for pre-qualification in bidding.

(ii) The value of executed work shall be brought to current costing level by enhancing the actual value of work at simple interest rate of 7% per annum; calculated from the date of completion to previous day of the last day of submission of tenders.

The work experience certificate should be certified by an officer not below the rank of Executive Engineer /Project Manager or equivalent.

(b) Should have had Average Annual Financial Turnover of30% amount of the estimated cost on constructionworksduringthelastthreeyearsending31stMarch 2025(Scanned copy of Certificate from CA with Unique Document Identification Number (UDIN) to be uploaded). The year in which no turnover is shown would also be considered for working out the average. The value of annual turnoverfiguresshallbebroughttothecurrentvaluebyenhancingtheactualturnoverfiguresatsimplerateof7%perannum) **(Form-A)**.

(c) Profit/Loss: The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheets ending 31st March 2025 (standalone financial statement), duly certified and audited by the Chartered Accountant. **(Form-A)**

(d) Banker's Certificate from a Commercial Bank or Net worth Certificate:
Should have a Banker's Certificate from a commercial Bank of 40% amount of the estimated cost.

Or

Net Worth certificate from CA with Unique Document Identification Number (UDIN)of minimum 10% amount of ECPT (**Form B-1).**

(e) **Bidding Capacity:**

The bidding capacity of the contractor should be equal to or more than the estimated cost of the work put to tender**.** Bidding capacity shall be worked out by the following formula:

Bidding Capacity = {[AxNx1.5]-B}

Where,

A = Maximum turnover in construction works executed in any one year during the last seven years (i.e. upto 31st March-2025)taking into account the completed as well as works in progress. The value of annual turnover shall be brought to current costing level by enhancing at a simple rate of 7% per annum.

N = Number of years prescribed for completion of work for which bids have been invited.

The value of N shall be taken as 1 (one), where the completion period is less than one year.

B =Value of existing commitments of ongoing works during the period of completion of work for which bids have been invited.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general capacity formula being used for other entities shall be applicable to it for calculation of bidding capacity.

[Newly enlisted entity may like to follow general bidding capacity formula even before period of three years if it so chooses.]

Bidding capacity for newly enlisted entity based on rules 9.6.3 & 9.6.4 enlistment rules 2024 shall be as follows: -

Bidding capacity = {[A'xNx1.5]-B}

Where

A'= Proportionate share of newly enlisted director / partner in originally enlisted company / firm multiplied by the factor A, as given below. Value of A' will be mentioned in the enlistment order by member secretary of Advisory committee for Enlistment Authority, it will remain same for three years.

A = Maximum turnover in civil construction works executed in any one year during the last seven years taking into account the completed as well as works in progress. The value of completed works shall be brought to current costing level by enhancing at a simple rate of 7% per annum. This value is of originally enlisted entity at the time of enlistment of newly enlisted entity.

N = Number of years prescribed for completion of work for which bids have been invited.

B = Value of existing commitments and ongoing works to be completed during the period of completion of work for which bids have been invited. This value is for newly enlisted entity.

Annual turnover of newly enlisted entity shall be in proportion to the shareholding of partners / directors in the original enlisted entity at the time of enlistment of the newly enlisted entity.

Within three years from the date of issue of enlistment order, the newly enlisted entity has to develop its own bidding capacity and thereafter the general bidding capacity formula being used for other entities shall be applicable to it for calculation of bidding capacity. Newly enlisted entity may like to follow general bidding capacity formula even before period of three years, if it so chooses.

Note: The bidder should submit bidding capacity calculation as per Form "C-3".

2 **FINANCIAL INFORMATION**

Bidder should furnish the Annual Financial Statement for the last Seven years **(in Form "A"),** Banker's Certificate **(in Form "B")** or Net Worth Certificate **(in Form "B-1").**

3 **EXPERIENCE OFSIMILAR WORKS**

3.1 Bidder should furnish the list of eligible similar nature of works successfully completed and ongoing works during the last seven years **(in Form "C")** and ongoing works as well (**Form C-1**)**.**

3.2 Experience of completing eligible works in prescribed format.

4 **ORGANISATION INFORMATION**

Bidder is required to submit the information in respect of his organization **(in Form 'E").**

5 **LETTER OF TRANSMITTAL**

The bidder should submit the letter of transmittal attached with the document.

6 **OPENING OF THE FINANCIAL BID AND ITS VALIDITY**

After evaluation of eligibility bid, a list of agencies qualified in the evaluation will be prepared. Thereafter, the financial bids of only the qualified and technically acceptable bidders shall be opened at the notified time, date and place in the presence of the qualified bidders or their representatives.

7 **AWARD CRITERIA**

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

(a) Amend the scope of work and value of contract.

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

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

Forms (A to N)

FORM-A

FINANCIAL INFORMATION

1. Financial Analysis- Details to be Furnished, Duly Supported by Figures in Balance Sheet/Profit and Loss Account for the Last Seven Years, Duly Certified by the Chartered Accountant as Submitted by the Applicant to the Income-Tax Department (Copies to be Attached).

Fig. in lakhs Rs.

Sl. No.	Particulars	Financial Year						
		2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
1	Gross Annual Turnover on Construction Works							
2	Profit/loss							

2. Financial Arrangements for Carrying Out the Proposed Work

"Unique Document Identification Number (UDIN)…….

Signature of Chartered Accountant with seal ……..……
Name of Chartered Accountant……..……
Membership No. of ICAI
Date and Seal

Signature of Bidder(s)

FORM - B

BANKER'S CERTIFICATE FROM A COMMERCIAL BANK

This is to certify that to the best of our knowledge and information, M/s./Sh …….....having marginally noted address,….as a customer of our bank are /is respectable and can be treated as good for any engagement upto a limit of Rs …… …… …… …. (Rupees …… …… … … … … … … … … … … … … … … …… … … … … … … …… … … … ..)
This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

(Signature) For the Bank

NOTE

1. Banker's certificates should be on the letterhead of the Bank, addressed to the tendering authority.
2. In the case of a partnership firm, certificates should include the names of all partners as recorded with the Bank.
3. The banker's certificate should be valid for Six Months or more from the last date of receipt of tender.

Or

FORM "B-1"

FORM FOR CERTIFICATE OF NET WORTH FROM CHARTERED ACCOUNTANT

It is to certify that as per the audited balance sheet and profit & loss account during the financial year.....,the Net Worth of M/s……..……(Name & Registered Address of individual/ firm/ company), as on……..…….(the relevant date) is Rs.……after considering all liabilities. It is further certified that then Net Worth of the company has not eroded by more than 30% in the last three years ending on (the relevant date).

"Unique Document Identification Number (UDIN)…….

Signature of Chartered Accountant……..……
Name of Chartered Accountant……..……
Membership No. of ICAI
Date and Seal

FORM -C

DETAILS OF ELIGIBLE SIMILAR NATURE OF WORKS COMPLETED DURING THE LAST SEVEN YEARS ENDING LAST DAY OF THE MONTH PREVIOUS TO THE ONE IN WHICH TENDERS ARE INVITED.
(Applicable for CPWD as well as non-CPWD Contractors)

S. No.	Name of work/ Project and location	Owner or sponsoring organization	Cost of work in crores of rupees	Date of commencement as per contract	Stipulated date of completion	Actual date of completion	Litigation/ Arbitration Cases pending/ in progress with details*	Name and address/telephone number of the officer to whom reference may be made	Whether the work was done on back-to-back basis Yes/No
1	2	3	4	5	6	7	8	9	10
1									
2									
3									

* Indicate the gross amount claimed and amount awarded by the Arbitration Tribunal.

Signature of Bidder(s)

FORM 'C'-1

PROJECTS UNDER EXECUTION
(Applicable for CPWD as well as non-CPWD Contractors)

S. No.	Name of work/ Project and location	Owner or sponsoring organization	Cost of work in crores of rupees	Date of commencement as per contract	Stipulated date of completion	Upto date percentage progress of work	Slow progress if any and reasons thereof	Name and address/telephone number of officers to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10
1									
2									
3									

Signature of Bidder(s)

FORM 'C'-2

For Calculation of bidding capacity
(Information required to evaluate the Bidding Capacity)
(Applicable for CPWD as well as non-CPWD Contractors)

To calculate the value of "A"

A table containing value of construction works undertaken by the Bidder during the last 7 years is as follows:

Sl. No.	FY	Value of construction Works undertaken (in Rs. Crore)	Updation Factor	Gross value after considering updation factor (Rs. in Crore)
(1)	(2)	(3)	(4)	**(5)** = (3) X (4)
1	2024-25			
2	2023-24			
3	2022-23			
4	2021-22			
5	2020-21			
6	2019-20			
7	2018-19			

A=
Maximum of above Column 5

Updating Factor = Factor for consideration of enhancement @7% per annum; (non-compounded) till 31.03.2025

Signature of Bidder(s)

FORM 'C'-3

Calculation of bidding capacity

Details of existing commitments and ongoing works.

(Applicable for non-CPWD Contractors)

Sr. No.	Name of work/ Project and location	Owner or sponsoring organization	Contract value in crore of rupees	Date of commencement as per contract	Stipulated date of completion	Up to date percentage progress of work	Remaining work in percentage (100-column 7)	Existing commitment Column 4 x Column 8/100	Name and address/ telephone number of offices to whom reference may be made	Remarks
1	2	3	4	5	6	7	8	9	10	11

Total (B) =

Maximum turnover in last seven year = Rs……..

Updated value of turnover (A) = Rs……..

No. of years (N) = ……..

Multiplier Factor (M) = 1.5

Bidding Capacity={[AxNxM]-B} =

Certificate:

I certify that all the awarded and ongoing works have been included in the above list.

Maximum gross value of projects after considering updation factor that have been undertaken during the F.Y._____ out of the last 7 years is Rs. _____ Crore (Rupees_____). (This will be considered as value of A while evaluating the bidding capacity).

It is to certify that above is the total list of work under progress and information furnished is true and nothing has been hidden out. Further that, if such a violation comes for hiding any information or providing incorrect information comes to the notice of Department, then I/We shall be debarred for bidding in PWD Delhi **for minimum 2 years**. Besides this, the matter may also be reported to CPWD enlisting authority in case of CPWD registered contractors for taking appropriate action in the matter.

The statement showing the value of all existing commitments, anticipated value of work to be completed in the period of construction of the project for which bid is invited and ongoing works as well as the stipulated period of completion remaining for each of the works mentioned above is verified from the certificate issued that has been countersigned by the Client or its Engineer-in-Charge not below the rank of Executive Engineer or equivalent in respect all projects. No awarded / ongoing works has been left in the aforesaid statement which has been awarded to M/s.....individually / and other member(s) M/s....., M/s..... (if applicable), as on bid due date of this NIT

(Signature of Bidder(s))

FORM "D"

PERFORMANCE REPORT OF WORKS REFERRED TO IN FORM "C"

1.	Name of Work/Project & Location	
2.	Agency	
3.	Agreement No.	
4.	Estimated Cost	
5.	Tendered Cost	
6.	Actual Cost	
7.	Value of RCC Work	
8.	Date of Start	
9.	Date of Completion	
	(i) Stipulated date of completion	
	(ii) Actual date of completion	
10	Amount of compensation levied for delayed completion, if any	
(a)	Whether case of levy of compensation for delay has been decided or not - Yes/No	
(b)	If decided, amount of compensation levied for delayed completion, if any	
11.	Amount of reduced rate items, if any	
12.	Performance Report	
	(i) Quality of Work	Outstanding/ Very Good / Good / Poor
	(ii) Financial Soundness	Outstanding/ Very Good / Good / Poor
	(iii) Technical Proficiency	Outstanding/ Very Good / Good / Poor
	(iv) Resourcefulness	Outstanding/ Very Good / Good / Poor
	(v) General Behaviour	Outstanding/ Very Good / Good / Poor
13.	Details of arbitration / court cases if any including amount of claim amount of award and present position.	

Dated: Executive Engineer or Equivalent

FORM "E"

STRUCTURE & ORGANISATION

S. No.	Particulars	Remarks
1.	Name & address of the bidder	
2.	Telephone no./ Telex no./Fax no.	
3.	Legal status of the bidder (Scan & upload copies of original document defining the legal status) (a) An individual (b) A proprietary firm (c) A firm in partnership (d) A limited Company or Corporation	
4.	Particulars of registration with various Government Bodies (Scan & upload attested photocopy)	Organization/Place of registration and Registration No
5.	Names and titles of Directors & Officers with designation to be concerned with this work.	
6.	Designation of individuals authorized to act for the organization.	
7.	Has the bidder, or any constituent partner in case of partnership firm, limited company/Joint Venture, ever been convicted by the court of Law? If so, give details	
8.	In which field of Civil Engineering construction, the bidder has specialization and interest?	
9.	Any other information considered necessary but not included above.	

Signature of Bidder(s)

Form-F

Affidavit for Debarment/ Blacklisting
(Undertaking on ₹200 Non-Judicial Stamp Paper)

Name of work: Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.

NIT No: **13/CE/South/PWD/2026-27/ (1 2 /EE/SWR-II/PWD/2026-27)**

I/We undertake and confirm that I am not debarred/blacklisted as on the date of bidding from any unit of PWD Delhi/CPWD to participate in the tendering. Further, if such a violation comes to the notice of the Department, then I/we shall be debarred from bidding in PWD Delhi/CPWD in the future forever. Also, if such a violation comes to the notice of the Department later, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

It is also undertaken that if I/we am/are debarred from CPWD/PWD Delhi till the last date of receipt of the tender after bidding (if the bid is submitted before the last date of receipt of the tender), my tender shall be rejected.

Date:

Signature of Agency

Form-H

AFFIDAVIT OF NON-COMPLIANCE AND BLACKLISTING
(Undertaking on Rs. 200 Non-Judicial Stamp Paper)

I, do hereby solemnly affirm and state as follows:

1. That I am the [Designation] of [Your Company Name], and I am duly authorized to file this affidavit on behalf of the company.
2. That the Agency [Agency Name], located at [Agency Address], going to participate in (NIT no……) [Project Name/Contract Number] under the supervision of the Engineer-in-Charge, [Engineer-in-Charge Name and address].
3. That the Agency [Agency Name] has failed to comply with the instructions issued by the Engineer-in-Charge, as per the agreement and scope of work. The details of non-compliance are as follows:
    - Failure to meet project deadlines
    - Poor quality of work
    - Delay in submission of reports
    - Failure to follow specifications outlined in the contract
    - Non-communication with the Engineer-in-Charge
4. Not compliance of any point mentioned in point no 3, Engineer-in-Charge's having full rights to process for blacklisting agency from PWD.

I, therefore, affirm that this affidavit is true and correct to the best of my knowledge and belief.

Dated: [Insert Date]
Place: [Insert Place]

Signature: _____
Name: [Your Full Name]
Designation: [Your Designation]
Company Name: [Your Company Name]

Form-I

AFFIDAVIT FOR ANY MISHAPPENING
(Undertaking on Rs. 200 Non-Judicial Stamp Paper)

I, do hereby solemnly affirm and state as follows:

1. That I am the [Designation] of [Your Company Name], and I am duly authorized to file this affidavit on behalf of the company.

2. That the Agency [Agency Name], located at [Agency Address], going to participate in (NIT no……) [Project Name/Contract Number] under the supervision of the Engineer-in-Charge, [Engineer-in-Charge Name and address].

3. That the Agency [Agency Name] has fully responsible for following:

   Agency will be responsible for any injury, partial or permanent, or death at the site due to accidents, malfunctioning of the equipment, or negligence of the staff.
   Agency will be responsible in case of accident due to flooding/water logging or fall in drain and negligence of safety measures.

4. Not compliance of any point mentioned in point no 3, Engineer-in-Charge's having full rights to process for blacklisting agency from PWD.

I, therefore, affirm that this affidavit is true and correct to the best of my knowledge and belief.

Dated: [Insert Date]
Place: [Insert Place]

Signature: _____
Name: [Your Full Name]
Designation: [Your Designation]
Company Name: [Your Company Name]

Form-J

UNDERTAKING FOR SITE INSPECTION
(Undertaking on Rs. 200 Non-Judicial Stamp Paper)

To,

Executive Engineer
Division, South West Road-2, M-141(N), PWD,
Pankha Road, Janakpuri,
New Delhi-110045

Name of Work: **Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.**

NIT No. **13/CE/South/PWD/2026-27/ (1 2 /EE/SWR-II/PWD/2026-27)**

I/we have inspected and examined the site and its surroundings; and is / are satisfied before submitting our bid as to the form and nature of the site, the means of access to the site, the accommodation I/we may require and in general shall myself / ourselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect our bid. I/we shall be deemed to have full knowledge of the site whether I/we inspect it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. I/we shall be responsible for arranging and maintaining at our own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents.

Submission of a bid by me/ us implies(s) that I/we have read this notice and all other contract documents and has made myself / ourself 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 us by the Government and local conditions and other factors having a bearing on the execution of the work.

Place :

Date :

Yours faithfully

(Signatures of Bidder(s))

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

Form-K

LETTER OF TRANSMITTAL

To,

Executive Engineer
Division, South West Road-2, M-141(N), PWD,
Pankha Road, Janakpuri,
New Delhi-110045

Name of Work:-Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.

Sir,

Having examined the details given in the bid document for the above work, I / We hereby submit the relevant information.

1. I / We hereby certify that all the statements made and information supplied in the enclosed forms **A** to **N** and accompanying statement are true and correct.
2. I / We have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
3. I/We also undertake to the **Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi -110045** to have the authority to approach individuals, employers, firms, and corporations to verify our competence and general reputation, as well as to inspect the work as deemed necessary.
4. I / We submit the following certificates in support of our suitability, technical knowledge and capability for having successfully completed the following eligible similar works :

Sr. No.	Name of Work	Certificate From

Certificate: It is certified that the information given in the enclosed eligibility bid are correct. It is also certified that I/we shall be liable to be debarred, disqualified/ cancellation of enlistment in case any information furnished by me/us found to be incorrect.

Enclosures:
Seal of bidder
Date of submission

SIGNATURE(S) OF BIDDER(S)

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)

Form-L

Affidavit for work done on Back-to-Back basis
(Undertaking on ₹200 Non-Judicial Stamp Paper)

Name of work: Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.

NIT No: **13/CE/South/PWD/2026-27/ (1 2 /EE/SWR-II/PWD/2026-27)**

I/We undertake and confirm that eligible similar work(s) has/have not been executed through another contractor on a back-to-back basis. Further, if such a violation comes to the notice of the Department, then I/we shall be debarred from bidding in PWD Delhi/CPWD in the future forever. Also, if such a violation comes to the notice of the Department before the date of the start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/Performance Guarantee.

Date: **Signature of Agency**

Form-M

Receipt of deposition of original EMD

Receipt No.		date:-
1.	Name of work:-	**Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.**
2.	NIT No. :-	**13/CE/South/PWD/2026-27** **1 2 /EE/SWR-II/PWD/2026-27**
3.	Estimated Cost:-	**Rs. 31,15,30,274/-**
4.	Amount of Earnest Money Deposit:-	**Rs. 41,15,303/-**
5.	Last date and time of submission of bid:-	**03.06.2026 upto 3.00 P.M.**
6.	Name of Contractor:-	
7.	Form of EMD:-	
8.	Amount of earnest Money Deposit:-	
9.	Date of submission of EMD:-	

*

*** To be filled by EE (SWR-2)**

Signature, Name and Designation of EMD receiving officer (EE/AE(P)/AAO) along with official stamp

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

FORM - N

UNDERTAKING REGARDING GST REGISTRATION
(on letterhead of bidder with stamp)

To.

Executive Engineer
Division, South West Road-2, M-141(N), PWD,
Pankha Road, Janakpuri,
New Delhi-110045

Name of Work:-**Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.**

NIT No.:- 13/CE/South/PWD/2026-27/ (1 2 /EE/SWR-II/PWD/2026-27)

Sir,

Having examined the details given in press notice and bid document for the above works,

I/ We hereby submit the following. "If work is awarded to me / us, I / We shall obtain GST registration certificate as applicable within one month from the date of receipt of the award letter or before release of any payment by CPWD, whichever is earlier, failing which I/We shall be responsible for any delay in payments which will be due towards me/us on a/c of the work executed and/or for any action taken by CPWD of GST department in this regard.

Seal of bidder.

Date of submission

Signature (s) of Bidder(s)

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

FORMAT FOR VARIOUS GUARANTEE BONDS & AFFIDAVIT TO INCREASE OF VALIDITY OF BANK GUARANTEE

FORMAT 1

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

On non-Judicial stamp paper of minimum Rs. 200

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

1. Whereas the Executive Engineer …… (name of division) …….., PWD on behalf of the President of India (hereinafter called "The Government")has invited bid 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) ……., PWD 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/Enhanced 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 here by 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.

   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.

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.

This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.

We, ……. (indicate the name of the Bank) ……., undertake not to revoke this guarantee except with the consent of the Government in writing.

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 ..... Authorized signatory
   Name and address Name
   Designation
   Staff code no.

2. Signature ..... Bank seal
   Name and address

Note:

1. *Date to be worked out on the basis of validity period of 90 days where only financial bids are invited and 180 days for two/three bid system from the date of submission of tender.

2. **In paragraph 1, strike out the portion not applicable. Bank Guarantee will be made either for earnest money or for performance guarantee/enhanced performance guarantee security deposit/mobilization advance, as the case may be. (Added vide OM No. DG/CON/ 311 dated 20.10.2020)

FORMAT -2

FORMAT OF AFFIDAVIT FOR INCREASE OF VALIDITY OF BANK GUARNTEE
(Non – Judicial Stamp paper of Rs. 200/-)
The affidavit is to be given by the executants before a First-Class Magistrate.

I/We have submitted a bank guarantee for the work----------(Name of work),

Agreement No……..……, dated……,From ……(Name of bank with full address)

To the Executive Engineer…….(Name of division)

With a view to seek exemption from payment of security deposit /Performance guarantee /guarantee money for expansion joint /Electrometric bearing /bitumen mastic work in cash. This bank guarantee expires on……

I/We undertake to keep the validity of the bank guarantee intact by getting it extended from time to time at my/our own initiative up to a period of ……. months after the recorded date of completion of the work or as directed by the Engineer-in-charge.

I/We also indemnify the government against any losses arising out of…… non-encashment of the bank guarantee, if any.

Deponent Signature of contractor

FORMAT -3

TRI PARTY GUARANTEE TO BE EXECUTED BY CONTRACTOR AND MANUFACTURER FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF PRECAST DRAIN WORKS

On Non India Judicial Stamp Papers of Rs. 200/-

The Agreement made this …… day of …….. Two Thousand Twenty Six between ……. (Details of Contractor) (hereinafter called the 1ST Guarantor of the one part),…….. (details of Manufacturer of Precast RCC elements) (hereinafter called the 2nd Guarantor on the 2nd Part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part).

WHEREAS THIS agreement is supplementary to a contract (hereinafter called the Contract), dated …….. and made between the FIRST GUARANTOR OF THE ONE PART, SECOND GUARANTOR OF THE SECOND PART and the Government of the other part, whereby the Ist Guarantor along with the 2nd Guarantor, inter alias, undertook to render the PRECAST DRAIN WORK surfaces in the said contract completely crack-proof and impermeable without showing separation of construction joints and losing desired hardness.

NOW THE Ist and 2nd GUARANTOR hereby guarantees that PRECAST DRAIN WORK carried out by them collectively will render the Drain surface completely crack proof and impermeable and shall be defect free for **Ten years** to be reckoned from the date of record of completion certificate for the work. In case of any structural crack in the drains, whole precast elements will be changed and for non-structural cracks, the drain will be repaired suitably as per direction of Engineer in charge.

Now the Ist guarantor agrees to withheld additional security deposit amounting to 2.5% of cost of the precast drain work from the R.A. & Final bills. The withheld amount of 1.5% would be released after Five years from the date of completion of whole work under the agreement and 1% after Ten Years from the date of completion of whole work under the agreement, if the performance of the work done is found satisfactory. The 2nd Guarantor agrees to deposit the Quotient money at the rate of 1% of tendered amount which shall be released after 10 years of completion of guarantee period under the Tri Party agreement, if the performance of the work done is found satisfactory.

The decision of the Engineer-in-Charge with regard to cause of crack formation, permeability, loss of hardness, separation of construction joints shall be final.

During this period of guarantee, the Ist guarantor shall make good all defects mentioned above by Re-Executing the PRECAST DRAIN WORK after removing the defective portion over the affected area for structural defects, as per specifications of agreement or repairing of the existing defective surface for Non-structural defects as per direction of Engineer-in-Charge. In case of any defect being found, render the rectification as described above, to the satisfaction of the Engineer-in-Charge, the Ist GUARANTOR and 2nd GUARANTOR shall commence the work for such rectification within seven days from the date of issue of notice by the Engineer-in-Charge calling upon them to rectify the defects, failing which the work shall be got done by the DEPARTMENT through some other contractor at the Ist and 2nd GUARANTOR'S risk and cost. The decision of the Engineer-in-Charge as to the cost payable by the Ist and 2nd Guarantor shall be final and binding.

During this period of guarantee, the 2nd Guarantor undertake to supply the required quantity of precast element and also undertake to support the Ist Guarantor technically.

Drawing this agreement by the 2nd Guarantor does not take away the responsibility and liability of the Ist Guarantor during this guarantee period.

That if the Ist and 2nd Guarantor commits breach there under, then the Ist Guarantor will indemnify the Principal and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the Ist and 2nd GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and / or damage and / or cost incurred by the Government, the decision of the Engineer-in-Charge will be final and binding on the parties.

That in case of breach of this supplementary agreement by the 2nd Guarantor, the Quotient money deposited by the 2nd Guarantor shall be forfeited entirely by the government.

IN WITNESS WHEREOF these presents have been executed by the Obligor ……..……, (Ist Guarantor),……. (2nd Guarantor) and by **Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi -110045** for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

Signed, sealed and delivered by Obligor in the presence of:

1.
2.

1st GUARANTOR

2nd GUARANTOR

Signed for and on behalf of PRESIDENT OF INDIA by **Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi -110045**, in the presence of:

1.
2.

EXECUTIVE ENGINEER

*** To be filled by the Executive Engineer.*

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

PROFORMA OF SCHEDULES

SCHEDULES

Schedule 'A'	
Schedule of Quantities	**Page No 157 to 166**

SCHEDULE 'D'	
Extra schedule for specific requirements/documents for the work, if any.	As attached in tender form

SCHEDULE 'E'	
Reference to General conditions of contract: -	**CPWD form-7, GCC-2023 for Construction works as amended/ modified** and corrected by DG, CPWD up to previous day of last date of submission of tender **including extension, if any** and as further amended by PWD secretariat, GNCTD office Memorandum issued vide No. Pr. CE (M&F)/E in C(PWD)/7111/dspwd2/49-52 dt 10/01/2024 and further modified and corrected by PWD secretariat, GNCTD, up to previous day of last date of submission of tender **including extension, if any.**

Name of Work:	**Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.**	
i)	Estimated cost of work	**Rs. 31,15,30,274/-**
ii)	Earnest Money	**Rs. 41,15,303/- (to be returned after receiving performance guarantee)**
iii)	Performance Guarantee	**5% of Tendered Amount + EPG**
iv)	Security Deposit	**2.5% of the tendered value of the work + Additional Security Deposit @ 5% of cost of precast drain work.**
v)	Enhanced Performance Guarantee in case of abnormally low bids	**Amount equivalent to the difference between 25% less amount of ECPT and quoted rate** (as per Circular no. **F.dspwd-2/CD057801602/1641-1647 issued by the Deputy Secretary PWD, PWD Secretariat dated 14.08.2025**)

SCHEDULE 'F'

GENERAL RULES AND DIRECTIONS:

Officer Inviting Tender	**Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi**

Definitions:

2 (v)	Engineer-in-Charge	**Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi -110045 or successor thereof**
2(viii)	Accepting Authority	**As per Financial powers delegated in CPWD Works Manual SOP 2024.**
2(x)	Percentage on cost of materials and labour to cover all overheads and profits.	**15% Over Head charges and Contractor Profit** on analysis of rates as per CPWD Delhi Analysis of Rates (DAR)
2(xi)	Standard Schedule of Rates	**DSR-2023/Market rates**
2(xii)	Department	**PWD (GNCTD)**
9(ii)	Standard CPWD contract Form	**Form 7 of General Conditions of Contract Construction Works-2023 CPWD (modified and corrected** up to previous day of last date of submission of tender **including extension, if any)**

Clause 1

i)	Time allowed for submission of Performance Guarantee as well as Enhanced Performance Guarantee, Program 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	**7 days**
ii)	Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above	**3 Days**

Clause 2

Authority for fixing compensation under clause 2.	**Superintending Engineer South West Maintenance Circle, PWD or successor thereof**

Clause 2A

Whether Clause 2A shall be applicable	**Not Applicable**

Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start Mile stone(s) as per table given below	**10 Days**

MILE STONE

MILE STONE(s) OF THE CONTRACT

Sl. No.	Description of Milestone (Financial/ physical progress) (% or in Rs)	Time Allowed in days (from date of start)	Amount to be with held in case of non achievement of mile stone
1.	Submission of MoU and Programme Chart	20 days	0.50% of tendered value.
2	1/4th of whole work	1/4th of stipulated period	1.10% of tendered value.
3	11/20th of whole work	1/2nd of stipulated period	1.10% of tendered value.
4	9/10th of whole work	3/4th of stipulated period	1.10% of tendered value.
5	100% completion of all work in all respect	Full stipulated period	1.20% of tendered value.

Schedule of handing over of sites

Part	Portion of site	Description	Time period for handing over reckoned from date of issue of letter of intent.
Part-A	Portion without any hindrance	Site is available	-----
Part-B	Portions with encumbrances	----	----
Part-C	Portions dependent on work of other agencies	----	----

Time allowed for execution of work	07 (Seven) Months
Authority to convey the decision of shifting of milestone and extension of time.	**Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi -110045 or successor thereof**
Authority to decide rescheduling of mile stones and extension of time.	**Superintending Engineer, South West Maint. Circle, (PWD) New Delhi or successor thereof**
Shifting of date of start in case of delay in handing over of site	**Superintending Engineer, South West Maint. Circle, (PWD) New Delhi or successor thereof**

Clause 5A

Whether Clause 5A shall be applicable	**Not Applicable**

Clause 6

Computerized Measurement Book (CMB)/ Electronic Measurement Book (EMB) Mode of Measurement	**CMB**

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. 5.00 crore**

Clause 7A

Whether Clause 7A shall be applicable	**Applicable** No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO and ESIC, whatever applicable are submitted by the contractor to the Engineer-in-charge.

Clause 8: Authority for issuance of completion certificate. - Chief Engineer, South (M)

Clause 8A

Authority to decide compensation on account if contractor fails to submit completion plans	**Executive Engineer, Division South West Road-2, M-141(N), PWD, New Delhi -110045**

Clause 10A

List of testing equipment to be provided by the contractor at site lab.	**As per requirement of work and direction of Engineer-in- Charge**

Clause 10B

Whether Clause 10 B shall be applicable	**Not applicable**

Clause 10 C	**Applicable**
Component of labour expressed as percent of value of work.	**5%**
Clause 10 CC	**Not Applicable**

Clause 11

Specifications to be followed for execution of work	(i) CPWD Specifications 2019 vol. I& II with upto date correction slips, general conditions, additional and particular specifications attached in tender documents (ii) MORTH specification for Road & Bridge work (Fifth revision 2013). (iii) Manual of Storm Water Drainage System 2019 as amended up to date of MoHUA (iv) Relevant BIS codes (IS:456-2000, IS:1893, IS:875, IS: 10262 etc.) as applicable, as amended up to date.

Clause 12

12 (Completion Cost)	**The completion cost shall, in no case, exceed 1.25 times the contract amount (as per circular No. Pr. CE(M&F)/ E-in-C(PWD) /7111/ dspwd2/49-52 Dated: 10.01.2024 of PWD Secretariat, New Delhi).**
12.2(a) (Non-Schedule Extra Item)	**No Non-schedule items shall be allowed to be executed as an extra item (as per circular No. Pr. CE(M&F)/ E-in-C(PWD) /7111/ dspwd2/49-52 Dated: 10.01.2024 of PWD Secretariat, New Delhi).**
12.2(b) (Scheduled Extra Item)	**For percentage rate tenders, the extra item(s) shall be paid as per the Standard Schedule of Rates, mentioned in Schedule F, enhanced or reduced by the applicable cost index and further enhanced or reduced by percentage above/ below quoted rate by the contractor on estimated cost put to tender.**
12.2 (c) Deviation limit beyond which clauses 12.2(c) shall apply for all items of the work	**100%**

Clause 16

Competent Authority for deciding reduced rates.	**1. Superintending Engineer, South West Maint. Circle, PWD (GNCTD) (upto 5% of contract value).**
	2. with the Approval of ADG/SDG (Beyond 5% of contract value)

Clause-18

List of machinery, tools & plants to be deployed by the contractor at site	**As per site requirement**

Clause 19	The contractor shall obtain a valid license under the Contract Labour (R&A) Act, 1970 and the Contract Labour (Regulation and Abolition) Central Rules, 1971 before the commencement of the work and continue to have a valid license until the completion of the work. **The contractor shall be also comply with provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979.**	
Clause 19C	Authority to decide for each default	Engineer-in-Charge
Clause 19D	Authority to decide for each default	Engineer-in-Charge
Clause 19G	Authority to decide for each default	Engineer-in-Charge
Clause 19K	Compensation for not deploying qualified tradesmen	Rs. 1000/- per trade man per day
Authority to decide penalty for each default		Executive Engineer (C)

Clause-25	Deleted (Any dispute arising between the parties to this agreement/contract shall be subject to the exclusive jurisdiction of Courts in Delhi only)

Clause 32

Sr. No.	Designation of Technical Staff	Qualification	No.	Minimum Experience (Years)	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 32 (i)
					Figures
1	Project Manager	Graduate Engineer	1	20 (and having experience of one similar nature of work)	Rs. 60,000/- per month
2	Deputy Project Manager	Graduate Engineer	1	12 (and having experience of one similar nature of work)	Rs. 40,000/- per month per person
3	Project/Site Engineer	Graduate Engineer/ Diploma Engineer	2	5 /10 respectively	Rs. 25,000/- per month per person
4	Project Planning/Quality / Billing Engineer.	Graduate Engineer/ Diploma Engineer	2	2/5 respectively	Rs. 15,000/- per month per person

Assistant Engineer (Civil) retired from Government service that are holding Diploma will be treated at par with Graduate Engineers.

Diploma holder with minimum 10 years 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 the requirement of degree engineers.

Clause 38			
		Schedule/ statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2023 printed by CPWD	**D.S.R. 2023 for Civil Work with correction slips up to last date of submission of tender including extension, if any**
		Variations permissible on theoretical quantities	
		Cement	
		For works with estimated cost put to tender not more than 25 lakhs.	**3% plus/minus**

		For works with estimated cost put to Tender is more than 25 lakhs.	**2% plus/minus**
		Bitumen all works	**2.5% plus only & nil on minus side**
		Steel reinforcement and structural steel Sections for diameter, section and category.	**2% plus/minus.**
		All other materials	**Nil**

Provision of Independent External Monitors

Threshold value (Estimated cost put to tender) at and above which Integrity Pact would be applicable	**10 Crore**

Particulars of Independent External Monitors appointed by CVC:

S. No.	Name of IEM	Address
1	Shri Vinayak Rao Turga (IOFS – Retired)	Turga House, Anne Baburao Colony Penamaluru, Vijaywada, Andhra Pradesh Mob:- 9007723414 email: tvrao56@gmai.com
2	Dr. Ravindra Kumar Srivastava (IAS - Retired)	A6 Anand Niketan, New Delhi-110021 Mobile: 9999985440 email: srivastava.rks@gmail.com
3	Shri Vijay Kumar Singh Principal Chief Conservator of Forest HAG (Retired)	Flat no. 502, Tower 29, Lotus Boulevard, Sector-100, Noida (U.P) - 201304 Mobile: 9717581113 email: ksingh_vijay@yahoo.com

Price Preference to SC/ST individual contractor is valid up to	Not applicable

Executive Engineer
Division, South West Road-2, M-141(N), PWD,
Pankha Road, Janakpuri,
New Delhi-110045

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL------- AE/SWR-25 EE/SWR-2 AE (P) EE (P)

INTEGRITY PACT	PWD

To,
All the bidders

Subject: NIT No. 13/CE/South/PWD/2026-27 for the work "Construction of RCC Precast drain from Bijwasan Flyover to Najafgarh drain on Najafgarh Bijwasan Road (ID: 1173) under Sub Division-25, Division-SWR-II, PWD, New Delhi."

Dear Sir,

It is here by declared that PWD, GNCT of Delhi is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the Integrity Agreement, which is an integral part of tender/bid documents, failing which the tenderer/bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the PWD, GNCTD.

Yours faithfully

Executive Engineer

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

INTEGRITY PACT CPWD

To,

Executive Engineer,
----------,

Sub:- Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.

Dear Sir,

I/We acknowledge that CPWD is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which I/We will stand disqualified from the tendering process. I/We acknowledge that THE MAKING OF THE BID SHALL BE REGARDED AS AN UNCONDITIONAL AND ABSOLUTE ACCEPTANCE of this condition of the NIT.

I /We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by CPWD. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article I of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/bid, CPWD shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid is accordance with terms and conditions of the tender/bid.

Yours faithfully

(Duly authorized signatory of the Bidder)

INTEGRITY PACT CPWD

To be signed by the bidder and same signatory competent/authorized to sign the relevant contract on behalf of CPWD.

INTEGRITY AGREEMENT

This Integrity Agreement is made at ---------- on this --------- day of ----------20--------

BETWEEN

President of India represented through Executive Engineer ----------
(Name of Division)
PWD, ---------- , (Hereinafter referred as the
(Address of Division)
'Principal /Owner', which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

(Name and Address of the Individual /firm/Company)

Through ---------- (Hereinafter referred to as the
(Details of duly authorized signatory)
"Bidder/Contractor" and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns).

Preamble

WHEREAS the Principal /Owner has floated the Tender (NIT No. **13/CE/South/PWD/2026-27**) (hereinafter referred to as "**Tender/Bid")** and intends to award, under laid down organizational procedure, contract for ----------
----
(Name of work)
hereinafter referred to as the "**Contract"**

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

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

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

Articles

Article-1: Commitments of the Principal

(1) The principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

(a) No employee of the principal, personally or through any of his/her family members, will in connection with the Tender for, or the execution of a Contract, demand, take a promise for or accept, for self, or third person, any material of immaterial benefit which the person is not legally entitled to.

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

(c) The principal shall endeavor to exclude from the tender process any person, whose conduct in the past has been of biased nature.

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

Article–2: Commitments of the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s).

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

2. The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

(a) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not, directly or through any other person or firm, offer, promise or give to any of the principal' employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

(b) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contract, submission or non-submission or bids or any other actions to restrict competitiveness or to cartelize in the bidding process.

(c) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) will not commit any offence under the relevant IPC/PC Act and other Statutory Acts; further the Bidder(s)/Contractor(s)/ Concessionaire(s)/Consultant(s) will not use improperly, (for purposes of competition or personal gain), or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

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

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

(f) The Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s) Who have signed the integrity Pact shall not approach the courts while representing the matter to IEMs and shall wait for their decision in the matter

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

4. The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice, willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to action reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest to other and/or to influence the procurement process to the detriment of the Government interests.

5. The Bidder(s)/ Contractor(s) will not, directly or through any other or firm use coercive practices (which shall include the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or in directly, where potential or actual injury may befall upon a person, his/her reputation or property) to influence their participation in the tendering process.

Article–3: Consequences of Breach

Without prejudice to any right that may be available to the principal under law or the contract or its established polices and laid down procedures, the principal shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/ Contactor accepts and undertakes to respect and uphold the principal absolute right.

(1) If the Bidder(s)/ Contractor(s)/ Concessionaire(s)/ Consultant(s),either before award or during execution of contract has committed a transgression through a violation of Article 2, above or in any other form such as to put his reliability or credibility in question, the Principal after giving 14 days' notice to the contractor shall have powers to disqualify the Bidder(s) Contractor(s) from the Tender process or terminate/determine the contract, if already executed or exclude the Bidder/ Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the principal. Such exclusion may be forever or for a limited period as decided by the principal.

(2) Forfeiture of Earnest Money Deposit/Performance Guarantee/Security Deposit: If the Principal has disqualified the Bidder(s) from the tender Process prior to the award of the Contract or terminated/determined the contract or has accrued the right to terminate/determine the contract according to Article 3(1), the Principal apart from exercising any legal rights that may have accrued to the Principal, may in its considered opinion forfeit the entire amount of Earnest Money Deposit/Performance Guarantee and Security Deposit of the Bidder/Contractor.

(3) Criminal Liability: If the Principal obtains knowledge of conduct of a Bidder/ Contractor/Concessionaire/ Consultant or subcontractor, or of an employee or a representative or an associate of a Bidder/ Contractor/ Concessionaire/ Consultant or Subcontractor, which constitutes corruption, within the meaning of PC Act, or if the principal has substantive suspicion in this regard, the principal will inform the same to law enforcing agencies for further investigation.

Article–4: Previous Transgression

(1) The Bidder declares that no previous transgressions occurred in the last 3 years with any other Company in any a country conforming to the anti-corruption or with Central Government or state Government or any other Central/State Public Sector Enterprises in India that could justify his exclusion from the tender process.

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

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

Article–5: Equal treatment of all Bidders/ Contractors/ Concessionaires/ Consultants/ Subcontractors.

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

(2) The principal will enter into pacts on identical terms as this one with all Bidders and Contractors.

(3) The principal will disqualify Bidders who do not submit the duly signed integrity Pact between the Principal and the Bidder Along with the Tender or violate its provisions at any stage of the Tender process,

Article–6: Duration of the Pact

This integrity Pact begins when both the parties have legally singed it. It expires for the Contractor 12 months after the completion of work under the contract or expiry of defect liability period or last payment made under the contract, whichever is later and for all other bidders, 180 Days after the Contract has been awarded.

If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this integrity Pact as specified above, unless it is discharged/determined by the ADG/SDG, PWD concerned.

Article–7: Other Provisions.

(1) This Integrity pact is subject to Indian Law. Place of performance and jurisdiction is the Head quarter of the Division of the Principal, who has floated the tender.

(2) Changes and supplements as well as termination notices need to be made in writing.

(3) If the Bidder/Contractor/Concessionaire/Consultant is a partnership or a consortium this integrity Pact must be signed by all the partner or by one or more partner and consortium members. In case of a company, the integrity Pact must be signed by a representative duly authorized by board resolution.

(4) Should one or several provisions of this integrity Pact turn out to be invalid, the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

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

(6) In view of the nature of integrity pact, the integrity pact is irrevocable and shall remain valid even if the main tender/contract is terminated till the currency of the integrity pact.

Article –8: Legal and Prior Rights

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

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

…….
(For and on behalf of Principal)
……
(For and on behalf of Bidder/Contractor)
WITNESSES:
1 ……

(Signature, name and address)
2 …….

(Signature, name and address)
Place:
Dated:
Note: To be signed by the Bidder and the Engineer-in-Charge

GENERAL SPECIFICATIONS

1. The work in general shall be executed as per the description of the item, specification attached, MORTH specifications for road and bridge works 2013 (5th revision), CPWD Specifications 2019 Vol. I & II with correction slips issued up to the due date of submission of bid including extension, if any and Manual of Storm Water Drainage System 2019 as amended up to date of MoHUA.

2. The contractor shall be required to produce samples of all materials sufficiently in advance to obtain approval of the Engineer-in-Charge. Subsequently the materials to be used in the actual execution; of the work shall strictly conform to the quality of samples approved. In case of variation, such materials shall be liable to rejection.

3. All the materials obtained from Government stores or otherwise shall be got checked by the Junior Engineer/ Assistant Engineer in-charge of the work, on receipt of the same at site before use.

4. All the materials used in the work shall comply with the requirements of Engineer-in-charge and shall pass all the test and analysis required by him as per particular specifications as applicable or such recognized specifications as acceptable to the Engineer-in-charge.

5. The contractor shall be required to provide appliances at site, such as weighing scale, graduated cylinder, standard sieves, thermometer, slump cones, electric oven Proctor moulds etc. in order to enable the Engineer-in-charge to conduct field tests to ensure that the quality is consistent with the prescribed specifications and nothing extra shall be paid on this account.

6. The contractor shall at his cost, make all arrangements and shall provide such facilities as the Engineer- in-charge may require for collecting, preparing and forwarding the required number of samples for tests and for analysis at such time and to such places as directed by the Engineer-in-charge. Nothing extra shall be paid for the above, including the cost of material to be tested.

7. The necessary tests shall be conducted in the laboratory of IIT Delhi, C.R.R.I. Delhi, IIT Roorkee, Shri Ram Institute for Industrial Research, University Road, Delhi, Delhi Technical University, Delhi, NIT, Delhi, NSUT, Delhi & NABL accredited lab as approved by Engineer-in-Charge. The sample for carrying out all or any of the tests shall be collected by the Engineer-in-charge or on the behalf of the Officer-in-charge of the quality control wing of Central Design Office, CPWD and his authorised subordinate or by the officer-in-charge, PWD (NCTD) laboratory and his authorised subordinate for carrying out the independent quality control tests and the results will be binding on the contractor. **All expenditure to be incurred for testing of samples e.g. packing sealing transportation, loading, unloading etc including testing charges for all materials etc shall be borne by the contractor, irrespective of the norms of test results.**

8. The contractor his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorised representative is not present or does not associates himself, the results of such tests and consequences thereon shall be binding on the contractor.

9. **Before execution of any repair work on existing drain / footpath, the premeasurement are to be recorded and duly signed by contractor, JE, AE and submit to take prior approval from Engineer-in-Charge.**

10. The contractor shall get the water tested with regard to its suitability for use on the works and get approval from the Engineer-in-charge before he proceeds with the use of same for execution of works.

11. Wherever any reference to any Indian Standard specifications and/or IRC codes occurring the documents relating to this contract same shall be inclusive of all amendments issued there to or revision thereof if any, up to date of the tender notice.

12. The contractor must take adequate precautions to ensure that no spillage of construction materials takes place on the carriageway. The spillage of construction material should be removed with in 24 hour notice. Failure to which, the material will be removed by the Engineer-in Charge and the cost of removal shall be recovered from the Contractor.

SPECIAL CONDITIONS

1. All setting out activities concerning establishment of bench marks, theodolite stations, centre line pillars, etc. including all materials, tools, plants, equipments, theodolite and all other instruments, labour etc. required for performing all the functions necessary and ancillary thereto at the commencement of the work, during the progress of the work and till the completion of the work shall be carried out by the contractor

2. The contractor shall carry out true and proper setting out of the work under the supervision of the Engineer-in-Charge or his authorized representatives and shall be responsible for the correctness of the positions, levels, dimensions and alignments of all parts of the Road. If at any time, during the progress of the work, any error appears or arises in the position, level, dimensions or alignment of any part of the work, the contractor on being asked to do so by the Engineer-in-charge, shall rectify such error to the entire satisfaction of the Engineer-in-Charge. The supervision and/or checking by the Engineer-in- Charge or his authorised representatives shall not relieve the contractor of his responsibility for the correctness of any setting out of any line or level. The contractor shall carefully protect and preserve all bench marks, pegs and pillars provided for the setting out of works.

3. Some restrictions may be imposed by the concerned authorities on quarrying of sand, stone etc. from certainareas.Fortimelycompletionofwork,thecontractorshallhavetobringsuchmaterialfromother quarries located elsewhere, and nothing extra shall be payable on this account.

4. Unless otherwise specified in the Schedule of Quantities, the rates for all items of work shall be considered as inclusive of working in or underwater and/or liquid mud and/or foul conditions including pumping or bailing out liquid mud or water accumulated in excavations during the progress of the work from springs, tidal or river seepage, rain, broken water mains or drains and seepage from subsoil aquifer.

5. Stacking of materials and excavated earth including its disposal shall be done as per the directions of the Engineer-in-Charge. Double handling of materials or excavated earth, if required, shall have to be done by the contractor at his own cost.

6. The contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate himself, the Engineer-in-Charge shall do the needful or getting the samples collected and tested; the result of such tests and consequences thereof shall be binding on the contractor.

7. Other agencies working at site may also simultaneously execute the works entrusted to them and to facilitate their working, the contractor shall make necessary provisions e.g. holes, openings, etc. for laying/burying pipes, cables, conduits, clamps, hooks etc. as may be required from time to time.

8. Existing drains, pipes, cables, overhead wires, sewer lines, water line and similar services encountered in the course of the execution of the work shall be protected against the damage by the contractor. 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.

9. On account of security consideration, there could be some restrictions on the working hours, movement of vehicles for transportation of materials and location of labour camp. The contractor shall be bound to follow all such restrictions and adjust the programme for execution of work accordingly.

10. **SAFETY OF LABOUR:**

(i) For the safety of all labour directly or indirectly employed in the work for the performance of the contractor's part of this agreement, the contractors shall, in addition to the provision of CPWD safety code and directions of the Engineer-in-Charge, make all arrangements to provide facility as per the provision of Indian Standard Specifications (Codes) listed below & nothing extra shall be paid on this account:

IS3696PartI	Safety Code for Scaffolds and ladders.
IS 3696 Part II	Safety Code for Scaffolds and ladders Part II
ladders. IS 3764	Safety Code for excavation work.
IS4138	Safety Code for working in compressed air.
IS7293	Safety Code for working with construction machinery.
IS7969	Safety Code for storage and handling of building materials.
IS4130	Safety Code for demolition of buildings

11. Nothing extra shall be paid for cartage of any material to the site of work.

12. The contractor must take adequate precaution to ensure that no spillage of construction material takes place on to the carriageway. Failure to observe this will make the contractor liable to pay compensation @ Rs.200/- (Rs. Two Hundred Only) per day per metre length of each carriage way as affected by spill over of any construction material subject to a maximum of 5% (Five percent) of tendered cost. The decision of Engineer-in-Charge in this regard shall be final and binding on the contractor.

13. The right to carry out the work either in conformity with or in a manner entirely different from the terms of this tender document that may be considered most suitable before or subsequent to the receipt of tenders due to exigencies of work, is reserved with the Engineer-in-Charge.

14. For the execution of any items of work where any incidental work is actually required but not specifically stated in the tender, it is to be understood that the rate quoted by the contractor shall cover such charges also and nothing extra on account of such incidental charges, if any, shall be paid.

15. The contractor shall maintain in good condition all work till the completion of entire work allotted to him. From the commencement of the work to the completion of the same, the work is to be under the contractor's charge. The contractor is to be held responsible for and to make good all injuries, damages and repairs, caused by fire, rain, traffic, floods or other natural calamities and no payment shall be made to the contractor on this account. Engineer-in-Charge shall not be held responsible for any claims for injuries to persons/ work men or for structural damage to property happening from any neglect, default, want of proper care or misconduct on the part of the contractor or any other of his authorized representatives in his employment during the execution of the work. The compensation, if any, shall be paid directly to the department/authority/persons concerned, by the contractor at his own cost.

16. Engineer-in-Charge shall have full powers to send workmen and employ on the premises to execute fittings and other work not included in the contract. For whole operations the contractor is to afford every reasonable facility during ordinary working hours provided such operations are carried out in such a manner as not to impede the progress so of work included in this contract, in the opinion of Engineer-in-Charge.

17. At the time of construction, contractor shall embed all electrical/other fixtures like base plates, brackets, conduits, etc. for street lighting, etc. as per the directions of the Engineer-in-Charge. Nothing extra. whatsoever will be payable on this account.

18. The contractor shall provide and bear all expenses and charges for special or temporary service roads required by him in connections with access to the site (except for the purpose of diversion of traffic as directed by the Engineer-in-Charge), at no extra charges and his quoted rate shall deem to include the same. He shall alter, adopt or maintain the same as required from time to time or as directed by the Engineer-in-Charge. The department shall have right of way to this at all times and will not entitle the contractor to claim extra on this account.

19. Apart from concrete block at bottom the post of each adjacent railing unit shall be fixed and kept in position through welding at site of sufficient strength so as to prevent their lateral movement and to make the entire railing work a composite single unit to check against pilferage and disturbance / damaging any unit of railing.

20. Contractor shall engage specialized agency for tree plantation work which shall be in the panel of Forest Department (GNCTD). Tree Plantation plan shall be got appointed from Forest Department (GNCTD) by the contractor and transplantation shall be done then after.

21. **Structural Drawings:** Structural drawings will be prepared by the manufacturer from a structural consultant based on the BIS codes such as IS 456 :2000, IS 875, IS 1893 etc. and other relevant codes and the contractor shall verify the drawings and provide the comments for the said drawing. The contractor shall have to get the structural drawings vetted from one of the following Govt. Institutions: -

a. IIT Delhi
b. IIT Roorkee
c. DTU Delhi
d. NIT Delhi
e. NSUT Delhi
f. Or any Government Engineering College as approved by the Engineer-in-Charge.

The Vetted drawings shall be got approved by the contractor from Engineer-in-Charge before execution of work.

22. **Testing and Factory Visit:**

Agency will have to arrange visit of Engineer-in-charge or his representative to the casting yard/factory of precast manufacturers for the approval of manufacturer. After the inspection, if Engineer-in-charge is satisfied with the performance of the factory of precast manufacturer, the manufacturer has to deposit the Quotient money @ 1% of the tendered amount and the same will be released after the satisfactory completion of maintenance period of 10 years after the completion of work. The Quotient money shall be in the form of insurance surety bonds, Account Payee demand draft, fixed deposit receipt, Banker's Cheque or Bank Guarantee of a Commercial Bank drawn in favor of **Executive Engineer, M-141 (N), PWD, Delhi.**

The Quotient money in the form as prescribed above shall be valid for 12 years from the date of approval of factory. The manufacturer shall get the validity extended accordingly in case the completion period of work extends beyond the stipulated period of completion for any reason. Also, manufacturer has to sign tri party guarantee bond with the contractor and the Engineer in charge on behalf of President of India for carrying out the replacement/repair of drain during guarantee period of 10 years after the completion of the project.

Structural design and vetting of the design of the precast drain will be the responsibility of manufacturer and contractor and if they are not discharging their responsibility as per agreement conditions, in such case, Quotient money deposited by the manufacturer will be forfeited and manufacturer will be debarred from PWD, however, Final responsibility will lie with the main contractor and the action against the main contractor shall be initiated as per terms & conditions of the agreement.

The Engineer-in-Charge or his authorized representative, at any time during the execution of work, may visit the factory to inspect the manufacturing of precast RCC drain and check the material (Cement, Steel, Aggregate, etc.) being used. If any discrepancy is found between the approved design (structural design, design mix of concrete, minimum cement and steel consumption etc.) and manufactured/ being manufactured elements of precast RCC drain, necessary action as per terms & conditions of the agreement shall be initiated against the main contractor and precast manufacturer.

23. If Contractor fails to replace/repair the defective section of drain within 7 days of written notice given to him by Engineer-in-Charge during 10 years of guarantee period, the compensation @ 10,000/- per day will be made from 7th day of notice from the security/Additional Security Deposit of the contractor, and it will be over and above the penalty under clause-2, if any.

24. All the testing charges will be born by the contractor and samples/material will be arranged by the contractor for testing for which nothing extra shall be paid.

25. Non-destructive tests will be done by the contractor in presence of Engineer-in-Charge or their representative at required interval and nothing extra shall be paid on this account.

26. Tri Party Guarantee Bond in respect of Precast Drain Works:

Ten (10) years guarantee bond in prescribed proforma shall be submitted by the contractor which shall be signed by the contractor and manufacturer to meet their liabilities under the guarantee bond for a period of ten years.

GENERAL CONDITIONS

1.0 General

Specifications & Order of preference:

1.1.1 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 Vol. I & II" with up-to-date correction slips, additional / Particular Specifications, Architectural / structural drawings and as per instructions of Engineer-in-Charge.

1.1.2 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.

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

1.2 Scope:

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

1.2.2 The works to be undertaken by the contractor shall inter alia include the following: Preparation of AS-BUILT drawings wherever applicable. Obtaining of Statutory permissions wherever applicable and required. Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required. Warranty obligation for the equipment's and/or fittings/fixtures supplied by the contractor.

1.2.3 If required, 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.

1.2.4 All the hidden items such as water supply lines, drainage pipes, conduits, sewers etc. are to be properly tested as per the design conditions before covering and their measurements in computerized measurement book duly test checked shall be deposited with Engineer in charge or his authorized representative, prior to hiding these items.

1.3 Deployment of Technical staff & skilled labour:

1.3.1 The quality of work is of paramount importance. Contractor shall have to engage well experienced skilled labour and deploy modern T&P and other equipment's to execute the work to provide the desired quality.

The Contractor shall depute Site Engineer & skilled workers as required for the work. He shall submit organization chart along with details of Engineers and supervisory staff. It shall be ensured that all decision-making powers shall be available to the representatives of the contractor at site itself to avoid any likely delays on this account. The contractor shall also furnish list of persons for specialized works to be executed for various items of work. The Contractor shall identify and deploy key persons having qualifications and experience in the similar and other major works, as per the field of their expertise. If during the course of execution of work, the Engineer-in-Charge is of the opinion that the deployed staff is not sufficient or not well experienced; the Contractor shall deploy more staff or better-experienced staff at site to complete the work with quality and in stipulated time limit. The Project Manager of the contractor having minimum twenty years of experience in similar

nature of work along with all technical staff as mentioned in the clause 32 of the GCC, shall always be available at the site during execution of work.

1.4 Removal of Machinery, Tools & Equipment:

1.4.1 Removal of machinery, tools & equipment shall be allowed to be moved away from the site only when, in written opinion of Engineer-in-Charge, the same are no longer required at site of work.

1.5 Soil conditions of site:

1.5.1 Contractor(s) shall study the soil investigation report, if any, for the site, and satisfy himself about complete characteristics of soil and other parameters at site. No claim whatsoever on account of any discrepancy between the sub-surface strata conditions that may be encountered at the time of execution of the work and those given in soil report, in-accuracy or interpretation thereof shall be entertained from the Contractor under any circumstances. The ground water table is in variable condition and the information given in the report is only indicative and it may vary from time to time.

1.6 Site condition:

1.6.1 The tenderer shall acquaint himself with the site of work and 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.

1.7 Precautionary measures:

1.7.1 Contractor shall take all precautionary measures to avoid any damage to adjoining property. All necessary arrangement shall be made at his own cost. The contractor shall take all precautions to prevent his workmen and employees from removing and damaging any Flora (plant/vegetation) from the campus/site.

1.7.2 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. In case of any accident of the labourers/ contractual staff, the entire responsibility will rest on the contractor and any compensation under such circumstances, if becomes payable, shall be entirely borne by the contractor.

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

1.7.4 The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The Contractor shall use such methodology and equipment's 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 firsthand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.

1.8 General cleanliness of the site and Stacking & Storage of Materials:

1.8.1 The site of work shall be always kept clean in general strictly adhering to approved job layout and green building parameters. The Contractor shall take all care to prevent any water-logging at site. The waste water shall not be allowed to be collected at site. It may be directly pumped into the public drainage system with prior approval of the concerned authorities. For discharge into public drainage system, necessary permission shall be obtained from concerned authorities after paying the necessary charges, if any, directly to the authorities. The work shall be carried out in such a way that the area is kept clean and tidy. All the fees/charges in this regard shall be borne by the Contractor. Nothing extra shall be payable on this account.

1.8.2 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. Arrangement of space for stacking of material are the responsibility of contractor and nothing extra will be paid to the contractor in this regard.

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

1.9 Lab Equipment:

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 equipment's shall be got calibrated in advance from laboratory, approved by the Engineer-in-Charge. Nothing extra shall be payable on this account. A site laboratory with the minimum equipment's as specified in NIT shall be established, made functional and maintained within 30 days from the award of the work without any extra cost to the department.

1.10 **Setting Out**

1.10.1 The contractor shall establish, maintain and assume responsibility for grades, lines, levels and bench marks. He shall report any errors or inconsistencies regarding grades, lines, levels, dimensions to the Engineer-in-Charge before commencing work. Commencement of work shall be regarded as the contractor's acceptance of such grades, lines, levels and dimensions and no claim shall be entertained at a later date for any errors found.

1.10.2 In order to set the alignment of buildings / foundations / paths/Drains and to mark the same on the ground, the agency is to adopt "total station" surveying method. The agency is to engage a well versed and well experienced surveyor in "total station" survey. Nothing extra for this total station survey is payable.

If at any time, any error in the respect of setting out appears during the progress of the work, the contractor shall, at his own expense rectify such error if so required, to the satisfaction of the Engineer-in-Charge.

Though the site levels are indicated in the drawings, the contractor shall ascertain himself and confirm the site levels with respect to GTS bench mark from the concerned authorities. The contractor shall protect and maintain temporary/ permanent benchmarks at the site of work throughout the execution of the work. These bench marks shall be got checked by the Engineer-in-Charge or his authorized representatives. The work at different stages shall be checked with reference to bench marks maintained for the said purpose. Nothing extra shall be payable on this account

The approval by the Engineer-in-Charge, of the setting out by the contractor, shall not relieve the contractor of any of his responsibilities and obligation to rectify the errors/defects, if any, which may be found at any stage during the progress of the work or after the completion of the work.

1.10.3 The contractor shall be entirely and exclusively responsible for the horizontal, vertical and other alignments, the level and correctness of every part of the work and shall rectify effectively any errors or imperfections therein. Such rectifications shall be carried out by the contractor at his own cost to the instructions and satisfaction of the Engineer-in-Charge.

1.11 Temporary Water, Electricity & Telephone Connections:

1.11.1 The contractor shall make his own arrangements for water including boring of tube wells etc. if necessary and for electricity by obtaining electric connections and by providing diesel generators of adequate capacity, if required and make necessary payments directly to the State Govt. departments concerned. Necessary approval shall be taken by the contractor from the ground water department for boring of tube wells, if required. Nothing extra shall be paid on these accounts. Contractor shall get the water tested from laboratory approved by the Engineer-in-charge at regular interval as per the CPWD Specifications 2019 with regard to its suitability and conforming to the relevant IS Code. The contractor shall obtain written approval from the Engineer-in-Charge before he proceeds by using the same for execution of work. The contractor shall arrange Municipal water at his own cost or if he intends to use tube well water, he will have to install a RO plant to treat the water, if required, as the tube well maynot be suitable for construction and nothing extra shall be paid to the contractor on this account. Water charges shall not be recovered in case arrangement of water is made at his own by the contractor. All expenses towards collection of samples, packing, transportation including testing charges etc. shall be borne by the contractor. The contractor shall obtain environmental and pollution clearance for the diesel generators. Nothing extra shall be paid on this account.

1.11.2 The Contractor shall arrange electricity at his own cost for testing of the various electrical installations as directed by Engineer-in-Charge and for the consumption by the contractor for executing the work. Also, all the water required for testing various electrical installations and also testing water supply, sanitary and drainage lines, water proofing of underground sump, overhead tanks, water proofing treatment etc. shall be arranged by the contractor at his own cost. Nothing extra shall be payable on this account.

1.11.3 Arrangement of temporary telephone connection, water and electricity required by Contractor, shall be made by him at his own cost and also necessary permissions shall be obtained by him directly from concerned authorities, under intimation to the Department. Also, all initial cost and running charges, and security deposit, if any, in this regard shall be borne by him. The Contractor shall abide by all the rules/ bye laws applicable in this regard and he shall be solely responsible for any penalty on account of violation of any of the rules / byelaws in this regard. Nothing extra shall be payable on this account.

1.11.4 The Contractor shall be responsible for maintenance and watch and ward of the complete installation and water / electricity meter and shall also be responsible for any pilferage, theft, damage, penalty etc. in this regard. The Contractor shall indemnify the Department against any claim arising out of pilferage, theft, damage, penalty etc. whatsoever on this account. Security deposit for the work shall be released only after No Dues Certificates are obtained from the local Authorities from whom temporary electric/ water / telephone connection have been obtained by the Contractor. Nothing extra shall be payable on this account.

1.11.5 The Department shall in no way be responsible for either any delay in getting electric and/or water and/or telephone connections for carrying out the work or not getting connections at all. No claim of delay or any other kind, whatsoever, on this account shall be entertained from the Contractor. Also, contingency arrangement of stand-by water & electrical supply shall be made

by the Contractor for commencement and smooth progress of the work so that work does not suffer on account of power failure or disconnection or not getting connection at all. No claim of any kind whatsoever shall be entertained on this account from the Contractor. Nothing extra shall be payable on this account.

1.12. The information and site data shown in the drawings and mentioned herein and also elsewhere in the tender documents are being furnished for general information and guidance only. The department shall not bear responsibility for lack of such knowledge and also the consequences thereof. The Engineer-in-charge in no case shall be held responsible for the accuracy thereof or any interpretation/ or conclusions drawn there from by the contractor.

1.13 Scaffolding &Staging:

1.13.1 Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the contractor. The scaffolding shall be provided strictly with steel double scaffolding system, suitably braced for stability, with all the accessories, gangways, etc. with adjustable suitable working platforms to access the areas with ease for working and inspection. Single scaffolding system is strictly prohibited and shall invite necessary action. It shall be designed to take all incidental loads. It should cater to the safety features for workmen. Nothing extra shall be payable on this account. It shall be ensured that no damage is caused to any structure due to the scaffolding.

1.13.2 The contractor should submit the shop drawings 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.

1.14 Co-ordination with other agencies:

1.14.1 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.

1.14.2 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.

1.14.3 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 –

Allow use of scaffolding already erected, toilets, sheds etc.

Properly co-ordinate their work with the work of other Contractors.

Provide control lines and benchmarks to his associate-Contractors and the other Contractors.

Provide electricity and water at mutually agreed rates.

Provide hoist and crane facilities for lifting material at mutually agreed rates.

Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.

Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other Contractors to suit the overall schedule completion.

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.

1.14.4 The contractor shall liaison with other agencies for shifting of trees or, other services like water line. Sewer line, IGL line, BSES cables and other services etc.
The contractor shall not entitle for any time extension and cost compensation on account of delay due to utility shifting.

1.15 Procurement of materials:

1.15.1 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.

1.15.2 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.

1.16 Protection of Existing Services & buildings and Materials:

1.16.1 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.

1.16.2 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.

1.16.3 All fossils, coins, articles of value of antiquity, structures and other remains or things of geological or archaeological interest discovered on project location during excavation/construction shall be the property of the Government, and shall be dealt with as per provisions of the relevant legislation. The contractor will take reasonable precaution to prevent his workmen or any other persons from removing and damaging any such article or thing. He will, immediately upon discovery thereof and before removal, acquaint the Engineer-in-charge of such discovery and carry out the official instructions of Engineer-in-charge for dealing with the same, till then all work shall be carried out in a way so as not to disturb/ damage such article or thing.

1.16.4 The contractor shall be responsible for the watch and ward / guard of the assets, safety of all fittings and fixtures against pilferage and breakage during the period of installations and thereafter till they are maintained by him and thereafter physically handed over to the client department. No extra payment shall be made on this account.

1.16.5 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.

1.17 Rates and other conditions for payment:

The rates quoted by the Contractor are deemed to be inclusive of the following--

1.17.1 Site clearance, setting out work, profile, establishment of reference bench mark(s), taking spot levels, construction of all safety and protection devices, barriers, barricading, signage, labour safety, welfare & training measures, 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. Payment for centering& shuttering, however, if required to be done for floor heights greater than 3.50m shall be admissible at rates arrived in accordance with clause 12 of the agreement, if not already specified.

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

1.17.3 All labour, material, tools and plants and other inputs involved in the execution of the item.

1.17.4 Performance test of the entire installation(s) before the work is finally accepted.

1.17.5 Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items.

1.17.6 The percentage quoted by the tenderer, shall be inclusive of all taxes including GST and levies applicable in respect of this contract payable by the contractor. Government will not entertain any claim whatsoever in respect of the same.

1.17.7 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, notwithstanding 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.

1.17.8 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. 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 charges shall be borne by the contractor. All statutory taxes, levies, charges (including GST, 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 obtain all requisite licenses wherever required and shall pay to such authority all the fees that are 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.

1.17.9 Royalty at the prevalent rates shall have to be paid by the contractor on all the boulders, stone aggregate, brick aggregate, shingle, coarse or fine sand, earth, gravel, bajri etc. collected by him for the execution of the work, directly to the Revenue Authority or authorized agent of the State Government concerned or Central Government. Nothing extra shall be payable on this account.

Royalty at the prevalent rates shall be paid by the contractor or the RMC supplier as per the terms of supply between them, on all materials such as stone aggregate, coarse or fine sand etc. collected by him for the execution of the work, directly to the revenue authority of the State Government concerned. Further, contractor needs to submit proof of submission of full royalty to the State Government or local authority. Nothing extra shall be payable on this account.

1.17.10 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.

1.17.11 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.

1.17.12 The Contractor shall make all necessary arrangements for protecting from rain or likewise extreme weather conditions, 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.

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

1.17.14 No payment shall be made for any damage caused by fire, rain, snowfall, flood or any other natural calamity, whatsoever during the execution of the work. The contractor shall be fully responsible for any damage to the govt. property and the work for which payment has been advanced to him under the contract and he shall make good the same at his risk and cost. The contractor shall be fully responsible for safety and security of his material, T&P/Machinery brought to the site by him. The contractor shall maintain all the work in good condition at his own cost till the completion of the entire work.

1.17.15 The ESI and EPF contribution on the part of employer in respect of this contract shall be paid by the contractor. These contributions on the part of employer paid by the contractor shall be reimbursed by the Engineer in charge to the contractor on actual basis.

1.18 Foreign Exchange:

1.18.1 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 if 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.

1.181.2 The contractors have to quote the corresponding imported items in “Indian Rupees” in the Schedule of Quantities which shall include all incidental charges including freight, taxes including GST, import duties, fluctuations in currency rates. No extra payment will be made over and above the quoted rates.

1.19 Tools & Plant:

1.19.1 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.

1.20 Computerized MBs & SMBs:

1.20.1 The contractor shall make available computerized Standard Measurement Books (SMBs), as per clause 6 of GCC 2023.

1.20.2 The contractor will submit computerized measurement sheet for the work carried out by him for making payment as per Clause – '6' of the CPWD General Conditions of Contract 2023 (with correction slips up to the last date of submission of tender). For casting of RCC members and other hidden items, the corrected and duly test checked measurement sheets of reinforcement or that of other hidden items shall be deposited with Engineer in charge or his authorized representative, before casting of RCC or other hidden items. The delay in submission of corrected and duly checked measurement sheet may, therefore, delay casting of RCC or execution of hidden item for which no hindrance shall be recorded.

1.21 Water Supply & Sanitary Installations & Testing:

1.21.1 Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should conform to approved manufacturer's 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. The contractor shall submit for the approval of the Engineer-in-Charge, the name of the plumbing agency (along with their working experience in recent past) proposed to be engaged by him.

1.21.2 The contractor shall give performance test of the entire installation(s) as per the standing specifications before the work is finally accepted and nothing extra, whatsoever, shall be payable to the contractor for the test.

2.0 SECRECY

2.1 The contractor shall take all steps necessary that all persons employed on any work in connection with the contract have noticed 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.

2.2 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.

2.3 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.

3.0 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.

4.0 PROGRESS CHART: -

4.1 The contractor shall submit a Time and Progress Chart for each mile stone. The Engineer-in-charge may within 30 days thereafter, if required modify, and communicate the program approved to the contractor failing which the program submitted by the contractor shall be deemed to be approved by the Engineer-in-charge. The work programme shall include all details of balance drawings and decisions required to complete the contract with specific dates

by which these details are required by contractor without causing any delay in execution of the work. The chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-charge and the Contractor within the limitations of time imposed in the Contract documents.

4.2 In case of non-submission of construction programme by the contractor, the program approved by the Engineer-in-charge shall be deemed to be final.

4.3 The approval by the Engineer-in-charge of such programme shall not relieve the contractor of any of the obligations under the contract.

4.4 The contractor shall submit the "Time and Progress Chart and Progress Report" using the mutually agreed software or in other format decided by Engineer-in-charge for the work done during previous month to the Engineer-in-charge on or before 5th day of each month failing which a recovery of Rs. 5000/- shall be made on per week or part basis in case of delay in submission of the monthly progress report.

4.5 The program chart should include the following: -

a) Descriptive note explaining sequence of various activities.
b) BAR CHARTS prepared in mutually agreed software or in other format decided by Engineer-in-charge which will indicate resources in financial terms, manpower and specialized equipment for every important stage.

Program for procurement of materials by the contractor.

Program for arranging and deployment of manpower both skilled and unskilled so as to achieve targeted progress.

Program of procurement of machinery / equipment having adequate capacity, commensurate with the quantum of work to be done within the stipulated period, by the contractor. In addition, to the above to achieve the progress of work as per programme, the contractor must bring at site adequate shuttering material required for cement concrete and RCC works etc. The contractor shall submit shuttering schedule adequate to complete the structure work within the laid down physical milestones.

4.6 Programme for achieving milestones.

The submission for approval by the Engineer-in-charge of such programme or such particulars shall not relieve the contractor of any of the 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.

5. PROGRESS AND MONITORING OF WORK:

5.1. The progress report shall contain the following, apart from whatever else may be required as specified:

Construction schedule of the various components of the work through a bar chart for every alternate month (or as may be specified), showing the micro milestones, targeted tasks and up to date progress. At least 10 digital photographs showing all the parts of site along with at least 5 minutes video of executions of different items in soft copy has to be submitted in every monthly progress report.

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.

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

Man-power statement, indicating individually the names of all the staff deployed on the work, along with their designations. Number of skilled workers and unskilled workers deployed on the work and their location of deployment.

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, extra /substituted /deviations items if any, etc.

5.2 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, notwithstanding 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.

5.3 The work should be planned in a systematic manner so that chase cuttings in the walls, footpath, kerbstone 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.

5.4 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 of 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.

5.5 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 and maintenance 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 this work and they shall not be shifted / removed from site without the permission of the Engineer-in-Charge.

5.6 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.

5.7 Lesioning with other agency for shifting of trees/or any services line including water line/sewerline/ BSES Cable/IGL Line & Other Services.

6.0 PROJECT REVIEW MEETINGS:

The contractor, immediately on award of work shall submit details of his key personnel to be engaged for the work at site. In addition, he shall furnish the Engineer-in-charge detailed organization involved with the work.

The contractor shall present the programme and status at various review meetings as required. Monthly Review Meetings: Shall be attended by Project - in - charge and the Management Representative who can take independent decisions along with PWD, client's representatives.

Agenda

a) Progress Status/Statistics.
b) Completion Outlook.
c) Major hold ups/slippages.
d) Assistance required.
e) Critical issues.
f) Any decision on queries raised either by Contractor/PMC.
g) Anticipated cash flow requirement for next two months.

7.0 ENGAGING SPECIALISED AGENCIES FOR WORKS

7.1 The Specialized agency for the work shall be got approved from the Engineer-in-Charge well before actual commencement of the item of work. The contractor shall submit the list of specialized agencies proposed to be engaged by him along with their technical capability and necessary performance certificates, within 10 days of the stipulated date of start to substantiate technical capability and experience of the agency for prior approval of the Engineer-in-Charge.

7.2 It shall be the responsibility of main contractor to sort out any dispute / litigation with the Specialized Agencies without any time & cost overrun to the Department. The main contractor shall be solely responsible for settling any dispute / litigation arising out of his agreement with the Specialized Agencies. The contractor shall ensure that the work shall not suffer on account of litigation/ dispute between him and the specialized agencies / sub-contractor(s). No claim of hindrance in the work shall be entertained from the Contractor on this account. No extension of time shall be granted and no claim what so ever, of any kind, shall be entertained from the Contractor on account of delay attributable to the selection/rejection of the Specialized Agencies.

8.0 SAFETY MEASURES

8.1. The issue of construction safety & standards has gained utmost importance in recent times. This subject is to be dealt with in an integrated manner with an approach to developing and establishing a safety culture at work sites. Broadly, its components are:

Creating awareness.
Education.
Training.
Implementation.
Enforcement measures.

All workers of contractor and associate agencies, invariably and at all the times, must follow all safety norms, adopt safe construction practices and use all required safety gadgets in their working throughout the project duration.

8.2. The contractor shall issue Photo Identity Cards with unique numbers containing salient information of workers for the labour & his staff. All the staff and labour will wear the dress and jackets approved by Engineer-in-charge during work at site.

8.3. The Contractor shall monitor and achieve the objectives of construction safety continuously, progressively and through affirmative action, and shall oversee implementation of safety program over the entire construction period.

8.4. 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. These signages 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.

8.5 Sign Boards

8.5.1 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.

8.5.2 A display board shall be kept at site which would list the names of workers, teams and agencies following safety program in the best manner. This would be updated weekly.

8.5.3 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.

8.5.4 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 six members) of the departments per year shall be arranged by the contractor

8.5.5 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.

9.0 SPECIAL CONDITION

9.1 All the materials of approved make will be used in the work with the prior approval of Engineer-in-Charge. However, in case, due to non-availability of material of approved make, the equivalent material may be approved by Engineer-in-charge subject to cost adjustment. If such approved material 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."

9.2 The following procedure should be followed in case of removal of rejected/sub-standard materials from the site of work.

Whenever any material brought by the contractor to the site of work is rejected, entry thereof should invariably be made in the site order book under the signature of the AE/AEE giving approximate quantity of such materials.

As soon as the material is removed, a certificate to that effect may be recorded by the AE/AEE against the original entry, giving the date of removal, mode of removal i.e. whether by truck, carts or by manual labour. If removal is by truck, the registration number of the truck should be recorded.

10.0 INSPECTION OF WORKS

10.1 In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by the Chief Engineer, South Zone (M), PWD and other senior officers of PWD/CPWD in addition of the Engineer-in-charge, his authorized representatives, Authorities and Team of Third-Party Quality Assurance, if engaged for the work. The contractor shall at times during the usual working hours and at all times at which reasonable notices of the

intention of the Engineer-in-charge or other officers as stated above to visit the works shall have been given to the contractor, either himself be present to receive the orders and instructions or have a responsible representative duly accredited in writing, to be present for that purpose.

10.2 The committee/consultant appointed by PWD/CPWD, shall be inspecting the works including workshops and fabrication factory to ensure that the works in general being executed according to the design, drawings and specifications laid down in the contract. Their observations shall be communicated by PWD/CPWD engineering staff and compliance is to be reported to PWD/CPWD.

10.3 Senior Officers of PWD/CPWD, Dignitaries from Central Ministry / Department, State Government and Client Department Authorities shall be inspecting the on-going work at site at any time with or without prior intimation. The contractor shall, therefore, keep updated the following requirements and detailing-

- Display Board showing detail of work, weekly progress achieved with respect to targets, reason of shortfall, status of manpower, wages being paid for different categories of workers.
- Entrance and area surrounding to be kept cleaned.
- Display layout plan key plan, relevant drawings including plans, elevations and sections.
- Upto date display of programme chart (Bar charts).
- Keep details of quantities executed, balance quantities, deviations, possible Extra item, substituted Item etc.
- Keep plastic / cloth mounted one sets of relevant drawings.
- Set of Helmets and safety shoes for safety.

11.0 Applicable Permits

11.1 The contractor(s) shall give to the Municipality, police and other authorities all necessary notices etc. that may be required by law and obtain all requisite licenses for temporary obstructions, enclosures etc. and pay all fee, taxes including GST and charges which may be levied on account of these operations in executing the contract. He shall make good any damage to the adjoining property whether public or private and shall supply and maintain lights either for illumination or for cautioning the public at night.

11.2 The contractor shall ensure that applicable permits mandated by the local bodies and in case warranted for this work are obtained as required under the Applicable Laws.

12.0 LOCAL BYE-LAWS

12.1 The building work shall be carried out in the manner complying in all respects with the requirements of relevant bye-laws of the local body under the jurisdiction of which the work is to be executed or as directed by the Engineer-in-Charge and nothing extra shall be paid on this account.

12.2 Some restrictions may be imposed by the local police etc. on the working time and for movement of labour, materials etc. the contractor shall be bound to follow all such restrictions/instructions and nothing extra shall be payable on this account.

12.3 The contractor shall not stack building material/ malba on the road or on the land owned by any other authority, as the case may be. In case, the Contractor is found stacking the building material/ malba as stated above, he shall be liable to pay the stacking charges as may be levied by local body or authority and also to face penal action as per the rules, regulations and bye-laws of the said body or authority. The Engineer-in-Charge shall be at liberty to recover the sums due but not paid to the concerned authorities on the above counts from any sums due to the contractor including amount of the Security Deposit or Retention Money in respect of this contract or any other contract.

13.0 FINAL TESTING OF THE INSTALLATION:

The Contractor shall demonstrate trouble free functioning of all the Civil and E & M installations and services. The Engineer-in-Charge or his authorized representatives shall carry out final inspection of the various Civil and E & M services and installations. Any defect(s) noticed during demonstration shall be rectified by the Contractor at his own cost to the entire satisfaction of the Engineer-in-Charge. Nothing extra shall be payable on this account.

14.0 De-watering

(i) De-watering required, if any, shall be done conforming to BIS Code IS: 9759 (guide lines for de-watering during construction) and / or as per the specifications approved by the Engineer-in-Charge. Design of an appropriate and suitable dewatering system shall be the Contractor's responsibility. Such scheme shall be modified / augmented as the work proceeds based on fresh information discovered during the progress of work, at no extra cost. At all times during the construction work, efficient drainage of the site shall be carried out by the Contractor and especially during the laying of plain cement concrete, taking levels etc. The Contractor shall also ensure that there is no danger to the nearby properties and installations on account of such lowering of water table. If needed, suitable precautionary measures shall be taken by the Contractor. Also the scheme of dewatering adopted shall have adequate built in arrangement to serve as stand-bye to attend to repair of pumps etc. and disruption of power / fuel supply. Nothing extra shall be payable for all the operations described in this para.

(ii) In trenches where surface water is likely to get into cut / trench during monsoons, a ring bund of puddle clay or by any other means shall be formed outside, to the required height, and maintained by the Contractor. Also, suitable steps shall be taken by the Contractor to prevent back flow of pumped water into the trench. Nothing extra shall be payable on this account.

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 the same at his own cost and nothing extra shall be paid except otherwise provided in the items of Schedule of Quantities.

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

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.

The contractor will take reasonable precautions to prevent his workman and employees from removing and damaging any flora (plant/vegetation) from the project area.

Contractor has to work in such a way that no surrounding structures gets disturbed/damaged and if any damage occurs, it is the responsibility of the contractor to get it repaired. Nothing extra shall be paid to the contractor in this regards.

15.0 ROAD AND SPACE FOR LABOUR CAMPS

The contractor shall arrange land, if required, for accommodation of labour, setting up of office, the storage of materials, erection of temporary workshops, construction of approach roads to the site of the work including land required for carrying out of all jobs connected with the execution & completion of the work. If during construction, it becomes necessary to remove or shift the stored materials shed workshop, access roads, etc. to facilitate execution of any other work by any other agency, the contractor shall carry out the removal of shifting as directed by the Engineer-in-Charge and no claim whatsoever, shall be entertained on this account.

The site shall be handed over on as is where is basis and it shall be deemed that the contractor has satisfied himself as to the nature and location of the work, transport facilities, availability of land for setting up of camp, etc. the department will bear no responsibility for lack of such knowledge & the consequences thereof.

16.0 Removing of parked vehicles and other objects for execution of work:

This work is to be executed on PWD roads. For timely execution of work, the agency may be required to deploy necessary Cranes / tools& plants/machineries etc. to remove the parked vehicles or any other object, which are hindering the execution of this work, from Right of Way of PWD road, on as many occasions as required and as directed by Engineer-in-Charge, at his own cost and nothing extra will be payable for the same to the agency.

ADDITIONAL CONDITIONS

1. Before tendering, the tenderer shall inspect the site of work and shall fully acquaint about the conditions with regard to site, nature of soil, availability of materials suitable location for construction of godowns, stores and labour huts, the extend of leads and lifts involved in the work (over the entire duration of the contract) including local conditions, traffic restrictions, obstructions and other conditions, as required for satisfactory execution of the work. His rates should take into consideration all such factors and contingencies. No claim whatsoever shall be entertained by the Department on this account.

2. The contractor must study the specifications & conditions carefully before tendering.

3. Before start of the work, the contractor shall submit the program of execution of work, get it approved from the Engineer-in-Charge and strictly adhere the same for the timely completion of the project work.

4. The contractor shall have to make approaches to the site, if so required and keep them in good condition for transportation of labour and materials as well as inspection of works by the Engineer-in- Charge. Nothing extra shall be paid on this account.

5. The contractor shall at all times carryout work on the Busy Road sites in a manner creating minimum hindrances in the flow of traffic as per direction of Engineer-in-Charge.

6. All arrangements for traffic diversion during construction including maintenance of diversion roads shall be considered as incidental to the work and contractor's responsibility and nothing shall be payable to him in this respect. However, if any new diversion road is constructed by the contractor, the same will be paid separately.

7. Any damage done by the contractor to any existing work shall be made good by him at his own cost.

8. The work shall be carried out in the manner complying with the requirement of relevant bye-laws of the local bodies under the jurisdiction of which the work is to be executed and nothing extra shall be paid in all respects on this account.

9. The contractor shall make his own arrangements for obtaining electric connection(s), if required, and make necessary payment directly to the Department concerned. The Department will however make all reasonable recommendations to the authority concerned in this regard.

10. The contractor or his authorised representative should always be available at the site of work to take instructions from Departmental Officers, and ensure proper execution of work. No work should be done in the absence of such authorised representative.

11. The structural and other drawings for the work, shall at all times, be properly correlated before executing any work and no claim whatsoever shall be entertained in this respect.

12. The contractor shall maintain in good condition all works executed till the completion of entire work allotted to the contractor.

13. No payment will be made to the contractor for damaged caused by rains, or other natural calamities during the execution of works and no such claims on this account will be entertained.

14. Royalty at the prevalent rates and all other incidental expenditure shall have to be paid by the contractor on all the boulders, metal, shingle, earth, sand, bajri etc. collected by him for the execution of the work directly to the concerned Revenue Authority of the State or Central Government. His rates are deemed to include all such expenditure and nothing extra shall be paid.

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

16. The contractor shall provide suitable barricading with suitably painted single row of GI sheets about 90cm wide nailed or bolted with wooden/steel poles spaced 2 to 3 metre apart and each pole 1.6m to 2m long, 8cm to 10cm dia. The poles will be embedded in mobile iron pedestal/ rings suitably framed for giving stable support without hindering the traffic as per direction of the Engineer-in- Charge. All management (including

watch and ward) of barricades shall be the full responsibility of the contractor. The barricades shall be removed only after the completion of the work or part of work. Before execution of work contractor shall submit detailed drawings of barricading including detailing of support system. The submitted drawings shall be checked by the Engineer-in-Charge and approved drawings shall be issued to the contractor after making necessary corrections as desired by the Engineer-in-Charge. The contractor shall erect the barricading only as per the approved drawings. Minimum height of barricading shall be decided by Engineer-in-Charge in writing as per site condition and complete safety purpose **Nothing extra shall be paid to the contractor in this regard.**

17. The temporary warning lamps shall be installed at all barricades during the hours of darkness and kept lit at all times during these hours. Nothing extra shall be paid to the contractor in this regard.

18. All works and materials brought and left upon the ground by the contractor or by his orders for the purpose of forming part of the works are to be considered to be the property of the President of India and the same are not to be removed or taken away by the contractor or any other person without special license and consent in writing of the Engineer-in-Charge, but the President of India is not be in any way responsible for any loss or damage which may happen to or in respect of any such work or materials either by the same being lost or damaged by weather or otherwise.

19. The contractor will be responsible to provide safe drinking water to labour engaged in execution of work.

20. The rates for all items of work, unless clearly specified otherwise, shall include the cost of all labour, materials de-watering and other inputs involved in the execution of the items.

21. The materials to be issued to the contractor and the place of delivered shall be as mentioned elsewhere in the tender documents. If these are delivered at any other site, the difference in cost due to cartage will be adjusted accordingly. The contractor shall have to cart at his cost the materials to the site of work as soon as these are issued. The materials will be issued during the working hours and as per rules of the Central Stores of CPWD or the store of the PWD (GNCTD) from time to time.

22. The contractor shall construct suitable godown at site of work for storing the materials safe against damage due to sun, rain, dampness, fire, theft etc. He shall also employ necessary watch and ward establishment for the purpose and no extra claim whatsoever shall be entertained on this account.

23. **In the tender papers the works "CPWD" shall include PWD (GNCTD) where applicable.**

24. Existing drains, pipes, cables, overhead wires, sewer lines, waterline and similar servicemen countered in the course of the execution of the work shall be protected against the damage by the contractor. 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

25. The contractor will not have any claim in case of any delay by the Engineer-in-Charge in removal of trees or shifting, removing of telegraph, telephone or electric lines (overhead or underground), water and sewer lines and other structure etc. if any, which may come in the way of the work. However, suitable extension of time can be granted to cover such delays.

26. Contractor may be required to execute this work under foul position. The decision of the Engineer- in-charge whether the position is foul or not shall be final and the binding on the contractor and nothing extra for executing the work in foul position is payable, beyond what is provided in the schedule of quantities.

27. For completing the work in time, the contractor might be required to work in two or more shifts, including night shift and no claims whatsoever shall be entertained on this account, not withstanding the fact that the contractor will have to pay to the labourers and other staff engaged directly or indirectly on the work according to provisions of labour regulation and the agreement entered upon and / or extra amount for any other reasons.

28. The rates for all the items of the of work unless otherwise specified shall include cost of all labour, materials, de watering and removal of silt, mud, vegetation etc. and other inputs required for the execution of the work. Only the material stated in the schedule of quantities and in schedule "B" shall be issued by the department. In case any material supplied free of cost by the department is lost/damaged after issue while in transit or from the custody of the contractor recovery shall be made at the current replacement cost of the material plus ten percent.

29. Unless otherwise specified the rates are applicable for all heights depths, lead & lifts involved and the execution of work in or under water and or liquid mud including making diversion channels if necessary.

30. No claim for the idle labour, machinery and establishment on account of suspension/stoppage of work for any reason whatsoever shall be admissible under any circumstances.

31. The contractor shall take all precautions to avoid accident by exhibiting necessary caution boards by providing red flags, red lights &barriers. The contractor shall be responsible for any accident at the site of work and consequences thereof.

32. The work shall be carried out in such a manner so as not to adversely effect or disturb other works being executed by other agencies near the site of work.

33. The site shall be cleared & all the surplus and unserviceable material shall be disposed off as directed by the Engineer-in-Charge.

34. Stipulated material shall be issued for use at site on works, all the items where such materials are required. For factory made product like pre-cast cement tiles, pre-cast hollow concrete blocks, pre-cast foam concrete blocks, pre-cast RCC pipes etc. stipulated material shall not be issued.

35. The work of approach road in the entire stretch shall be completed to safe level in one working season if it lies in the Khadir width of river.

36. The work shall be carried out in such a manner so as not to interfere or effect or disturb other works being executed by other agency if any.

37. The Malba/garbage, removed from the site shall be disposed off by the contractor at any Suitable places as directed by Engineer-in-charge.

38. The contractor shall have to mention the detail of Hot Mix Plant from where he intends to bring the bituminous mix. The plant including all material to used in the bituminous mix shall be open to inspection by Engineer-in-charge or his authorised representative, wherever required.

39. **Permission coordination and liaising of many Government Department like Delhi Traffic Police, DJB etc. will be obtained by the contractor himself and for this nothing shall be paid extra.**

40. **Incidental charges for taking permission from traffic police/penalty imposed by traffic police for violations of traffic rules by police local bodies etc. shall be borne by the contractor.**

41. **The contractor shall dispose off the malba at nearby dumping ground which includes all leads and lifts no dumping ground shall be provided / arranged by the department.**

42. The dismantle material/building rubbish received from dismantling/demolishing shall be dumped to the dumping ground in properly covered truck with precaution. Agency shall submit the hard copy of photograph showing the properly covered truck with precaution. Agency shall submit the hard copy of photograph showing the properly covered truck disposing the dismantles material/building rubbish. Failure of which shall be sternly dealt and a penalty @ Rs. 500/- per trip of truck shall be levied and the decision of Engineer-in-charge shall be final & binding.

43. Agency/contractor shall not dump the construction material on the metalled road and shall keep the construction material on the physically demarcated space by the Engineer-in-charge.

44. All the building material responsible for pollution shall be brought at site from sources covered by tarpaulin and shall take all precautionary measure to ensure that no dust particles are permitted to pollute the air quality, failure of which agency shall be liable to pay damages as decided by Engineer- in-charge.

45. All the trucks or vehicle of any kind, which are used for construction purpose and/or are carrying construction materials like cement, sand and other allied material shall be fully covered in the process of transporting the material.

46. There shall be no burning of leaves, plastic etc. at construction site.

47. The agency should ensure that at least minimum wages rates are paid to the workers. In this regard, following procedure to be adopted.

(a) Wages due to every worker shall be paid to him direct **by contractor through Bank or ECS or Online transfer to his Bank Account.**

(b) It shall be the duty of the contractor to ensure the disbursement of **wages through bank account of labour.**

(c) The contractor shall obtain from the Junior Engineer or any other authorized representative of the Engineer-in-Charge as the case may be, a certificate under his signature at the end of the entries in the "Register of Wages" or the "Wage-cum-Muster Roll" as the case may be in the following form:-

"Certified that the amount shown in column No……..Has been paid to the workman concerned **through bank account of labour** on …….. at....."

48. No contractor /Builder or any person would be permitted to store /dump construction material or debris on metalled road. All precautionstobetakentoensurethatnodustparticlesarepermittedtopollute the air quality as a result of such storage.

49. It is necessary that the contractor may keep a record of procurement of materials required in this work. It will be sole responsibility of the contractor to produce the same to any agency, if asked for at any stage.

50. The work will be supervised by the staff of the department. However, the contractor will be sole responsible for its quality. If any stage, during execution or after execution, it is found that the material used, was not as per specifications or the quality proves to be substandard, the contractor will be liable to be prosecuted.

51. The concretization shall not be allowed up to 1 meter around existing tree on work site. No measurement shall be done for payment for concrete within I meter around tree and rectification shall be done at the risk and cost of contractor. ThecontractorshallbepenalizedforRs.1,000/-for violation of each case. The contractor shall also take all precautionary measures to avoid any damage to existing trees and plants. All necessary arrangement shall be made by the contractor. No extra payment shall be made to contractor on this account.

52. Wherever because of width of the road/footpath/divider/drain etc. It is not possible to leave area of 1 meter around the trees then the space shall be left to lesser dimensions commensurate with the space available, but it shall be ensured that the trees have sufficient area for receiving the water and air to its roots. Any deviation from the dimension of 1 meter shall be made only after approval of Engineer-in- charge.

53. The contractor must implement effective dust control measures during milling operations. The milling machine must be equipped with a functional water spray system to suppress dust at the cutting drum and conveyor or water spraying shall be continuously maintained during milling. The contractor shall ensure that dust emissions are minimized so that no visible dust spreads beyond the work zone. After milling, the road surface must be cleaned using mechanical or vacuum sweepers, and additional water sprinkling shall be carried out if required. The contractor will be fully responsible for complying with applicable environmental regulations issued by the **Central Pollution Control Board of India, and any cost related to dust suppression, water supply, and cleaning shall be deemed included in the quoted rates.

PARTICULAR SPECIFICATION

1.0 GENERAL

1.1 The work, in general shall be executed as per the description of item, approved design and drawings, particular specifications & special conditions attached, MORTH specifications for road and bridge works (Fifth revision) 2013, CPWD specifications 2019 Vol.-I & II with correction slips upto the date of the opening of Tender and relevant specifications of B.I.S. with correction slips issued upto the last date of issue of tender. Where the aforesaid provisions and conditions are silent, relevant specialized literature and manufacturers' specifications shall be followed for the execution of work.

1.2 In case of discrepancy between the schedule of quantities, the specifications and/or the drawings; the following order of precedence will be followed: -

(i) Description of items in Schedule of Quantities
(ii) Particular specifications and special conditions.
(iii) Drawings.
(iv) MORTH specifications for Road & Bridge work (Fifth Revision) 2013 with correction slips issued upto the last date of issue of tender.
(v) IRC specification/Codes.
(vi) CPWD specifications 2019 Vol.-I & II with correction slips upto the date of the opening of Tender.
(vii) Relevant Specifications of B.I.S.

1.3 The contractor shall, at his own cost, construct, equip and establish a testing laboratory at site with necessary apparat us, instrument and equipment such as weighing scale, graduated cylinder, standard sieves, thermometer, Slump Cones etc. and engage the experienced technical staff for conducting day to day tests and to ensure that material conforming to prescribed standard only are used in the work. The Engineer-in-Charge reserves right to conduct field tests to ensure that the quality is consistent with the prescribed specifications. If any material of end product is found defective or substandard, the same will have to be replaced/redone at the cost of contractor.

1.4 The necessary tests shall be conducted in the laboratory of Central Road Research Institute, IIT Delhi, JMI Delhi, NIT Delhi, any Government Engineering Collage are allowed by Engineer-in- Charge without prior approval of any higher authority /officer provided these labs have all necessary facility to carry out the required tests, or any other laboratory approved by the Engineer- in-charge. The sample for carrying out all or any of the tests shall be collected by the Engineer-in- charge or on the behalf of the Officer-in-charge of the quality control wing of Central Design Office, CPWD and his authorised sub ordinate or by the officer-in-charge, PWD (GNCTD) laboratory and his authorised subordinate for carrying out the independent quality control tests and the results will be binding on the contractor. **All expenditure to be incurred for testing of samples e.g. packing sealing transportation, loading, unloading etc including testing charges for all materials etc shall be borne by the contractor, irrespective of the norms of test results.**

1.5 The contractor or his authorised representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate him, the result of such tests and consequences there up on shall be binding on the contractor.

1.6 The work shall be executed mechanically unless otherwise directed by Engineer-in-Charge. Following major machinery is to be arranged by the contractor :-

(a) J.C.B., Pock lain and dumpers for excavation and disposal of excavated earth and road materials.
(b) Concrete Pump for placing the concrete.

1.7 All dismantled unserviceable material unless otherwise stated shall be the property and liability of the contractor who will take it away from the site of work and quote his rate accordingly. The decision regarding un-serviceability of material will rest with Engineer-in-Charge.

1.8 All dismantled/excavated serviceable material shall be the property of Govt. which shall have to be handed over to the Engineer-in-Charge by the contractor and proper account shall be maintained.

1.9 Material such as cement, fine sand, aggregates, bricks for execution shall be as per CPWD Specification relevant agreement items.

1.10 The work shall be executed and measured as per metric dimensions given in the Schedule of quantities, drawings etc. (F.P.S. units wherever indicated are for guidance only).

1.11 Wherever any reference to any Indian Standard Specification occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued thereto or revisions thereof, if any.

1.12 Unless otherwise specified in the schedule of quantities the rates for all items of the work shall be considered as inclusive of pumping out or bailing out water, if required, for which no extra payment will be made. This will include water encountered from any source, such as rains, floods, and sub-soil water table being high due to any other cause whatsoever.

1.13 Unless otherwise specified in the schedule of quantities, particular specifications or CPWD specifications (subject to the order or preference) the rates tendered by the tenderer shall be all inclusive and shall apply to all lifts, all heights and all floor including terrace, leads and depths and nothing extra over and above the schedule of quantity shall be payable on this account.

1.14 The work shall be carried out in accordance with the Architectural drawings, structural drawings and approved shop drawings. The structural shop and architectural drawings shall have to be properly correlated before executing the work. In case of any difference noticed between architectural and structural drawings, the contractor shall obtain final decision of the Engineer-in-charge. In case of any discrepancy in the item given in the schedule of quantities appended with the tender and architectural drawings related to the relevant items, the former shall prevail unless and otherwise given in writing by the Engineer in charge. Nothing extra shall be payable on this account.

1.15 Wherever any reference to any Indian Standards occurs in the documents relating to this contract, the same shall be inclusive of all amendments issued thereto or revisions thereof, if any, up to the date of receipt of tenders.

1.16 The following additional specifications shall apply:

1.16.1 All stone aggregate and stone ballast shall be of hard stone variety and to be obtained from quarries near & around to site of work, approved by the Department of Mines, and as per direction of the Engineer-in-Charge.

1.16.2 Coarse sand should be obtained from sand quarries of nearby rivers, approved by the Department of Mines, and as per direction of the Engineer in charge. Sand to be used for cement concrete work including RCC, mortar for masonry and plaster work shall be of standard quality and screened as required. It shall be clean sand.

1.17 In case of non-availability of sand, the agency may be permitted at the discretion of Engineer-in Charge to use crushed stone sand on their request on production of adequate proof of non-availability of the same, provided it conforms to grading and other requirements given in CPWD specifications. The change in sand type or source would require revision of Mix Design of Concrete from the approved laboratories for which nothing extra shall be paid. In case of use of crushed stone sand, all necessary precautions for CC work, RCC work, masonry work, plaster work and all other related works shall be taken by the agency as per relevant CPWD specifications and BIS codes without any extra cost.

1.18 The rates for all items of work shall unless clearly specified otherwise include for all floor levels of building and cost of all operations and all inputs of labour, material, T&P, scaffolding, wastages, watch and ward, other inputs, all incidental charges, all taxes, GST, duties, levies etc. required for execution of the work.

1.19 All crossings, embedment etc. in walls and floors for water supply, drainage and sanitary pipes, fittings etc. shall be provided for individual walls and floors so as to avoid cuttings of masonry work and floors. All such areas shall be made good during finishing and nothing extra shall be payable on these accounts.

1.20 Product delivery, storage and handling of chemicals:

The contractor shall construct storage space for Chemicals to ensure that the storage conditions are as recommended by the manufactures.

All the materials shall be procured and delivered in sealed containers with labels legible and intact.

All the chemicals (polymers, epoxy, water proofing compound, plasticizer, Polysulphide, all exterior and interior paints, polish etc.) shall be procured in convenient packs say 20 litres/Kgs.} capacity packing only or as approved by the Engineer-in-Charge, and not in bigger capacity containers, say 200 litre (Kgs.) drums unless otherwise specifically permitted by the Engineer-in-Charge. One sample from each lot of the chemical procured by the contractor shall be tested in a laboratory as approved by the Chief Engineer.

All material required for the execution of the work shall be got approved, procured and deposited with the Departmental supervisory staff. The materials shall be kept in joint custody of the contractor and the Department. The watch and ward of such material shall, however, remain to be the responsibility of the contractor and no claim, whatsoever, on this account shall be entertained. Different containers of each chemical shall be serially numbered on packing and also consumed in that order.

Day-to-Day account of receipt, issue and balance shall be regulated by the Department and proper account shall be maintained at site of work in the prescribed form as per the standard practice.

All the chemicals shall be procured by the contractor directly from the manufacturer. In exceptional circumstances, the contractor may be allowed to procure the materials from the authorized dealers of the manufacturers, if specifically permitted by the Engineer-in-Charge.

The original copies of challan / cash memos towards the quantity of various chemicals procured shall be made available by the contractor at the request from the Engineer-in-Charge and a copy of the same shall be kept in record.

The Name of manufacturers, manufacturer's product identification, manufacturer's mixing instructions, warning for handling and toxicity and date of manufacturing and shelf life shall be clearly and legibly mentioned on the labels of each container.

The contractor shall submit for the chemicals procured, manufacturer's and / or authorized dealer's certificate regarding supplying and verifying conformance to the material specifications, as specified.

All filled containers shall be handled in safe manner and in a way to avoid breaking container seals.

Empty containers of the chemicals should not be removed from site till the completion of work and shall be removed only with the written approval of the Engineer-in-Charge.

All arrangements for measuring, dosing and mixing of material / chemicals at site have to be made by the contractor.

Contractor shall suitably advise his site Engineer and all the workers as regards safe handling of chemicals. Necessary protective and safety equipment's in form of hand gloves, goggles etc. shall be provided by the contractor and be also used at site.

All incidental charges of any kind including cartage, storage and wastage and safe custody of material etc. shall be borne by the contractor and no claim, whatsoever, shall be entertained on this account.

The chemicals shall be tested in an independent laboratory as approved by the Chief Engineer at the frequency as specified. If required, more samples may have to be tested as per the directions of the Engineer-in-Charge. Nothing extra shall be payable on this account. The testing charges shall be borne by the contractor.

2.0 EARTH WORK

2.1 Earth work shall be executed as per CPWD specifications.

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

2.3 All the major excavation shall be carried out by mechanical excavator.

2.4 The contractor shall make, at his own cost, all necessary arrangements for maintaining water level, in the area where works are under execution low enough so as not to cause any harm to the works or problems in carrying out with the execution and the rates for all items of work shall be considered as inclusive of pumping out or bailing out water, if required, and for which no extra payment shall be made. This will include water coming from any source, such as rains, accumulated rain water, floods, leakages from sewer and water mains subsoil water table being high or due to any other cause whatsoever. The contractor shall make necessary provision of pumping, dredging, bailing out water coming from all above sources and excavation and other works shall be kept free of water by providing suitable system approved by the Engineer-in-Charge.

2.5 De-watering required, if any, shall be done conforming to BIS Code IS: 9759 (guide lines for de-watering during construction) and / or as per the specifications approved by the Engineer-in-Charge. Design of an appropriate and suitable dewatering system shall be the Contractor's responsibility. Such scheme shall be modified / augmented as the work proceeds based on fresh information discovered during the progress of work, at no extra cost. At all times during the construction work, efficient drainage of the site shall be carried out by the Contractor and especially during the laying of plain cement concrete, taking levels, etc. The Contractor shall also ensure that there is no danger to the nearby properties and installations on account of such lowering of water table. If needed, suitable precautionary measures shall be taken by the Contractor. Also, the scheme of dewatering adopted shall have adequate built in arrangement to serve as stand-bye to attend to repair of pumps etc. and disruption of power / fuel supply. Nothing extra shall be payable on this account.

In trenches where surface water is likely to get into cut / trench during monsoons, a ring bund of puddle clay or by any other means shall be formed outside, to the required height, and maintained by the Contractor. Also, suitable steps shall be taken by the Contractor to prevent back flow of pumped water into the trench. Nothing extra shall be payable on this account.

3.0 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) Bulking of sand.
(vi) Silt content of sand.
(vii) Temperature measuring with thermometer with brass protected end 0-200° C.
(viii) Proctor density of compacted earth.
(ix) Any other tests as per CPWD specifications.

4.0 Brick work: -

(i) The brick work shall be carried out with good quality well burnt FPS Bricks of class designation of 75.
(ii) The rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work.
(iii) Brick masonry shall be with FPS. Contractor shall intimate the source of supply of bricks & samples of the bricks shall be got approved from the Engineer-In-Charge in advance.

5.0 Stone/ Marble work: -

Exposed face for cladding (veneering) work wherever specified as rough chiseled shall be hand dressed unless otherwise specified in the nomenclature of item. The vertical face that is to come against backing of masonry shall be of thickness, as specified, with permissible tolerance of $\pm$ 2 mm. The depth or gap between the exposed face of the stone and straight edge held against the surface shall not be more than 6mm.

All holes, rebates, recesses etc. for providing fixing and inserts shall be predrilled and precut and worked using precision machine tools. Nothing extra on this account shall be payable.

Slabs of marble, granite, kota and sand stone shall be machine cut and polished, true to shape, size and dimensions as per drawings and directions of Engineer-in-Charge. **Nothing extra on this account shall be payable.**

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. The contractor are advised to see the approved samples of marbles, Kota stone, Granite stone etc. in the office of the Engineer-in-Charge before quoting the rates. The same quality of stone shall be used in the project.

Sequence of execution for cladding work shall be suggested by the contractor for approval of Engineer-in-charge.

Cramps and other mechanical fixing devices which will show on the face of the stone shall not be permissible unless otherwise specifically mentioned.

6.0 Flooring: -

i) All work in general shall be carried out as per CPWD Specifications.
Only machine cut stone slabs of marble, granite, kota, Jaiselmer etc.as specified shall be used for flooring work.

Wherever flooring is to be done in patterns of tiles / stone, the contractor shall get samples of each pattern laid and approved by the Engineer-in-charge before final laying of such flooring for which nothing extra shall be paid.

ii) 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.

i) Nothing extra shall be payable for using combination of marble, granite, kota, sand stone slabs & ceramic tiles in the required pattern at various locations.

ii) Nothing extra will be paid for the additional thickness of bed mortar that will be required to achieve uniform finished surfaces on account of difference in specified thickness of marble, granite, kota stone, sand stone & ceramic tiles.

iii) Flooring in toilets, verandah, kitchen, courtyard etc. shall be laid to the required slope/gradient as per the directions of the Engineer-in-Charge.

iv) Samples of the materials shall be got approved from the Engineer-in-Charge well in time and kept in safe custody at the site till completion of work.

v) The pattern, spacing and locations of joints shall be as per drawings and direction of the Engineer-in-Charge. **Nothing extra on this account shall be payable.**

vi) Projections shall be rounded at the edges or half rounded as per drawings and directions of Engineer-in-Charge for which payment shall be made separately if, necessary.

vii) The samples of flooring, dado & skirting as per approved pattern shall be prepared and got approved from the Engineer-in-Charge before execution of work.

viii) Kota / marble stone used over the treads/ risers of the stair cases shall be as per pattern approved by Engineer-in-Charge. Nothing extra on this account shall be payable.

ix) Whenever the Kota stone/marble stone flooring are to be provided in treads of staircase. It should be provided in one piece with pre finished nosing and pre polished exposed surfaces and edges. Kota stone flooring or granite stone flooring to be provided on top of cooking platform shall be pre polished with pre finished nosing. It should be provided in not more than 2 (two) pieces on any side of platform

x) Whenever Kota stone 25 mm thick is used in skirting. It should be executed by making shallow chase in wall to given flush surface.

7.0 Stone/ Marble work:-

i) Slabs of marble, granite, kota and sand stone shall be machine cut and polished, true to shape, size and dimensions as per drawings and directions of Engineer-in-Charge. **Nothing extra on this account shall be payable.**

ii) 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. The contractor are advised to see the approved samples of marbles, Kota stone, Granite stone etc. in the office of the Engineer-in-Charge before quoting the rates. The same quality of stone shall be used in the project.

iii) Sequence of execution for cladding work shall be suggested by the contractor for approval of Engineer-in-charge.

8.0 Finishing and painting: -

1 The work shall be done in accordance with CPWD Specifications -2019 Vol. I to Vol. II with upto date correction slips and the manufacturer's specifications where CPWD specifications are not available.

2 The quantity of paint required as per the theoretical consumption including wastages, if any, shall be procured from the approved manufacturer or his authorized dealers and deposited with the representative of the Engineer-in-Charge at site.

3 The paint shall be obtained in smaller packing (around 20 litre).

4 The paint shall be kept in the joint custody of the Department and the Contractor and day-to-day account of receipt and issue shall be maintained. However, the safe custody and watch and ward shall remain to be the responsibility of the Contractor. Nothing extra shall be payable on this account.

The name of the manufacturer, manufacturer's product identification, manufacturer's mixing instructions, warnings and instructions for handling and application, toxicity and date of manufacturing and shelf life shall be clearly and legibly mentioned on the labels of each container. These details shall be kept in record. The material shall be consumed in the order of material brought to site, first come first consume basis. The Contractor shall obtain and submit to the Department the manufacturer's certificate for compliance of the various characteristics of the materials as per the manufacturer's specifications and also copy of the manufacturer's test report for the record.

Empty containers of the paints shall not be removed from site till the completion of the work unless otherwise permitted and shall be removed only with the permission of the Engineer-in-Charge or his authorized representative at site of work.

All arrangements for measuring, dosing etc. at site shall be made by the Contractor. Nothing extra shall be payable on this account.

The Contractor shall apply samples of each kind of paint for the approval of shade and colour as per the directions of the Engineer-in-Charge before procuring the paint in mass.

All incidental charges of cartage, storage, wastage, safe custody, scaffolding, cost of samples and mock ups etc. shall be borne by the Contractor and no claim, whatsoever, shall be entertained on this account.

9.0 M S RAILINGS

9.1 Providing, fabricating and fixing in position welded built-up section using MS pipes and connecting plates as per approved drawing and of required diameter & thickness as per the directions of the Engineer-in-Charge, at the junctions of doors, on walls, other locations as directed etc. including cutting, welding, grinding, bending to required profile and shape, hoisting, buffing and polishing, cutting chase/embedding in RCC / Masonry, fixing using screws, nuts, bolts and washers or fasteners as required to make it rigidly fixed & stable and making good the plaster/flooring etc. all complete, at all floors and all levels as directed by the Engineer-in-Charge.

9.2 Rate includes cost of all inputs of materials, labour, T&P, etc. involved in the work and all incidental charges to execute this item. However, for the purpose of payment only the actual weight of the MS pipes and MS plates/sections provided and fixed shall be measured in kg.

10.0 Road work:

a) The road work by using Granular sub base, wet mixed macadam, Dense bitumen macadam/ Dense bituminous concrete as per nomenclature shall be laid to required camber and slope as per MORTH Specifications for Roads & Bridge works (Fifth Revision) –2013 and CPWD specifications. The central verge and footpath kerb stones (fixed 250mm/200mm above carriageway finished level), base for paver blocks and 60mm thick paver blocks, bell mouth and drainage pipe etc. shall be laid as per specifications and direction of Engineer in Charge.

b) The road furniture comprising of delineators, glow studs and cat eye etc. shall confirm to is Specifications and shall be fixed as per direction of Engineer in charge.

c) The thermoplastic paint on main carriageway for edge/ lane marking shall be marked as per direction of Engineer-in-Charge. All the ingredients of thermoplastic paint shall confirm to IS specifications

11.0 Sanitary Installation/ Water Supply/ Drainage:-

i) 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.

ii) The entire responsibility for the quality of work will however rest with the building contractor only and he shall submit a guarantee bond as per proforma enclosed.

iii) The Centrifugally cast (spun) iron S&S pipe 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.

iv) The contractor shall give a satisfactory Performance test of the entire installation(s) before the work is finally accepted and nothing extra shall be payable to the contractor on this account.

v) P or S and floor traps in WCs shall be of deep seal type of approved make and shall have a minimum water seal of 75mm. Floor traps shall have a minimum water seal of 50mm.

vi) The contractor shall be responsible for all the protection of sanitary water supply fittings and fixtures against pilferage and breakage during the period of installation until the completion / handing over of the work.

vii) The pig lead to be used in jointing as per C.P.W.D. specification- 2019 Vol I &II with up-to-date correction slips. A variation of 5% is allowed on higher side. **However, in case of variation on lower side, the work shall be dismantled and redone by the contractor at his own cost.** viii) The contractor shall submit completion plans for water supply, internal sanitary installations and building drainage work within 30 (thirty) days of the date of completion. These plans are to be submitted on drawings prepared preferably through computers (1 original copy + 3 photocopies) on suitable scales to show the general arrangement and desired details at his own cost. **Nothing extra on this account shall be payable**. In case the contractor fails to submit the completion plans as aforesaid, **security deposit shall not be released**.

viii) **Guarantee Bond (for Construction works):**
For the entire work of Sanitary Installations & Water Supply, five years guarantee bond in the prescribed proforma shall be executed by the contractor to meet his liabilities under the guarantee bond. Five percent of the cost of the work done under respective sub-head of the 'Schedule of Quantities' shall be retained as Performance security and the amount so withheld would be released after five years from the date of completion of the entire work under the agreement subject to the satisfactory Performance of sanitary installations and water supply system. If defects are noticed during the guarantee period, the same shall be rectified by the contractor within seven days of receipt of intimation of such defects in the work, failing which, the same will be got done at the risk and cost of the contractor. In case the rectification is got done at the risk and cost of the contractor, the entire amount of Performance security should stand forfeited and shall be absolutely at the disposal of the Government.

ix) The Performance security deducted may be released in full if bank guarantee of equivalent amount for five years in acceptable form is deposited in Favors of Engineer-in-Charge.

x) The Performance security shall be in addition to the security deposit, Performance guarantee & Performance security mentioned elsewhere in the document.

xi) Unless otherwise specified nothing extra whatsoever shall be paid for executing the work as per aforesaid particular specifications.

12.0 QUALITY ASSURANCE/TESTING OF MATERIALS

12.1 Water tanks, taps, sanitary, water supply & drainage pipes, fittings & accessories should conform to bye-laws of local body/corporation, where CPWD specifications are not available. The Contractor (s) should engage approved, licensed plumbers for the work and get the materials (fixtures/fittings) tested, by the municipal Body/Corporation authorities wherever required at his own cost. The Contractor shall submit for the approval of the Engineer-in-Charge, the name of the plumbing agency (along with their working experience in recent past) proposed to be engaged by him.

12.2 With each Running Bill, the details of test carried out shall be submitted by the contractor as per Performa given in the tender document.

12.3 Samples of materials required for testing shall be provided free of charge by the contractor. The contractor shall provide at his own cost suitable weighing and measuring arrangements at site for checking the weight / dimension as may be necessary. The sealed samples are to be handed over to the testing lab by the contractor in the presence of representative of Engineer in charge. The testing charges for all mandatory tests shall be borne by the Contractor.

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

12.5 The Contractor shall at his own risk and cost make all arrangements and shall provide all such facilities including material and labour, the Engineer-in-Charge may require for collecting, preparing, forwarding the required number of samples for testing as per the frequency of test stipulated in the contract specifications or as considered necessary by the Engineer-in-Charge, at such time and to such places, as directed by the Engineer-in-Charge. Nothing extra shall be payable for the above.

12.6 The Contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate him, the result of such tests and consequences thereon shall be binding on the Contractor. The Contractor or his authorized representative shall remain in contact with the Engineer-in–Charge or his authorized representative associated for all such operations. No claim of payment or claim of any other kind, whatsoever, shall be entertained from the Contractor.

13.0 Maintenance of Register of Tests

13.1 All the registers of tests carried out at Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge.

13.2 All Samples of materials including Cement Concrete Cubes shall be taken jointly with Contractor by representative of the Engineer in Charge. All the assistance shall be provided by the contractor. Cost of sample materials is to be borne by the contractor and he shall be responsible for safe custody of samples to be tested at site.

13.3 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 representative of the Engineer in Charge.

13.4 All the entries in the registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by Engineer in Charge or his representative. Contractor shall be responsible for safe custody of all the test registers.

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

15.0 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. 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.

16.0 In addition to the supervision of work by PWD engineers, the Architects deployed by the Client/PWD, CPWD Quality Control/ Assurance Team and Third-party Quality Control/ Assurance Team shall also be carrying out regular and periodic inspection of the ongoing activities in the work and deficiencies, shortcomings, inferior workmanship pointed out by them shall be communicated by CPWD engineers to the contractor. Upon receipt of instructions from Engineer in Charge, these are also to be made good by necessary improvement, rectification, replacement upto his complete satisfaction. Special attention shall be paid towards line and level of internal and external plastering, exposed smooth surface of RCC members by providing fresh shuttering plates, rubberized linings to all the shuttering joints, accurate joinery work in wooden doors and windows, thinnest joints in stone/ tiling / cladding work, non-hollowness in floor and dado tiles work, protection of scratches over flooring by impounding layer of

plaster of Paris, water tight pipe linings, absence of hollow vertical joints in brick masonry, proper compaction of filled up earth etc. to achieve desired/ specified quality and up keeping of quality assurance shall be of paramount importance, as such.

17.0 The Contractor shall submit, within 10 days after the date of award of work, a detailed and complete method statement for the execution, testing and Quality Assurance, of such items of works, as directed by the Engineer-in-Charge. All the materials to be used in the work, to give the finished work complete in all respects, shall comply with the requirements of the specifications and shall pass all the tests required as per specifications as applicable or such specifications / standards as directed by the Engineer-in-Charge. However, keeping the Quality Assurance in mind, the Contractor shall submit, on request from the Engineer-in-Charge, his own Quality Assurance procedures for basic materials and such items, to be followed during the execution of the work, for approval of the Engineer-in-Charge.

18.0 FIELD LABORATORY

18.1 The contractor has to establish within 2 weeks from the award of work a field laboratory at site including all necessary equipment's and skilled manpower for the Field Tests as indicated in the tender document at his own cost to have proper quality control. Rs.5,000/-per day shall be recovered from the contractor for any delay beyond the specified period. If contractor fails to establish lab within additional period of 15 days, the Engineer in charge shall initiate action as deemed fit under relevant clauses of the agreement.

18.2 For performing the above tests, the Field-Testing Equipment and Instruments as indicated in the tender document are to be arranged and maintained by the contractor at his own cost.

18.3 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.

18.4 The list of Laboratory/ Field equipment referred above is 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.

19.0 SAMPLE OF MATERIALS

19.1 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 given in the tender document 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.

19.2 The Contractor shall procure and provide all the materials from the manufacturers / suppliers as per the list attached with the tender documents, as per the item description and particular specifications for the work. The equivalent brand for any item shall be permitted to be used in the work, only when the specified make is not available. This is, however, subject to documentary evidence produced by the contactor for

non-availability of the brand specified and also subject to independent verification by the Engineer-in-Charge. In exceptional cases, where such approval is required, the decision of Engineer-in-Charge as regards equivalent make of the material shall be final and binding on the Contractor. No claim, whatsoever, of any kind shall be entertained from the Contractor on this account. Nothing extra shall be payable on this account, if the cost of equivalent material is more as compared to the make mentioned in the tender document but difference in cost will be recovered, if cost of equivalent material is lesser as compared to the make mentioned in the tender document. Also, the material shall be procured only after written approval of the Engineer-in-Charge.

19.3 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. 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.

19.4 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.

19.5 BIS marked items (except cement & steel for which separate provisions have been made) 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.

19.6 For certain items, if frequency of tests is neither mentioned in the CPWD Specifications nor BIS, then tests shall be carried out as per directions of Engineer-in-Charge.

CONDITION FOR RMC AND DESIGN MIX CONCRETE

1. **RCC & CC Work (Design mix concrete):-**The RCC & CC work shall be done with Design Mix Concrete unless otherwise specified. In the nomenclature of items wherever letter M has been indicated, the same shall imply for the Design Mix Concrete. For the nominal mix of CC, CPWD Specifications shall be followed. The Design Mix Concrete will be designated based on the principles given in IS: 456, 2000. The Contractor shall submit design mixes for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting requirements specified. In case of use of admixture and or white cement, the mix shall be designed with these ingredients as well.

   The first concrete mix design / laboratory tests, with admixture (if to be used by contractor at his own cost) and without admixture will be carried out by the contractor through approved laboratory **mentioned in the List**.

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

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

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

   Grade of Concrete: The compressive strength of various grades of concrete shall to be given as below:

	Grade designation	Compressive strength on 15 cm cubes min. 7 days (N/mm2)	Specified characteristic compressive strength at 28 days (N/mm2)	Maximum water cement ratio
I	M 25	As per design	25	0.50
Ii	M 30	As per design	30	0.45
iii	M 35	As per design	35	0.45
Iv	M 40	As per design	40	0.40
V	M 50	As per design	50	0.50

Note

(i) In the designation of a concrete mix letter M refers to the mix and number to the specified characteristic compressive strength of 15 cm x 15 cm x 15 cm – cube 28 days expressed in N/mm2

The cement content in concrete for structural members for all RCC and PSC members shall be governed by design requirement and as per codal provisions.

Design slump has to be constantly monitored and maintained during placing of concrete through slump tests carried out as per CPWD specification 2019 Vol. 1 for Mortar, Concrete and RCC works, and records maintained accordingly.

The concrete mix design/laboratory tests with and without admixture shall be got done by contractor at his own cost and will be carried out by the contractor through one of the Approved laboratory/Test houses /Govt. Engineering Institutions as directed by the Engineer-in-charge.

The various ingredients for mix design / laboratory tests shall be sent to the test houses through the Engineer-in-Charge and the samples of such aggregate & cement shall be preserved at site by the department

The contractor shall submit the mix design report from any of above approved laboratory for approval of Engineer-in-Charge within 30 days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the mix design is approved by the Engineer-in-charge. In case of white Portland cement and the likely use of admixtures in concrete with PPC/White Portland cement the contractor shall design and test the concrete mix by using trial mixes with white cement and/or admixtures also for which nothing extra shall be payable.
In case of change of source or characteristic properties of the ingredients used in the concrete mix during the work, a revised laboratory mix design report conducted at laboratory established at site shall be submitted by the contractor as per the direction of the Engineer-in-Charge.

APPROVAL OF DESIGN MIX
The mix design for a specified grade of concrete shall be done for a target mean compressive strength Tck=Fck+1.65 s.
Where Fck = Characteristic compressive strength of 28 days
s = Standard deviation which depends on degree of quality control
The degree of quality control for this work is “good” for which the standard deviation (s) obtained for different grades of concrete shall be as bellows:

Grade of Concrete	For “Good” quality of control
M 25	4.00
M 30	5.00
M 35	5.00
M 40	5.00
M 50	5.00

Of the six specimen of each set three shall be tested at seven days and remaining three at 28 days. The preliminary tests at seven days are intended only to indicate the strength to be attained at 28 days.

All cost of mix designing and testing connected therewith including charges payable to the laboratory shall be borne by the contractor.

The batching plant shall conform to IS:4925. It shall have the facilities of presetting the quantity to be weighed with automatic cutoff when the same is achieved. Concreting at places may have to be resorted to through concrete pump for which nothing extra shall be paid.

All other operations in concreting work like Mixing, Slump, Laying Placing of concrete, compaction curing etc. not mentioned in this particular specification for Design Mix of concrete shall be as per CPWD specification.

1.1 Production of Concrete
All concrete may be produced from fully computerised weigh-batching plant of suitable capacity conforming to IS:4925 with the arrangements for automatic dispensing of admixture and having facility of giving print out indicating weight / details of all ingredient of concrete in each lot/ batch and variations from the approved design mix if any.
Contractor may procure concrete from approved RMC plants or he may establish his own plant at site. Requisite approval and NOC including environmental clearance for establishing plant shall be obtained by contractor. Land/space for establish plant shall also be arranged by contractor. Nothing extra shall be paid on this account.
The batching and mixing plant shall be fully automatic of suitable capacity not less than 30cum./hour. Automatic batcher shall be charged by devices which when actuated by a single starter switch will automatically start the weighing operation of each material and stop automatically when the designated weight of each material is fed in the mixer. The batching plant shall have automatic arrangement for dispensing the admixture and shall be capable of discharging water in more than one stage. A batching plant essentially shall consist of the following components:

- Separate storage bins for different sizes of aggregates, silo for cement and flyash; water storage tank.
- Batching equipment
- Mixers
- Control Panels
- Mechanical material feeding and elevating arrangements

The compartments of storage bins for aggregates shall be approximately of equal size. The cement compartment shall be centrally located in the batching plant. It shall be water tight and provided with necessary air vent, aeration fittings for proper flow of cement & emergency cut off gate. The aggregate and sand shall be charged by power operated centrally revolving chute. The entire plant from mixer floor upward shall be enclosed and insulated. The batch bins shall be constructed so as to be self cleansing during draw-down. The batch bins shall in general conform to the requirements of IS:4925.

The batching equipment shall be capable of determining and controlling the prescribed amounts of various constituent materials for concrete accurately i.e. water, cement, sand, individual size of coarse aggregates etc. The accuracy of measuring devices shall fall within the following limits.

Measurement of Cement:	$\pm$ 2% of the quantity of cement in each batch
Measurement of Water:	$\pm$ 3% of the quantity of water in each batch
Measurement of Aggregate:	$\pm$ 3% of the quantity of aggregate in each batch
Measurement of Admixture:	$\pm$ 3% of the quantity of admixture in each batch

The batching and mixing plant shall have the provision of adjusting the plus / minus quantity of various ingredients in the next batch so that there is no variation in quantity of ingredients from design mix in a lot consisting of 5 to 6 batches.

The mixer in the batching plant shall be so arranged that mixing action in the mixer can be observed from the operator's station. The mixer shall be equipped with a mechanically or electrically operated timing, signalling and metering device which will indicate and assure completion of the required mixing period. The mixer shall have all other components as specified in IS: 4925.

1.1.1 Transportation, Placing and Compaction of Concrete

Mixed concrete from the RMC / Batching plant shall be transported to the point of placement by transit mixers and placed in position through concrete pumps and/or steel closed bottom buckets capable of carrying minimum 0.6 cum concrete. In case the concrete is proposed to be transported by transit mixer, the mixing speed shall not be less than 4 rev/min. of the drum nor greater than a speed resulting in a peripheral velocity of the drum 70 m/minutes at its largest diameter. The agitating speed of the agitator shall be not less than 2 rev/min nor more than 6 rev/min of the drum. The number of revolution of the mixing drum or blades at mixing speed shall be between 70 to 100 revolutions for a uniform mix, after all ingredients, have been charged into the drum. Unless tempering water is added, all rotation after 100 revolutions shall be at agitating speed of 2 to 6 rev/min and the number of such rotations shall not exceed 250. The general construction of transit mixer and other requirement shall conform to IS:5892.

In case concrete is to be transported by pumping, the conduit shall be primed by pumping a batch of mortar through the line to lubricate it. Once the pumping is started, it shall not be interrupted (if at all possible) as concrete standing idle in the line is liable to cause a plug. The operator shall ensure that some concrete is always there in the pump receiving hopper during operation. The lines shall always be maintained clean and shall be free of dents at all stages. Special precaution shall be taken that surrounding temperature during concreting shall not exceed 30 degree centigrade.

Except where otherwise agreed to by the Engineer-in-Charge, concrete shall be deposited in horizontal layers to a compacted depth of not more than 450 mm. Unless agreed to by the Engineer-in-Charge, concrete shall not be dropped into place from a height exceeding 1.5m. In order to avoid such situations chutes, tremie pipe or closed bottom buckets shall be used. These shall be kept clean and used in such a way as to avoid segregation. Slope of the chute shall be so adjusted that concrete flows without the use of excessive quantity of water. The delivery end of chute shall be as close as possible to the point of deposit. the chute shall be thoroughly flushed with water before and after each working period and the water used for this purpose shall be discharged outside the formwork. The concrete shall be compacted by using immersion type vibrators. When the concrete is being continuously deposited to a uniform depth along a member, vibrator shall not be operated within one meter of free end of the advancing concrete. Every effort shall be made to keep the surface of the previously placed layer of concrete alive so that the succeeding layer can be amalgamated with it by the vibration process. In case the concrete in underlying layer has hardened to such an extent that it cannot be penetrated by the vibrator but is still fresh (that is, just after initial set), un-imposed bond shall be achieved between the top and underlying layer by first scarifying the lower layer before the new concrete is placed by systematically and thoroughly vibrating the new concrete. The points of insertion of vibrator in the concrete shall be so spaced that the range of action overlap to some extent and the freshly filled concrete is sufficiently consolidated at all locations. The spacing between the dipping positions of vibrator shall be maintained uniformly throughout the surface of concrete so that concrete is uniformly vibrated. The vibrating head shall be regularly and uniformly inserted in the concrete so that it penetrates of its own accord and shall be withdrawn slowly whilst running so as to allow redistribution of concrete in its way and allow the concrete to flow back into the hole behind the vibrator. The vibrator head shall be kept in one position till the concrete within its influence is completely consolidated. Vibration shall be continued until the coarse aggregate particle have blended into the surface but have not disappeared. The contractor shall keep at least one additional vibrator in serviceable condition to be used in the event of breakdowns and maintenance problems.

The vibrator head shall not be brought more than 200 mm near to the formwork as this may cause formation of water stagnations. The formwork shall be strong and great care shall be exercised in its assembly. It shall be designed to take up increased pressure of concrete and pressure variations caused in the neighbourhood of vibrating head, which may result in excessive local stress on the formwork. The joints of the formwork shall be made and maintained tight and close enough to prevent the squeezing out slurry or sucking in of air during vibration. The formwork to receive concrete shall be cleaned and made free from standing water, dust, etc. The contractor shall keep provision for screed and shutter vibrators at site.

No concrete shall be placed in any part of the structure until the approval of Engineer-in-Charge has been obtained. If concreting is not started within 24 hours of the approval being given, it shall have to be obtained again from the Engineer-in-Charge. Concreting shall be done continuously over the area between construction joints. Fresh concrete shall not be placed against concrete which has been in position for more than 30 minutes unless a proper construction joint is formed. When concreting has to be resumed on a surface which has hardened, it shall be roughened, swept, clean, thoroughly wetted and covered with a 13 mm thick layer of mortar composed of cement and sand in the same ratio as in the concrete mix itself. The 13 mm layer of mortar shall be freshly mixed and placed immediately before placing of new concrete.

Where concrete is not fully hardened, all latency shall be removed by scrubbing the wet surface with wire or bristle brushes. Care shall be taken to avoid dislodgement of particles of coarse aggregate. The surface shall then be thoroughly wetted, all free water removed and then coated with neat cement grout. Particular attention shall be given to corners and close spots.

1.1.2 Surface Finish

The exposed surface of concrete of all grades shall be shutter finished except where form liner is used. Concrete with surface defects larger than 1/6th of the cover shall be rejected. Any special surface finish such as form liner finish of outer surface of crash barrier, shall be as per approved drawing or as directed by the Engineer-in-Charge. The quoted rates shall deemed to have included such elements and nothing extra shall be payable on this account.

All members above ground or formation level shall have shutter finished surfaces. No tie bolt shall be permitted in piers. Cast-in-situ superstructure shall be casted in single pour between the expansion joints. Utmost care shall be taken by the contractor in erection of formwork for components cast in stages if any. Location of construction joints in between such stages shall be pre-decided and all such joints shall be treated in a manner approved by the Engineer-in-charge so as to match with the surrounding concrete without leaving any visual aberration or bad patches and/or bands. The contractor shall be deemed to have included the cost of such operation in his quoted rates and no claim whatsoever shall be entertained at a later date.

The form finished concrete surfaces shall be free from honeycomb, blemishes, holes, surface defects, surface undulation etc. In no case such defects shall exceed 200 mm in any direction for individual spots or the continued area of such defects shall not exceed 0.2% of the entire area of related surface. Any variation beyond this limit shall be considered as a substandard work and shall be liable for rejection. The Engineer-in-Charge shall have the option to accept the so formed concrete at a reduced rate for defects exceeding this limit provided it is structurally adequate and due matching of defective patches is done by the contractor to the entire satisfaction of the Engineer-in-Charge.

Special care shall be taken to ensure that no stains are left on the formed concrete either from formwork or exposed reinforcement bars. Such stains shall be removed by the contractor at no extra cost so as to match with adjoining concrete surfaces to the satisfaction of the Engineer-in-Charge.

1.1.3 Curing of Concrete

Curing of concrete shall be complete and continuous using water that is free of harmful amounts of deleterious materials that may attack, stain or discolour the concrete.

Immediately after compaction and completion of any surface finishes, the concrete shall be protected from evaporation of moisture by means of polyethylene sheets, wet hessian or other material kept soaked by spraying. As soon as the concrete has attained a degree of hardening sufficient to withstand surface damage, moist curing shall be implemented and maintained for a period of at least 14 days after casting.

Method of curing and their duration shall be such that the concrete will have satisfactory durability and strength and members will suffer a minimum distortion, be free from excessive efflorescence and will not cause undue cracking in the works by its shrinkage.

The top surface of the slabs and other horizontal surfaces shall be cured by impounding water in cement mortar bunds. Steeply sloping and vertical formed surfaces shall be kept completely and continuously moist prior to and during the striking of formwork by applying water to the top surfaces and allowing it to pass down between the formwork and the concrete. After removal of form, moist curing to be done by wrapping hessian cloth, etc. and keeping it moist by suitable means.

Approved non-wax base curing compounds can be applied on vertical and inclined surfaces, after 7 days of moist curing, where permitted by the Engineer-in-Charge at no extra cost. However, it is required to be proved that using curing compound the concrete shall not have less strength than concrete cured by water curing. It shall not leave any discolouration on the structural concrete. Such approved compounds shall be applied to all exposed surfaces of the concrete.

Steam curing with approved methodology can be adopted if required, for precast segments. No additional payment will be made for adopting steam curing.

1.1.4 Concreting of Narrow Members

Wherever the concreting of narrow member as in case of piers/ column (as adjudged by Engineer-in-Charge) is required to be carried out within shutters of considerable depth, temporary openings in the sides of the shutters shall, if so desired by the Engineer-in- charge, be provided to facilitate the pouring and consolidating of concrete. Before any concreting is commenced, shutters and centering shall be carefully examined and the space to be occupied by the concrete be thoroughly cleaned out. The concrete in such members shall be compacted with suitable shutter vibrators as appropriate.

1.1.5 PROTECTION OF CONCRETE BELOW GROUND LEVEL

Concrete placed below the ground shall be protected from falling earth during and after placing. Concrete placed in ground containing deleterious substances shall be kept free from contact with such ground and with water draining there from during placing and for a period of seven days or as

otherwise instructed thereafter. Approved means shall be taken to protect immature concrete from damage by debris, excessive loading, abrasion, vibrations, deleterious ground water, mixing with earth or other materials, and other influences that may impair the strength and durability of the concrete.

1.1.6 CONSTRUCTION JOINTS

Before the concrete is fully hardened, all latency shall be removed by scrubbing the wet surface with wire or bristle brushes. Care shall be taken to avoid dislodgement of particles of coarse aggregate. The surface shall then be thoroughly wetted, all free water removed and then coated with neat cement grout. Particular attention shall be given to corners and close spots.

Construction joints in all concrete work shall be made as directed by the Engineer-in-Charge. Where vertical joints are required, these shall be shuttered as directed and not allowed to take the natural slope of the concrete. Before fresh concrete is placed against a vertical joint, the old concrete shall be chipped, cleaned and moistened.

When a horizontal construction joint is formed, provision shall be made for interlocking with the succeeding layer by the embedment of saturated wooden blocks or wooden strips beveled on four sides to facilitate their removal. Prior to the next pour the wooden pieces shall be loosened and removed in such a manner as to avoid injury to the concrete. After about 8 to 12 hours of concreting, contact surface shall be hacked to expose the aggregate surface and remove laitance. Immediately thereafter clean the surface using compressed air to remove all the dirt. The surface shall then be compressed cleaned to remove all dirt. Before applying fresh concrete, the contact surface shall be wetted for at least 6 hours. After the surface has dried, a coat of cement slurry shall be applied uniformly using a brush over the old concrete just before placing the fresh concrete. The fresh concrete shall be placed immediately after applying the cement coats. The fresh concrete shall be thoroughly vibrated near the construction joint so that the mortar from the new concrete flows between the large aggregate and develop proper bond with old concrete. The construction joint shall ensure proper bond and leak proof joint.

If use of metal, rubber or plastic water stops is specified, this shall be cast into joints. Measures shall be taken by the Contractor to ensure that no displacement or distortion of water stops takes place during placing of concrete. The construction joints shall ensure proper bond and leak proof joint.

1.1.7 DEFECTS IN CONCRETE

A. CRACKS

If external cracks developed in concrete construction are more than 0.2 mm and in the opinion of the Engineer-in-Charge, these are detrimental to the strength of the construction, the Contractor at his own expense will conduct ‘Loading Tests’ on the structure in the manner as specified elsewhere in this document. If under such test loads the cracks develop further, the Contractor shall dismantle the construction, carry away the debris, replace the construction and carry out all consequential work thereto.

If any cracks develop in the concrete construction are not more than 0.2 mm or in the opinion of the Engineer-in-Charge, the cracks are not detrimental to the stability of the construction, the Contractor at his own expense shall grout the cracks with neat cement grout or with other composition as directed by Engineer-in-Charge and also at his own expense and risk shall make good to the satisfaction of the Engineer-in-Charge all other works such as plaster, moulding, surface finish, which in the opinion of the Engineer-in-Charge have suffered damage either in appearance or stability owing to such cracks. The Engineer-in-Charge's decision as to the extent of the liability of the Contractor in the above matter shall be final and binding.

B. HONEYCOMBING

If any concrete be found honeycombed or in any way defective, such concrete shall be cut out partially or wholly by the Contractor as per the directions of the Engineer-in-charge and made good at his own risk and cost using pressure grouting or any other technique. If Engineer-in-Charge feels that repaired structure will not be having same strength or shape or uniformity with other exposed surface as original desired structure / original structure, the same shall be rejected by Engineer-in-Charge and required to be dismantled and disposed by contractor at his own cost as instructed by Engineer-in-Charge. Decision of the Engineer-in-Charge shall be final binding in this regard.

On no account shall concrete surfaces be patched or covered up or damaged concrete rectified or

replaced until the Engineer-in-Charge or his representative has inspected the works and issued written instructions for rectification. Failure to observe this procedure will render that portion of the works liable to rejection. Contractor shall submit methodology for rectification of defects for approval. Proprietary products for concrete repair shall be used.

1.2 WORK STRENGTH TEST:

1.2.1 TEST SPECIMEN: -Work strength test shall be conducted in accordance with IS: 516 on random sampling. Each test shall be conducted on six specimens three of which shall be tested at 7 days and remaining three at 28 days. Three specimens shall be made for each sample for resting 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 detesting error. Additional samples may also be required for testing samples cure by accelerate methods as described is IS 9013.

1.2.2 TEST RESULTS OF SAMPLE: - The test results of the sample shall be the average of the strength of three specimens. The individual variation shall be not more than ± 15 percent of the average. If more, the test results of the sample are invalid. 90% of the total tests shall be done at the laboratory established at the site by the contractor and remaining 10% in any other laboratory as directed by the Engineer-in-charge.

1.2.3 SAMPLING PROCEDURE: - A random sampling procedure shall be adopted to ensure that each concrete batch shall have a reasonable chance of being tested, that is, the sampling should be spread over the entire period of concerting and cover all mixing units.

1.2.4 FREQUENCY: - The minimum frequency of sampling of concrete of each grade shall be in accordance with following: -

Quantity of Concrete in the work-Cubic Meter per day	Number of Samples
1-5	1
6-15	2
16-30	3
31-50	4
51 and above	4 (plus one additional sample for each additional 50 Cubic Meter or part thereof)

Note: At least one sample shall be taken from each shift.

1.2.5 ACCEPTANCE CRITERIA

The preparation, mixing, transportation, placing, compaction, testing of ingredients and admixtures etc. shall be as per the specifications.

1.3 Ready Mix Concrete (RMC) from RMC producer

1.3.1 The contractor shall be allowed to arrange Ready MIX concrete (RMC) from the RMC producing plants (located within 50km distance from the site of work) supplying concrete in Delhi / New Delhi / NCR or his own batch mix concrete plant of capacity not less than 30 cum per hour. (No Land shall be provided by the department for concrete batch mix plant).

1.3.2 The contractor shall, within a 15 days of award of the work, submit list of at least three RMC producers of repute along with details of such plants including details and number of transit mixers & pumps etc. to be deployed indicating name of owner/company, its location, capacity, technical establishment, past experience and text of MOU proposed to be entered between purchaser (the

contractor) and supplier (RMC producer) to the Engineer-in-charge. Engineer-in-charge shall give approval in writing (subject to drawl of MOU) failing which the contractor shall give list of other RMC producers of repute along with required details for approval of Engineer. The contractor shall draw the MOU with approved RMC producer and submit to Engineer-in-charge with in a week of such approval. **The contractor will not be allowed to use ready mixed-concrete without completion of above stated formalities**.

1.3.3 Notwithstanding the approval granted by Engineer-in-charge in aforesaid manner or provisions in CPWD specification 2019 Vol-I to II with up-to-date correction slips, the contractor shall be fully responsible for quality of concrete including input control, transportation and placement etc.

1.3.4 For all purposes the contractor shall carry out fully the responsibilities of the "placement contractor" and the "manufacturer of concrete".

1.3.5 The Engineer-in-charge will reserve right to inspect at any stage and reject the concrete if he is not satisfied about quality of product at the user's end.

1.3.6 The Engineer-in-charge reserves the right to exercise control over the: -

I. Ingredients water and admixtures purchased, stored and to be used in the concrete including conducting of tests for checking quality of materials, recording of test results and declaring the materials fit or unfit for use in production of mix.

II. Calibration check of the RMC plant.

III. Weight and quantity check on the ingredients, water and admixture added for batch mixing.

IV. Time of mixing of concrete.

V. Testing of fresh concrete, recordings of results and declaring the mix fit or unfit for use. This will include continuous control on the workability during production and taking corrective action, if required.

VI. For exercising such control, the Engineer-in-charge shall periodically depute his authorized representative at the RMC plant. It shall be responsibility of the contractor to ensure that all necessary equipment, manpower & facilities are made available to E-in-C and/or his authorized representative at RMC plant.

The contractor should therefore draw MOU/agreement with RMC producer very carefully keeping in view all terms and conditions/specifications forming part of this tender document.

1.3.7 All required relevant records of RMC shall be made available to the Engineer-in-charge or his authorized representative. Engineer-in-charge shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of materials, production & transportation of concrete mix which shall be binding on the contractor & the RMC plant. Only concrete as approved in design mix by Engineer-in-charge shall be produced in RMC plant and transported to the site.

1.3.8 43 grade OPC (Conforming to IS-8112) of brand/make/source as approved by Engineer-in-charge shall only be used for production of concrete.

1.3.9 <u>Quality control of Ready-mixed concrete</u>

It shall be the responsibility of the contractor to ensure that RMC producer provides all necessary testing equipments and takes all necessary measures to ensure Quality Control of ready mixed concrete. In general the required measures shall be:-

(I) Control of purchased material quality

RMC producer shall ensure that all the materials purchased and used in the production of concrete conform to the stipulation of the relevant agreed standard and the requirements of the concrete mix design and quality control procedures. This shall be accomplished by visual checks, sampling and testing, certification from material supplier and information/data from materials supplier. Necessary equipment for the testing of all material shall be provided and maintained in calibrated condition at the plat by the RMC producer.

(II) Control of material storage

Adequate and effective storage arrangement shall be provided by RMC producer at RMC plant for reliable transfer and feed systems, drainage of aggregates, prevention of freezing or excessive solar heating of aggregate, prevention of contamination etc.

(III) Record of mix design and mix design modification

RMC producer shall ensure that record of mix design and mix design modification is readily available in his computer at RMC plant for inspection of Engineer-in-charge or his authorized representative at any time. Any modification in mix design shall be done only after the approval of Engineer-in-charge.

(IV) Transfer and weighing equipment

RMC producer shall ensure that a documented calibration procedure is in place. Proper calibration records shall be made available indicating date of next calibration due & corrective action taken. RMC producer shall ensure additional calibration checks whenever required by E-in-C in writing to contractor. RMC producer shall also maintain a daily production record including details of customers to whom RMC was supplied including details of mixes supplied. Shall also be maintained of what materials were used for each day's production including water and admixtures.

The accuracy of measuring equipment shall be within ± 2% of quantity of cement &± 3% of quantity of aggregate, admixture and water being measured.

(V) Maintenance of Plant, Truck Mixers and Pumps; -

Plant, Truck Mixer and Pumps should be well maintained so as to not hamper any operation of production transportation and placement of concrete.

(VI) Production of concrete at RMC producing plant

a. Weighing (correct reading of batch data and accurate weighing):- for each load, written, printed or graphical records shall be made of the weights of the materials batched, the estimated slumps, the total amount of water added to the load, the delivery tickets number for that load and the time of loading the concrete into the truck.
b. Visual observation of concrete during production and delivery of during sampling and testing of fresh concrete (assessment of uniformity, cohesion, workability, adjustment to water content):-the workability of the concrete shall be controlled on a continuous basis during production. The batch mix found unfit shall not be loaded into the truck for transportation.
Necessary corrective action shall be taken in the production of mix as required for further batches.
c. Adequate testing equipment at the plant including equipment for measuring surface moisture content of aggregates shall be provided by the RMC producer.
d. Making corresponding adjustments at the plant automatically or manually to batched quantities to allow for observed, measured or reported changes in materials or concrete qualities.
e. Sampling of concrete, testing, monitoring of results.
f. Diagnosis and correction of faults identified from observations/complaints

g. Control of designed and the prescribed mixes: a quality control system shall be operated to control the strength of designed mixes to the required levels. The system shall include continuous analysis of results from cube tests.

1.4 The contractor shall place the concrete by pumping wherever necessary to expedite the progress of work. Nothing extra shall be paid on this account.

1.5 **Use of design mix concrete**

1.5.1 Design mix concrete produced in Ready mix concrete plant shall be arranged by the contractor form the RMC producers to be used for RMC works.

1.5.2 Ready mix concrete shall be arranged in quantity as required at site of work. The ready-mix concrete shall be supplied as per the pre-agreed schedule approved by Engineer-in-charge. Nothing extra shall be payable on this account.

1.5.3 The item of design mix cement concrete shall be inclusive of all the ingredients including admixtures if required, labour, machinery, T&P transportation etc. (expect shuttering which will be measured & paid for separately) required for a design mix concrete of required strength and workability. The rate quoted by the agency shall be net & nothing extra shall be payable on account of changes in quantities of concrete ingredients like cement and aggregates and admixtures etc. as per approved mix design.

1.5.4 The Engineer-in-charge reserves the right to approve RMC producing plants not mentioned in the item of RCC if they fulfill all the condition stipulated as above.

1.5.5 **STANDARD OF ACCEPTANCE**

I. The acceptance criteria shall be as per CPWD specification.

II. Concrete of each grade shall be assessed separately.

Concrete is liable to be rejected, if it is porous or honeycombed, 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 for which nothing extra shall be payable to the contractor.

1.5.6 Only M.S. centering/shuttering and scaffolding material unless & otherwise specified shall be used for all RCC 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 as approved by the Engineer-in-charge.

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

1.5.8 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 RCC shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the contractor.

1.5.9 Measurement – As per CPWD specifications.

1.5.10 Tolerances – As per CPWD specifications.

1.5.11 **Rates: -**The rate shall include the cost of materials and labour involved in the operations described above except for the cost of centering, Shuttering & reinforcement which will be paid separately.

In case of actual average compressive strength being less than specified strength which shall be governed by Para "Standard of Acceptance" as above, the rate payable shall worked out accordingly on pro-rata basis.

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 contractors. However, the Engineer-in-charge may order for additional tests (like cutting cores,

ultrasonic structure etc.) to be carried out at the cost at the 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 regulated in accordance with CPWD Specification.

Necessary arrangements shall be made for field tests and all required equipment's shall be arrange by establishing field lab by the Agency for mandatory tests of the materials as specified in CPWD specifications or as per direction of Engineer-in-Charge no extra shall be paid on this account.
In case concrete is to be transported by pumping, the conduit shall be primed by pumping a batch of mortar / thick cement slurry through the line to lubricate it. Once the pumping is started, it shall not be interrupted (if at all possible) as concrete standing idle in the line is liable to cause a plug. The operator shall ensure that some concrete is always there in the pump-receiving hopper during operation. The lines shall always be maintained clean and shall be free of dents.
Materials for pumped concrete shall be batched consistently and uniformly. Maximum size of aggregate shall not exceed one-third of the internal diameter of the pipe. Grading of aggregate shall be continuous and shall have sufficient ultra-fine materials (materials finer than 0.25mm). Proportion of fine aggregates passing through 0.25mm shall be between 15 & 30% and that passing through 0.125 mm sieve shall not be less than 5% of the total volume of aggregate. When pumping long distances and through hot weather, set-retarding admixtures may be used. Admixtures to improve workability can be added. Suitability of concrete through pumping shall be verified by trial mixes and by performing pumping tests.

1.6 Use of Proper Cover Blocks:

The contractor shall provide approved type of supports for maintaining the bars in position and ensuring require spacing and correct cover of concrete to reinforcement as called for in the drawing. Spacer block of required shape and size, M.S. chairs and spacer bars shall be use in order to ensure accurate positioning of reinforcement. Spacer block shall be cast well in advance with approved proprietary pre-packed free flowing mortars (Conbextra as manufactured by M/s. Fosroc Chemicals India Ltd. Or approved equivalent) of high early strength. Blocks of polymer shall not be used as spacer block unless specially approved by the Engineer-in-charge. Rate of item of steel reinforcement is inclusive of cost of such cover block.

1.7 FORM WORK

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

Only M.S. centering / 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.

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

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

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 cent ring, shuttering and casting for which nothing extra shall be paid to the Contractor except the places where different type of flooring is provided in the same room.

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

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

Dented, broken, cracked, twisted or rusted shuttering plates shall not be allowed to be used on the work.

The shuttering plates shall be cleaned properly with electrically driven sanders to remove any cement slurry or cement mortar or rust. Proper shuttering oil or de-bonding compound such as “Reebole” of FOSROC or equivalent shall be applied on the surface of the shuttering plates in the requisite quantity before assembly of steel reinforcement. Nothing extra shall be paid on this account.

Concreting of upper floor shall not be done until concrete of lower floor has set at least for 14 days but form work and reinforcement can be taken up after the concrete has set at least for three days.

Double steel scaffolding having two sets of vertical supports shall be provided for external wall finish, cladding etc. The supports shall be sound and strong, tied together with horizontal pieces over which scaffolding platform shall be fixed. Scaffolding shall have steel staircase for inspection of works at upper levels. Nothing extra shall be paid on this account.

1.8 Defects in Concrete

A. Cracks

If external cracks developed in concrete construction are more than 0.2 mm and in the opinion of the Engineer-in-Charge, these are detrimental to the strength of the construction, the Contractor at his own expense will conduct ‘Loading Tests’ on the structure in the manner as specified elsewhere in this document. If under such test loads the cracks develop further, the Contractor shall dismantle the construction, carry away the debris, replace the construction and carry out all consequential work thereto.

If any cracks develop in the concrete construction are not more than 0.2 mm or in the opinion of the Engineer-in-Charge, the cracks are not detrimental to the stability of the construction, the Contractor at his own expense shall grout the cracks with neat cement grout or with other composition as directed by Engineer-in-Charge and also at his own expense and risk shall make good to the satisfaction of the Engineer-in-Charge all other works such as plaster, moulding, surface finish, which in the opinion of the Engineer-in-Charge have suffered damage either in appearance or stability owing to such cracks. The Engineer-in-Charge's decision as to the extent of the liability of the Contractor in the above matter shall be final and binding.

B. Honeycombing

If any concrete be found honeycombed or in any way defective, such concrete shall be cut out partially or wholly by the Contractor as per the directions of the Engineer-in-charge and made good at his own risk and cost using pressure grouting or any other technique. If Engineer-in-Charge feels that repaired structure will not be having same strength or shape or uniformity with other exposed surface as original desired structure / original structure, the same shall be rejected by Engineer-in-Charge and required to be dismantled and

disposed by contractor at his own cost as instructed by Engineer-in-Charge. Decision of the Engineer-in-Charge shall be final binding in this regard.

On no account shall concrete surfaces be patched or covered up or damaged concrete rectified or replaced until the Engineer-in-Charge or his representative has inspected the works and issued written instructions for rectification. Failure to observe this procedure will render that portion of the works liable to rejection. Contractor shall submit methodology for rectification of defects for approval. Proprietary products for concrete repair shall be used.

1.9 Reinforcement: -

a) The rate of item of reinforcement in RCC work includes all operations including straightening, cutting, bending, binding with annealed steel and placing in position at all the floors with all leads and lift complete.
b) The reinforcement shall be done as per CPWD Specifications.
c) To avoid displacement of bars in any direction & to ensure proper cover, the contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings, spacer blocks of required shape and size. Chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. Spacer blocks shall be cast well in advance with approved proprietary pre-packed free flowing mortars (Conbextra as manufactured by M/S Fosroc Chemicals India Ltd. or approved equivalent) of high early strength and same colour as surrounding concrete. However, Cover Guard Bars shall also be used to maintain proper cover of RCC Columns in addition to spacer blocks as mentioned above. Pre-cast cement mortar/concrete blocks/blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-charge. The suitable blocks made of cement concrete of same mix as that of RCC shall be used by the contractor and only factory-made round type cover blocks shall be used. The rate of RCC items is inclusive of cost of such cover blocks & Cover Guard Bars. Nothing extra shall be paid on this account.
d) For small quantity of RCC works such as columns, Chajjas fins etc., design mix concrete prepared at site by batching plant of not less than 15 Cum capacity installed at site of work by contractor at his own cost shall be allowed.

SPECIAL CONDITIONS FOR CEMENT, STEEL & RCC WORK

CEMENT & STEEL REINFORCEMENT

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

2. CEMENT

(a) The contractor shall procure Portland Pozzolana Cement (conforming to IS: 1489 -Part-I), as required in the work, from manufacturers mentioned in the list of approved make of this NIT having a production capacity not less than one million tonnes per annum as approved by ADG/SDG of the sub region. The tenderers may also submit a list of names of cement manufacturers which they propose to use in the work. The tender accepting authority reserves right to accept or reject name(s) of cement manufacturer(s) which the tenderer proposes to use in the work. No change in the tendered rates will be accepted if the tender accepting authority does not accept the list of cement manufacturers, given by the tenderer, fully or partially.

(b) 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. The cost of tests shall be borne by the contractor.

(c) Cement shall be brought at site in bulk supply of approximately 40 tonnes or as decided by the Engineer-in-Charge. The contractor shall have to obtain and furnish vouchers to the Engineer-in-charge in respect of all supplies of cement brought by him to the site of work.

(d) The cement godown of the capacity to store a minimum of 1000 bags of cement shall be constructed by the contractor at site of work for which no extra payment shall be made 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.
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.

(e) 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-38 of the contract and shall be governed by the conditions laid therein.

(f) 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.
For non-scheduled items, the decision of the Chief Engineer regarding theoretical quantity of the cement, which should have been actually used, shall be final and binding on the contractor.

(g) Wet curing period shall be enhanced to a minimum of 10 days or its equivalent. In hot & arid regions, the minimum curing period shall be 14 days or its equivalent.

(h) Till the time, BIS makes it mandatory to print the %age of fly ash on each bag of cement, the certificate from the PPC manufacturer indicating the same shall be obtained and permission obtained from Engineer-in-Charge before use of such cements in works.

(i) 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.

(j) Damaged cement shall be removed from site immediately by the contractor on receipt of notice in writing from the Engineer-in-charge. If he does not do so within three days of receipt of such notice, the Engineer-in-charge shall get it removed at the cost of the contractor.

(k) 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.

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

3. STEEL REINFORCEMENT

(a) The contractor shall procure corrosion resistant steel (CRS) reinforcement confirming to IS 1786:2008 (Indian Standard Specification for high strength deformed steel bars and wires for concrete reinforcement). TMT bars of Fe 550D from primary producers or steel manufacturers mentioned in the list of approved make of this NIT or their authorized dealers having valid BIS license for IS: 1786-2008 (Amendment -1 November 2012). Only corrosion resistant steel (CRS) shall be used.
The procured steel should have following qualities:
Excellent ductility, bend ability and elongation of finished product due to possible refining technology. Consumption of steel should be accurate as per design Steel should have no brittleness problem in finished product. Steel should carry the quality of corrosion and earthquake resistance.
Quality steel with achievement of proper level of sulphur and phosphorus as per IS: 1786-2008. The TMT bars procured from primary producers shall conform to manufacture's specifications. TMT bars procured from primary producers, the specifications shall meet the provisions of IS 1786: 2008 pertaining to Fe 550 D grade of steel having elongation more than 14.5 % and confirm to other requirements.

(b) The contractor shall have to obtain and furnish manufacturer's test certificates and vouchers to the Engineer-in-charge stating the process of manufacture, chemical composition and test sheet giving result of each mechanical test applicable in respect of all Supplies of steel brought by him to the site of work. Each test certificate shall indicate the number of the cast to which it applies corresponding to the number or identification mark to be found on the material. 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. All consignment received at the work site shall be inspected b the Site staff along with the relevant documents before acceptance. The original vouchers and test certificate of manufacturer shall be entered in respective registers by the Site Staff and kept on record in the site office.

(c) The Engineer-in-Charge shall get each consignment tested for both Chemical composition and physical properties (including bend and re-bend test) as specified in this regard in relevant BIS codes, from any Government laboratory or other NABL accredited laboratory, as approved by the department. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications 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 or written order from the Engineer-in-Charge to do so. Else the department shall remove it and recover double the cost of removal from the contractor.

(d) The steel reinforcement bars shall be brought to the site in bulk supply of 20 tonnes or more, or as decided by the Engineer-in-charge.

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

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

Size of bar	For consignment below 100 tonnes	For consignment above 100 tonnes
Under 10mm dia bars	One sample for each 25 tonnes or par thereof.	One sample for each 40 tonnes or part thereof.
10mm to 16mm dia bars	One sample for each 35 tonnes or part thereof.	One sample for each 45 tonnes or part thereof.
Over 16mm dia bars	One sample for each 45 tonnes or part thereof.	One sample for each 50tonnes or part thereof.

(g) The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor. All expenditure to be incurred for testing of samples e.g., packaging, sealing, transportation, loading, unloading etc. including testing charges shall be borne by the contractor.

(h) The actual issue and consumption of steel on work shall be regulated and proper accounts shall be maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 38 of the contract and shall be governed by conditions laid therein. In case the consumption is less than theoretical consumption including permissible variations leading to under designing of the structure, the work shall be summarily rejected, otherwise recovery at the rate so prescribed shall be made after ensuring structural soundness and stability. In case of excess consumption, no adjustment needs to be made.

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

(j) 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 of manufacturer shall be entered in respective registers by the Site staff and kept on record in the site office.

(k) Reinforcement including authorized spacer bars and laps 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 centimetre. Wastage and unauthorized overlaps shall not be measured.

The standard sectional weights referred to as in Table 5.4 in para 5.3.4 in CPWD Specifications for works 2019 Vol. 1 will be considered for conversion of length of various sizes of M.S. Bars, Steel Bars and T.M.T. bars into Standard Weight.

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.

If the Derived Weight as in sub-para (2.3.13) above is less than the Standard Weight as in Sub-para (2.3.12) above then the Derived Actual Weight shall be taken for payment provided, if it is within the following tolerances specified in IS1786-2008, otherwise whole lot will be rejected.

Tolerances on Nominal Mass (individual sample) shall be as under

Sl. No.	Nominal size mm	Tolerances on the Nominal Mass, percentage
1	Upto and including 10	-8%
2	Over 10 upto & including 16	-6%
3	Over 16	-4%

If the Derived Actual Weight is found more than the Standard Weight, the Standard Weight as per in sub-para (2.3.12) 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.
Mixing of different type of steel/different grades of steel shall not be allowed in the same structural members as main reinforcement to satisfy clause 26.1 of IS:456.

SPECIFICATIONS FOR BITUMINOUS WORK

1 GENERAL

1.1 The contractor shall have to necessarily deploy self-propelled mechanical paver with suitable screeds capable of spreading, tamping and finishing the mix true to the specified lines, grades and cross sections of the road. The paver finisher shall have the following essential features:

a) Loading hoppers and suitable distributing mechanism.
b) All drives having hydrostatic drive/control.
c) The machine shall have a hydraulically extendable screed for appropriate width requirement.
d) The screed shall have tamping and vibrating arrangement for initial compaction to the layer as it is spread without rutting or otherwise marring the surface. It shall have adjustable amplitude and variable frequency.
e) The paver shall be equipped with necessary control mechanism so as to ensure that the finished surface is free from surface blemishes.
f) The paver shall be fitted with automatic levelling and profile control within the specified tolerances.
g) The screed shall have the internal heating arrangement.
h) The paver shall be capable of laying either 2.5 to 4.0m width or 4.0 to 7.0m width as stipulated in the contract.
i) The paver shall be so designed as to eliminate skidding/slippage of the tyres during operation.

1.2 The contractor shall have to necessarily deploy the Roads rollers, for BM, DBM, DBC & SMA for their compaction as per relevant MORTH specifications, as described below: -

(i) For Initial Rolling	8 to 10 tonne static weight smooth wheel roller (3 wheels or tandem)
(ii) For Intermediate Rolling	Vibratory roller of 8 to 10 tonne static weight or pneumatic tyred roller of 12 to 15 tonne weight, with minimum 9 wheels and minimum tyre pressure of 5.6 kg/cm^2.
(iii) For Final Rolling	It shall be done with 6 to 8 tonnes smooth wheeled tandom rollers.

(iv) Roller should not move at a speed of more than 6 km/ hour.

1.3 Mix shall be prepared in hot mix plant of adequate capacity and capable of yielding a mix of proper and uniform quality with thoroughly coated aggregate. Hot Mix Plant shall be preferable of batch mix type with electronic load sensor device. The contractor shall have to mention the details of Hot Mix Plant from where he intends to bring the bituminous mix. The plant including all material to be used in the bituminous mix shall be open to inspection by Engineer-in-Charge or his authorised representative, whenever required.

1.4 The job mix shall be got designed by the contractor from CRRI/IIT Roorkee/IIT Delhi or any other Government college/Institution and its cost shall be borne by the contractor. In case already approved design mix is allowed to be used, then, recovery of Rs. 50,000/- (Rs. Fifty Thousand only) shall be made from contractor for each separate job mix.

1.5 The contractor shall provide sample stretch minimum 100 sqm the BM/DBM/DBC/SMA/Micro-surfacing etc. as required & as per directions of Engineer-in-Charge for approval of the concerned Superintending Engineer in terms of mix proportion, laying and compaction etc. No work shall be carried out at site by the agency without approval of sample stretch by the Superintending Engineer. In case, the sample prepared by the contractor is not acceptable to the Superintending Engineer, same shall be dismantled and removed from site for which nothing shall be payable to the contractor. However, another sample acceptable to the Superintending Engineer shall be made and will be approved by Superintending Engineer. The approved sample stretch shall be preserved till the completion of the work and is open for inspection by the senior officers at any time during the concurrency of the work.

2.0 RAP

A RECYCLING OF BITUMINOUS PAVEMENT (MoRTH Specification)

Scope

This work covers the recycling of existing bituminous pavement materials to update an existing bituminous pavement which has served its initially intended purpose. The work shall be performed on such widths and lengths as shall be directed by the Engineer and may consist of payment removal, stockpiling of materials from the old pavement, addition of new bitumen and untreated aggregates in the requisite proportions, mixing spreading and compaction of the blended materials.

These specifications cover the hot process.

B Reclaimed Bituminous Materials for Central Plant Recycling

The reclaimed bituminous material shall be used in the production of bituminous macadam and dense bituminous macadam subject to the Clauses 519.2.3. to 519.2.8 (MoRTH Specification) and subject to satisfactory completion of full investigations in the respect of all related materials entirely at the Contractor's cost and subject to the approval of the Engineer estimation purposes, an amount not greater than 30 percent of reclaimed bituminous material shall be assumed.

C Materials for Recycled Pavement

The recycled materials shall be a blend of reclaimed and new materials proportioned to achieve a paving mixture with the specified engineering properties. The reclaimed materials shall be tested and evaluated to find the optimum blend meeting the mixture requirement. Such testing and evaluation shall be carried out on representative sample, either cores sampled from the carriageway or samples taken from stockpiles in accordance with current practice. The sampling frequency should be sufficient to determine how consistent the reclaimed material is and to provide representative samples for composition analysis and measurement of properties of recovered binder. As an absolute minimum, one sample to represent 500m two lane carriageway shall be taken.

D Aggregate Evaluation

Mechanical sieve analysis (IS:2386, Part I, wet sieving method) shall be performed on the aggregate portion of the reclaimed bituminous pavement sample to determine the grading. It is essential that the reclaimed materials to be recycled are consistent, as variable materials will cause problems with the control of quality and impede the efficiency of the recycling operation. Suitable sources of consistent material either in existing pavements, from stockpiled of known origin or from another suitable source shall be identified before a decision can be made on the optimum percentage of reclaimed material.

After selecting the proportion of reclaimed materials to be recycled, the grading of the mixture may need adjustment, to meet Specification requirements, by the addition of selected aggregate sizes.

E Evaluation of Bitumen

When the amount of reclaimed bituminous materials to be used in the mixture exceeds 10%, the penetration value of the recovered binder from the reclaimed bituminous material, before mixing, shall exceed 15%, after recovery of binder in accordance with the requirements of BS:2000: Part 397, when tested in accordance with IS: 1203. Provided the above requirement is met, hardening of the old binder, during the original mixing process or through ageing, can be compensated for by adding softer bitumen, to obtain the appropriate final grade of binder.

The determination of the type and amount of binder required to be added in the final mix is essentially a trial-and-error procedure.

After mixing with recycled material, the binder recovered from the mixture shall have a recovered penetration value not less than the value specified in Table 500-48 (MoRTH Specification).

Table 500-48: Minimum Recovered Binder Penetration of Recycled Mixture

Specified Grade of Binder Viscosity Grade	inimum Recovered Penetration Value of Binder after Mixing
40 (45 pen)	27
30 (65 pen)	39
10 (90 pen)	54

F **Untreated Aggregate**

If necessary, fresh untreated aggregates shall be added to the reclaimed bituminous pavement to produce a mix with the desired grading. The aggregate shall be checked for quality requirements in accordance with Table 500-7 or Table 500-10 as appropriate. Reclaimed aggregate, if any, or any aggregate normally used for the desired bituminous mix, or both, may be used for this purpose.

G Mixture Design

The combined aggregate grading and binder content shall comply with the relevant tables in MORTH Specification in Clause 504 or 505 as appropriate. The mix design shall also comply with requirement of Table 500-10 (in MORTH Specification). There may be a variation on three to four sieves with respect to percent passing, the permissible variation shall not exceed 3 to 4 percent per sieve.

,H Reclaiming Old Pavement Materials

The removal of pavement materials to the required depth shall be accomplished either at ambient temperature (cold process) or at an elevated temperature (hot process), as approved by the Engineer.

I Cold Removal Process

In the cold process, the ripping and crushing operations shall be carried out using scarifies, grid rollers, or rippers or by any other means as directed by the Engineer. The removed materials shall be loaded and hauled or crushing to the required size as directed by the Engineer. Alternatively, cold milling or planning machines can be used to reclaim bituminous pavement to controlled depths. Thereafter the bituminous layers are removed, any remaining aggregate materials that are to be incorporated in the recycled hot mix shall be scarified and removed. When the pavement material removal is completed any drainage deficiencies shall be corrected. After that, the base/sub-base, as the case may be shall be cut graded and compacted to the required profile and density.

K Stockpiling

In the cold process, the reclaimed bituminous pavement material shall be stockpiled with height of stockpiles not exceeding 3m. The reclaimed untreated aggregate base/sub-base material shall be stockpiled in the same manner as new aggregate. The number and location of stockpiles shall be carefully planned for efficient operation of the hot-mix plant.

L New Surfacing (Repave and Remix/Repave Processes)

New surfacing material shall be bituminous concrete wearing course complying with Clouse 508, or other wearing course material approved by the Engineer.

M Binder

The binder shall be recovered from samples taken from each layer of material laid. The method of recovery shall be in accordance with BS 2000: Part 397 or an equivalent test. The penetration of the binder shall be in the range 35-70 pen.

N Mixture Design

The surfacing material shall be sampled from the paver hopper or augers. Care shall be taken that only the material forming the new surface layer is sampled. The sample shall be reduced at site by rifling or quartering to approximately 5 kg and placed loose in an air-tight container.

The sample shall only be reheated once whilst within the container. As soon as the sample reaches the required temperature, the reheated material shall be remixed and three Marshall test specimens prepared in accordance with the procedures specified in MS-2.

The bulk density of each specimen shall be measured before Marshall Stability testing. The mean stability and flow of the three-specimen measured in accordance with the procedures specified in MS-2, shall comply with the requirements of Table 500-11.

The three Marshall specimens shall be combined and the maximum theoretical specific gravity (G_{mm}) of the mix shall be determined in accordance with ASTM D 2041. This maximum theoretical specific gravity (G_{mm}) corresponds to 0% air voids in the mix. The percent air voids (Pa) in the specimen of the compacted mixture given by $P = (G_{mm}-G_{mm}x100)/G_{mm}$ shall meet the requirements of air voids laid down in Table 500-10, where G_{mm} is the actual bulk specific gravity of a Marshall specimen determined in the Laboratory.

O Opening to Traffic

For recycled material forming the base or binder course layer, Clauses 504.5 or 505.5 shall apply as appropriate. For recycled material forming the wearing course layer, Clause 508.4 shall apply.

P Surface Finish and Quality Control

The surface finish of the completed construction shall conform to the requirement of Clause 902.

For control of the quality of materials and the works carried out the relevant provisions of Section 900 shall apply.

Q **Arrangements of Traffic**

During the period of construction, arrangements for traffic shall be made in accordance with the provisions of Clause 112 of MORTH.

R Measurement for Payment

The recycled pavement work shall be measured in cubic meters or tones of finished work as stated in the Contract.

S Rate

The contract unit rate for recycled pavement shall be payment in full for carrying out the required operations including full compensation for all item as Clause 501.8.8.2 in MoRTH Specification.

3.0 STONE MATRIX ASPHALT (SMA)

3.1 Scope

This work shall consist of construction in a single or multiple layer of fibre-stabilized SMA for use as wearing course/ binder course on a previously prepared bituminous bound surface. The 13 mm SMA in this Specification shall be used for wearing course with nominal layer thickness of 40 to 50 mm. the 19 mm SMA shall be used for binder (or intermediate) course with nominal layer thickness of 45 to 75 mm.

3.2 Materials

3.2.1 Bitumen

The bitumen for fibre-stabilized SMA shall be viscosity grade paving bitumen conforming to Indian Standard Specification IS:73 or Modified Bitumen complying with IS:15462 and IRC:SP:53 of appropriate type and grade capable of yielding the design mix requirements, and as per Table 500-2(MoRTH Specification).

3.2.2 Coarse Aggregates

The coarse aggregates shall consist of crushed rock retained on 2.36 mm sieve. It shall be clean, hard, durable, of cubical shape and free from dust and soft organic and other deleterious substances. The aggregates shall satisfy the physical requirements given in Table 500-35 (MoRTH Specification).

3.2.3 Fine Aggregates

Fine aggregates (passing 2.36 mm sieve and retained on 0.075 mm sieve) shall consist of 100 percent crushed, manufactured sand resulting from crushing operations. The fine aggregate shall be clean, hard durable, of fairly cubical shape and free from soft pieces, organic or other deleterious substances. The Sand Equivalent Test (IS:2720, Part 37) value for the fine aggregate shall not be less than 50. The fine aggregates shall be non-plastic.

3.2.4 Mineral Filler

Mineral filler shall consist of finely divided mineral such as stone dust and/or hydrated lime. Fly ash shall not be permitted as filler. The filler shall be graded within the limits indicated in Table 500-36 (MoRTH Specification).

Table 500-36: Grading Requirement of Mineral Filler

IS Sieve (mm)	Cumulative % Passing by Weight of Total Aggregate
0.6	100
0.3	95-100
0.075	85-100

The filler shall be inserting material free from organic impurities and shall have plasticity index not greater than 4. Plasticity index requirement will not apply if filler is hydrated lime. Where the complete SMA mixture fails to satisfy the requirement of Moisture Susceptibility test (AASHTO T 283), at least 2 percent by total weight of aggregate of hydrated lime shall be used as filler and the percentage of fine aggregate reduced accordingly.

3.2.5 Stabilizer Additive

Only pelletized cellulose fibres shall be utilized. The dosage rate for cellulose fibres is 0.3 percent minimum by weight (on loose fibre basis) of the total mix. The dosage rate shall be confirmed so that the bitumen drain down does not exceed 0.3 percent when the designed mix is tested in accordance with ASTM D 6390.

3.2.5.1 The cellulose fibres to be used in pellets shall meet the following requirements:

Maximum fibre length	-	8 mm
Ash content	-	maximum of 20 percent nonvolatile
Oil absorption	-	more than 4 times of the fibre weight
Moisture content	-	less than 5 percent by weight

When the Contractor submits the proposed job-mix formula for SMA for approval, it shall include the fibre manufacturer's most recently dated actual test data showing that the fibres meet the above requirements. The contractor shall protect the cellulose from moisture and contamination prior to incorporating into the SMA.

3.3 SMA Mix Design

3.3.1 The combined grading of the coarse aggregate, fine aggregate and mineral filler (including hydrated lime if used) shall be within the limits shown in Table 500-37(MoRTH Specification).

3.3.2 The SMA mixture will be designed using AASHTO MP-8, Standard Specification for Designing Stone Matrix Asphalt and AASHTO PP-41, Standard Practice for Designing Stone Matrix Asphalt. The SMA mixture shall be compacted with 50 blows on each side using the Marshall procedure given in the Asphalt Institute MS-2 (Sixth edition). The designed mix shall meet the requirements given in Table 500-38(MoRTH Specification).

3.4 SMA Production

3.4.1 Mixing

The SMA Mix shall be prepared in a hot mix plant of adequate capacity and capable of yielding a mix of proper and uniform quality with thoroughly coated aggregate.

When viscosity grade bitumen is used, the mix temperature shall range from 150^{o}C to 165^{o}C. In case of modified bitumen, the temperature of mixing and compaction shall be higher than the mix with viscosity grade bitumen. The exact temperature depends upon the type and amount of modifier used and shall be adopted as per the recommendations of the manufacturer. In order to ensure uniform quality of mix, the plant shall be calibrated from time to time.

3.4.2 Handing Mineral Filler

Adequate dry storage will be provided for the mineral filler and provisions shall be made for proportioning the filler into the mixture uniformly and in the desired quantities. This is necessary because relatively large amounts of mineral filler are required in SMA mixes.

3.4.3 Fibre Additive

For batch plant, the fibre will be added directly into the weigh hopper above the pug mill. Adequate dry mixing time is required to disperse the fibre uniformly throughout the hot aggregate. Dry mixing time will be increased by 5 to 10 seconds. Wet mixing time shall be increased by at least 5 seconds. For drum mix plant, a separate fibre feeding system shall be utilized that can accurately and uniformly introduce fibre into the drum at such a rate as not to limit the normal production of mix through the drum. At no time shall there be any evidence of fibre in the bag house/wasted baghouse fines.

3.5 SMA Placement and Compaction

3.5.1 Preparation of Existing Bituminous Surface

The existing bituminous surface shall be cleaned of all loose extraneous matter by means of mechanical broom and high-pressure air jet from compressor or any other approved equipment/method. Any potholes and/or cracks shall be repaired and sealed.

3.5.2 Compaction

Clause 501.6 (MoRTH Specification) shall apply, except that the use of pneumatic roller shall not be permitted if there is a possibility of pick-up.

The density of the finished paving layer shall be determined by taking 150 mm diameter cores. The density of finished paving layer shall not be less than 94 percent of the average (sample size N=2) theoretical maximum specific gravity of the loose mix (G_{mm}) obtained on that day in accordance with ASTM D2041. That is, no more than 6 percent air voids shall be allowed in the compacted SMA mat.

3.6 Quality Control and Surface Finish

It shall be ensured that traffic is not allowed on the SMA surface until the paved mat has cooled to ambient temperature in its entire depth.

3.7 Arrangements for Traffic

During the period of construction, arrangements for traffic shall be made in accordance with the provisions of Clause 112 (MoRTH Specification).

3.8 Measurement for Payment

SMA shall be measured as finished work in sq.m at this specified thickness or in cum as specified in the Contract.

3.9 Rate

The contract unit rate for SMA shall be payment in full for carrying out the required operations including full compensation for all components listed in Clause 501.8.8.2 in MoRTH Specification.

4.0 PROCUREMENT AND ACCOUNTING OF BITUMEN

4.1 The contractor shall procure bitumen of required grade as specified confirming to IS:73- 1992 with upto date amendments and other relevant codes from approved manufactures of Repute.

4.2 **Mode of Procurement:**

4.2.1 Bitumen/Bitumen emulsion for tack coat shall be brought at site in bulk/sealed drums respectively and sealed drums shall bear following marking (legible)

(a) Name of Manufacturers.
(b) Gross Wt. Net Wt. And Tare Weight.
(c) Month and year of Manufacture.
(d) Use before_____(date)
(e) Type and grade.
(f) Batch Number.
(g) "ISI" Certification and Standard Mark.

(h) Name of Contractor/Supplier.
(i) Serial No. & Total Nos. of drums in each batch.

PROFORMA FOR THE BITUMEN REGISTER RECEIPT

Date of Receipt	Qty. Received.	Progressive Total.	Date of Issue	Qty. Issued.	Total Issued	Balance in hand	Cont.'s initial	JE's initial
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Item of Work for Which issued		Appx. Qty. of work done on each day		Theoretical fulfilment of bitumen for work done on each day.		Remarks	Initial of AE/AEE/EE	
10		**11**		**12**		**13**	**14**	

4.2.2 When bitumen is issued /brought in drums, the same shall be stacked in fenced enclosures to be provided by the contractor at his own cost, as directed by the Engineer-in-Charge on one side of the roadway. The contractor shall be responsible for the watch & ward and safety of bitumen. The contractor shall facilitate the inspection of bitumen stockyard by the Engineer-in-Charge or his representative at any time.

4.2.3 Material shall be kept in the joint custody of the contractor and the representative of the Engineer-in-charge. The empty containers shall not be removed from the site of work till the relevant item of work has been completed and permission obtained from the Engineer-in-Charge. No heating of bitumen in drums for any purpose whatsoever shall be allowed.

4.2.4 All the tippers carrying bituminous mix from Hot Mix Plant should accompany the computerised print out of job-mix from automated Hot Mix Plant including measurement certificate from weigh-bridge duly certified by a responsible person at plant. This record shall be preserved by the field unit along-with all documents and registers. Contractor shall also be responsible for recording weight of bituminous mix brought at site by each tipper in registers and entry of same shall be checked by JE (100%) and authenticated by AE.

4.3 SAMPLING AND TESTING

The contractor shall have to obtain and furnish test certificate issued by manufacturer to the Engineer-un-Charge in respect of bitumen procured by him. The samples shall be collected at discretion of Engineer-in-Charge and got tested as per provisions of IS:73/CPWD specification from the approved laboratories.

The bitumen content in bituminous mix shall be checked by conducting the bitumen extraction test Conforming to IRC-II at regular interval on the completion of work, the actual consumption of bitumen shall be worked out based on such test results. The theoretical consumption shall be worked out based on the job mix formula and the actual consumption (based on extraction test as well as MAS account) if found less than theoretical one, the recovery shall be made from contractor for less use of bitumen. However, nothing shall be paid if actual consumption so worked out is higher than theoretical consumption. This is without prejudice to action under relevant clause of the agreement.

Bitumen brought to site/Hot Mix Plant and bitumen remaining unused after completion of work shall not be removed from site without written permission of the Engineer-in-charge.

NOTE: -Nothing shall be paid for cartage of bitumen to the site of work.

5.0 Evaluation of Riding Quality of Pavement after Carpeting

The IRC82:2015 has specified the serviceability indicators for Urban Roads / Highways. Levels of indicators specified as under:

Serviceability indicators for Highways

Sl. No	Serviceability indicators	Level 1 (Good)	Level 2 (Fair)	Level 3 (Poor)
1	Roughness (max permissible)	1800 mm/km	2400 mm/km	3200 mm/km
2	Skid Resistance (skid number, SN by ASTM -274) Minimum Desirable	60 SN	50 SN	40 SN

Serviceability indicators for Urban Roads

Sl. No.	Serviceability indicators	Level 1 (Good)	Level 2 (Fair)	Level 3 (Poor)
1	Roughness (max permissible)	1800 mm/km	2600 mm/km	3400 mm/km
2	Skid Resistance (skid number, SN by ASTM -274) Minimum Desirable	65 SN	55 SN	45 SN

The riding quality of the road shall be maintained as per standards established for Level 1 (Good) for urban roads. **The pavement shall be evaluated for riding quality as per the indicators indicated above for Level 1 (Good) urban road before releasing payment to the agency for carpeting work.**

Further, minimum desirable level for the riding quality / performance of the road shall be Level-2 (Fair) after three years from the date of completion of the work. Additional security deposit shall be released to the agency after obtaining evaluation test report of pavement.

The riding quality shall be got tested through an expert agency, as approved by Engineer-in-Charge and any testing charges/fee to be paid to this expert agency shall be borne by the contractor and Nothing shall be payable for the same.

It is mandatory to record inventory and condition of road using Network Survey Vehicle (NSV) at least before start of the work, before issue of provisional completion/completion certificate and 6 months after completion of work, however for State Highways (SHs), Urban roads, Urban bypasses roads, the date shall be updated thereafter once every year. It shall be specifically mentioned in the completion certificate that inventory and condition of road have been recorded using NSV before start of work & before issue of provisional completion/completion certificate. **All expenditure incurred for recording, testing, etc. shall be borne by the contractor, nothing shall be payable on this account.**

6.0 While laying the bitumen layer on the road the contractor will ensure that the road surface has the desired transvers gradient as per specifications and there should not be any water logging on the road because of any deficiency in transvers gradient in the road. If the road is damaged due to any water logging due to above deficiency in gradient, the same shall be rectified by the contractor at his own cost during the entire defect liability period by relaying the defective road portion.

7.0 The Contractor shall make arrangements and shall provide free of cost materials, equipments, tools and plants and labour required for collecting, preparing, forwarding the required number of samples for testing. All the testing charges shall be borne by the contractor and Nothing shall be payable for the same.

8.0 **The cold milling will be done, with the approval of Engineer-in-Charge, only on those roads, where existing road level surface is not required to be raised. However, as directed by Engineer-in-Charge, the agency has to lay the recycled Dense Graded Bituminous Macadam (recycled DBM) on those road surface areas also, where cold milling has not been done.**

IMPORTANT CONDITIONS FOR DRAIN WORK

1. Site conditions specified hereunder and elsewhere are given as guidelines and contractor shall satisfy himself regarding all aspects of site conditions and no claim will be entertained on the plea that the information supplied by the department is erroneous or insufficient.
2. Work has to be executed without disrupting the traffic and thus, limited space shall be available for execution of the work.
   The contractor will have to care fully plan his sequence of operations so that the traffic moves unhindered at all times. The traffic diversion plan evolved by the contractor for execution of the work at all locations will require approval of Delhi Traffic Police and of the department. Modifications suggested by the Traffic Police and also by the department shall be implemented by the contractor during execution of the work.
3. This is a work of construction of drain on the same alignment of existing drain after demolishing it. Therefore, the site will be made available in parts without disturbing existing flow. The agency will submit diversion and demolition plan of the existing drain for approval of Engineer-in-Charge before start of execution of the work.
4. The work site is located in highly populated and urban area having high traffic and high-rise building structures, underground utilities and also many other structures like FOB, Subway etc. in/nearby the alignment of drain. Accordingly on handing over of the site, the contractor shall initially do a detailed comprehensive study of the entire alignment of the drain including GEO survey using Ground Penetrating Radar (GPR) and his assessment of the feasibility of the execution with respect to aspects like alignment, invert level, utilities that may require shifting etc. (in view of underground utilities and permanent structures) and other execution challenges that are likely to be faced and prepare the comprehensive work plan of construction for a smooth execution of work at site. This comprehensive work plan will be submitted within one month of date of start and will be got approved by Engineer-in-Charge.
5. The work site is located in highly populated and urban area where numerous various types of utilities (electric telecom cables/waterlines/gas lines may be encountered in execution of work. The same shall be protected to the extent possible, if not fouling with the work. However, in case the same are required to be shifted, the same shall be preferably be shifted by the agency and payment, if admissible, for same shall be made. In case of specialised utilities like high power electric cables, gas line, telecom lines, electric substation etc. then the same shall be got shifted by the department. In this case suitable extension of time shall be granted to the agency. No compensation beyond agreement provisions shall be payable for any such extension of time, so granted to the agency.

Climatic conditions

6. The climate in the region is extreme with three major seasons-winter, summer and rainy. The winter season lasts from October to March, summer season from April to June and rainy season from July to September. This is only for guidance and there may be variations.

DISPOSAL OF C & D WASTE

7. The agency shall have to dispose of all generated C&D waste material/ Malba/ Rubbish, etc. from the site within two days of its generation. The generated C&D waste material/ Malba/ Rubbish, etc. have to dispose of at authorised/notified/ specified dumping ground. In non-compliance of the above Engineer-in-Charge will dispose of the same at the risk and cost of the agency. The decision of Engineer-in-Charge will be final and binding on the contractor.
8. The agency shall submit the original receipt of Disposal fees, of authorised/notified/ specified dumping ground, if any, to the Engineer-in- Charge for reimbursement of the same within next 48 hours of the disposal. After specified period, his claim for reimbursement will not entertain and no payment for reimbursement of Disposal Fees will be made to him under any circumstance.
9. After the work is completed, all left-over, junk and the scarp materials should be cleared from the site immediately. No final bill shall be paid until and unless the work site is handed over in a clean condition.
10. Failure to clear C&D waste from work site regularly shall result in levy of Compensation of Rs.5 Lakhs on the Contractor for each default apart from any other action as per contract clauses.

PUMPING AND BAILING OUT WATER

11. For works at/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 to execute the work and nothing extra shall be paid except otherwise provided in the items of schedule of quantities. This bailing out of water from site

will not only include ground water but also water accumulated at site due to rain or any other reason including water from existing drain/nearby drains.

DIVERSION OF EXISTING DRAIN

12. As the work is to executed at the alignment of existing drain after diverting drain water/effluent from existing drain by excavating trench/providing RCC pipes of required size/by pumping arrangements for the purpose of construction of new drain at the alignment of existing drain. Water logging occurred due to any reason including storm water, sewer etc. is to be removed by the contractor for which nothing extra will be paid. Nothing extra will be paid for dewatering, removal of sludge, providing pumps, pipe etc. except payment under agreement item of diversion to be measured in length of existing drain from which water is to be diverted.

CLOSE TIMBERING PLANKING AND STRUTTING:

13. When the depth of trench/excavation in soft/loose soil exceeds 2 metres, stepping, sloping and/ or planking and strutting of sides shall be done. In case of loose and slushy soils, the depths at which these precautions are to be taken, shall be determined by the Engineer-in-Charge according to the nature of soil. The payment for providing close timbering will be made only if the depth of trench/excavation in soft/loose soil exceeds 2 metres. No payment of close timbering will be made, even if it is provided, in the area where the depth of trench/excavation in soft/loose soil is upto 2 metres.

OFFICE EQUIPMENT'S

14. For Quality Control Measures, Preparation of Bills and Monitoring the Quality, the contractor shall provide one Computer having Intel core i7 processor, MS-Windows-10, A-3 Coloured Inkjet & A-4 LaserJet Printers, Scanners, UPS etc. in the site office of Engineer-in-Charge.

SHUTTERING

To achieve the timely completion of work, the contractor will arrange minimum shuttering material at site as detailed below:-

a) Shuttering for RCC wall of drain = 200 sqm.
b) Shuttering for RCC roof slab of drain = 100 sqm.

The above requirement is indicative and minimum. However, to achieve timely completion of work, the contractor may have to arrange more shuttering material at site and nothing extra shall be paid on this account.

GENERAL SPECIFICATIONS FOR RCC U/Box SHAPE PRE-CAST DRAIN

The topographical survey, alignment survey and Geo survey using Ground Penetrating Radar (GPR) for road side storm water drains, Nalla channelization & Nalla development works, and cross drainage works etc. shall be done by the contractor within one month of date of start to taking up respective items of work from the schedule of quantity. All the details of Reduced Levels taken by the contractor should be tallied with the working drawing issued for execution by M/s Green design and engineering services Pvt. Ltd. Any discrepancy found should be brought to the knowledge of Engineer-in-Charge before execution of work.

The nature and scope of work covered under various sub-works shall be as under

Road side storm water drains

The work mainly consists of laying road side Precast RCC U Shape /Box Drain and construction of RCC storm water drain/RCC Storm Water inlet chambers of various sizes for pipe drains, road side RCC box type drains, curb type inlets, precast surface gutters, connections of gutters with main drains, etc. for collection & conveyance of the storm water to the natural water courses. Ancillary work includes excavation in various types of strata, dismantling and relaying cables, poles, pipelines and other structures coming in the way of the work; relaying water mains and reinstating the roads etc.

The work consists of replacement of existing storm water drain works along the road, including foundations, substructure, superstructure and other related works.

Removing of sludge from existing drain if required for all leads and lifts shall be removed through vehicle and dump in authorized Municipal dumping ground as directed by Engineer-in-Charge.

Design, Manufacture, Supply and laying of factory-made (wet cast) Precast U Shape /Box Drain as per BOQ item made up of high strength precast reinforced cement concrete duly steam cured in a controlled environment and manufactured using high performance self-compacting concrete of M-50 grade using Fe 550D grade TMT steel reinforcement bar. Design should confirm to BIS / JIS standards / Guidelines/ Codes furthermore taking into consideration expected handling and erection stresses etc. It shall be designed for 10 T Axle Load-5T Wheel Load. Criteria for providing pre-cast RCC U Shape /Box drain are enlisted below.

i) Precast factory shall have ISO 9001, ISO 14001 and ISO 45001 for design, manufacture and dispatch of products.
ii) Product shall be manufactured using RO water for durability criteria.
iii) Steam Curing boiler system with automated steam control system for this production quantity.
iv) QA-QC set up with NABL approved in-house laboratory with all equipment to test all raw materials & fresh concrete. Affidavit stating association with outside laboratory is not permitted.

v) Reinforcement cage shall be fabricated with in-house automated cage making unit having necessary machines like cutting and bending for getting consistent rebar production.

Laying and jointing: Unloading of precast concrete drains shall be done as per the standard guideline. Laying trench shall be prepared with PCC of appropriate thickness. Dry levelling cement mortar of 5-15 mm thickness shall be placed on the PCC Course to level the surface. Precast drains shall be lifted with suitable lifting devices for placing. The product shall have a tie shape groove of 10-20 mm width and 25 mm depth on both sides for joining two precast units. The groove joint shall be filled with non shrink grout

Quality Assurance: The product shall be manufactured from standard and tested raw materials including cement, fine aggregate, coarse aggregate, concrete and reinforcement. The water used for manufacturing of concrete should be potable water with TDS value not more than 300 ppm. The product shall be steam cured in the controlled environment for better quality control A with a temperature control of 45 ±2 Deg. Centigrade to 65 ±2 Deg. Centigrade. Precast factory shall have in-house NABL approved testing facility for quality checks. The factory-made precast products shall be subject to strict quality control and assurance process by the manufacturer and approved by quality assurance personnel. The product must have reinforcement as per design drawings. The product should be handled mechanically at site. The product shall have in-built inserts at optimized locations for handling/transportation. The contractor is required to submit lot wise manufacture test report.

(TABLE-1)

Equipment's for Testing of Materials of Concrete at Site Laboratory

All necessary equipment for conducting all necessary tests shall be provided at the site in the well furnished site or mobile laboratory by the contractor at his own cost The following minimum laboratory equipment's shall be set up at site office laboratory-

Sl. No.	Equipment	Numbers (Minimum)
1	Slump	2
2	Graduated glass measuring cylinder	As per requirement
3	Sets of sieves for coarse aggregate	2
4	Sets of sieves for fine aggregate	2
5	Cube moulds size 70mmx70mmx70mm	5
6	Cube moulds size 150mmx150mmx150mm	10
7	Electronic balance 100 kg	1
8	Physical balance weight upto 5kg	1
9	Measuring jars 100ml, 200ml, 500ml	3 Nos. each
10	Gauging trowels 100mm & 200 mm with wooden handle	3 Nos. each
11	Spatula 100mm & 200mm with long blade wooden handle	2 Nos. each
12	Vernier calipers 12" & 6" size	2 No. each
13	Screw gauge 0.1mm -10mm, least count 0.05	2 Nos.
14	Thickness gauge for measuring flakiness index	1 No.
15	Elongation gauge	2 Nos.
16	Measuring cylinder 3,5,10 & 15 liter cylinder	2 Nos. each
17	Motorized sieve shaker	1 No.
18	Digital Thermometer upto 150° C	5 Nos.
19	Pruning Rods 2kg weight length 40 cm and ramming face 25 Sqm.	2 Nos.
20	Extra Bottom plates for 15 cm cube mould	6 nos.
21	Concrete temperature measuring thermometer with Brass protection sheath 0- 100 degree centigrade	2 Nos.
22	Mortar Cube vibrator	1 No.
23	Cone equipment for density test	1 No.
24	Any other equipment for site tests as outlined in BIS and as directed by the Engineer-in-charge.	1 No.

Note:

(i) The contractor has to establish within 15 days from the award of work a field laboratory at site including all necessary equipment's and skilled manpower for the Field Tests as indicated in the tender document at his own cost to have proper quality control. Rs.5,000/-per day shall be recovered from the contractor for any delay beyond the specified period. If contractor fails to establish lab within additional period of 15 days, the Engineer in charge shall initiate action as deemed fit under relevant clauses of the agreement.

(ii) A site laboratory with temporary structure of minimum 25 sqm area may be fabricated at site by the contractor for accommodating above instruments and for conducting of various tests for which no extra payment shall be made to the contractor.

(iii) One sample keeping room of minimum area of 20 sqm should also be fabricated at site for keeping various material brought by the contractor at site and approved by the Engineer-in-charge. No extra payment on account of this shall be made to the contractor.

(iv) All the above structures should be decent looking and shall be fabricated as per direction of Engineer-in-charge.

(v) All the above structure shall be demolished after completion of work and the dismantled material shall be the property of the contractor.

(vi) Third party quality assurance by technical team of any reputed institution such as NCCBM/CBRI/IIT and like will be done and the report submitted by the quality assurance team shall be communicated to the contractor by the Engineer-in-charge. The contractor has to comply / rectify the defects/ shortcomings pointed out by the quality assurance team at his own cost within the time specified by Engineer-in-charge.

(vii) The necessary outside tests shall be conducted in the lab of Delhi Technical University, Delhi / CPWD/PWD / CRRI/IIT Delhi /IIT Roorkee /NTH or any other approved Government Engineering College. The sample of carrying out all or part of the tests shall be collected by the Engineer-in-charge or on behalf of officer-in-charge of the quality assurance wing of Central Design organization, CPWD and his authorized sub-ordinate or by the officer-in-charge of PWD or his authorized sub-ordinate and authorized representative of Testing Laboratories for carrying out the independent quality assessment / control test and the results will be binding on the contractor. The contractor or his authorized representative shall associate in collection, preparation, forwarding and testing of such samples. In case he or his authorized representative is not present or does not associate himself, the result of such tests and consequences thereon shall be binding of the contractor.

CONDITION FOR SECURITY DEPOSIT

Defect liability period of the work will be 12 months except for Precast drain work. The defect liability period for the Precast drain work will be 10 years.

Deduction for security depos

1. 2.5% of tendered value of schedule of quantity will be deducted in every bill.
2. Additional Security Deposit @ of 2.5% of cost of Precast drain work will be deducted from the bills.

Release of security deposit

1. ***The security deposit deducted @*** 2.5% of tendered value of schedule of quantity will be released only after successful completion of defect liability period of 12 Months.

2. ***Additional Security Deposit @*** 1.5% deducted from Precast drain work will be released after successful completion of 05 (Five) Years of defect liability period from the date of completion of the work.

3. ***Additional Security Deposit @*** 1.0% deducted from Precast drain work will be released after successful completion of 10 (Ten) Years of defect liability period from the date of completion of the work.

Proforma For Mandatory Tests to Be Attached with Running Bills

Name of the work: …….....
Name of contractor…….....
Agreement no. and date ……
R/A Bill No.…….....

Sl. No.	Item	Quantities as per agreement	Frequency as per specification	No. of tests required	Upto date quantity	No. of tests required	No. of tests actually done	Remarks
1	2	3	4	5	6	7	8	9

Note: If the number is less than that required, then reasons shall be recorded.

Special Condition for submission of Running Account / Final bill by contractor

1. All measurement of all items having financial value shall be entered by the contractor and compiled in the shape of the Computerized Measurement Book having pages A-4 size as per the provision given in General Condition of Contract and shall be submitted online within 7 days of the execution of the road work along with copy of supporting photographs.

2. The contractors shall submit his final bill to the Executive Engineer within one month of completion of work, which shall be checked and if found satisfactory shall be paid by Engineer-in-Charge within prescribed time limit given in clause-9 of GCC. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished.

3. In case he fails to submit the final bill within above mentioned time limit, the bill shall be finalized the Executive Engineer after giving notice of 15 days to the contractor.

4. The original GST bill, for all materials used in the particular work, purchased after award of work shall be compulsorily submitted, these GST bill of material is to be certified by the concerned AE/JE. No bill will be entertained in the absence of the original GST Bill.

Special Condition of National Green Tribunal (NGT)

1. As per orders issued by Hon'ble National Tribunal (NGT) in respect of improvement of ambient air quality, the agencies shall ensure that all the trucks or vehicles of any kind which are used for construction purposes and/or are carrying construction materials like cement, sand and other allied material shall be fully covered. The vehicles would be properly cleaned, shall be dust free and/or other precautions would be taken to ensure that en-route their destinations, the dust, and or other particles are not permitted to be released in the air and/or contaminate air.

2. No melting/hot mixing of bitumen/bituminous byproduct is allowed at site/open roads, it is the responsibility of the agency to ensure that their activity does not cause any air pollution during the course of execution of work and/or storage of material or any other activity. In the event of default the agency shall be liable to be prosecuted under the law in force as well as for causing environmental pollution and shall also be liable to pay compensation which would be determined by the tribunal in accordance with law.

3. During the execution, cleaning of the surface will be done by the sucker machines instead of traditional air compressors, so that air pollution can be prevented. The contractor shall also ensure that there will be no burning of leaves, branches, garbage, bitumen etc any material at site.

4. The agency would not be permitted to store/dumping of construction material or debris on the metalled road.

5. Construction material or debris stored shall be completely covered by tarpaulin at physically demarcated space by the Engineer-in-Charge. Agency shall also ensure that such storage does not cause any obstruction to the free flow of traffic and/or inconvenience to pedestrians.

6. Agency shall ensure that all the labour persons should wear the medical mask at site during the execution of any work. Nothing shall be paid extra on this account.

7. All the vehicles deployed at site should be compliant to GRAP-IV norms.

Special Condition for Malba Disposal

1 Agency will taken necessary photographs before & after for all locations of dumped malba authorized or unauthorizedly on daily basis to kept in record.

2 The disposal of silt/sludge/building rubbish/earth mixed malba to the authorized MCD dumping ground shall be done through mechanical transport for Disposal of Malba.

3 The disposal of silt/sludge/building rubbish/earth mixed malba has to be done in trucks/dumpers covered with polythene/Tarpolin sheets from hygienic point of view.

4 The malba shall be disposed/removed from the site within 48 hours from the time of intimation from the Engineer-in-Charge.

5 For the purpose of removal of malba contractor shall have to make his own arrangement of adequate no. of vehicles required at the MCD authorized dumping ground including necessary registration of vehicles for this purpose. Nothing extra shall be paid on this account.

6 The contractor shall intimate contact number/ mobile number of himself as well as of the supervisory staff who have to carry out this job of disposal of malba.

7 All the C&D waste generated from dismantlement in PWD works shall be transported/disposed off at the identified landfill sites of Municipal Corporation of Delhi and documentary evidence in form of receipts from Municipalities and video record of pre-measured stacks has to be mandatorily submitted to the department, failing which a penalty at the double the prevailing rate of transportation plus processing fee payable at the landfill site shall be recovered and no payment for concerned agreement item and reimbursement of processing fee shall be made to contractors.

Special Conditions to Prevent Air Pollution

1. The contractor shall not store / dump construction material or debris on metalled road.
2. The contractor shall get prior approval from Engineer-in-Charge for the area where the construction material or debris can be stored beyond the metalled road. This area shall not cause any obstruction to the free flow of traffic / inconvenience to the pedestrians. It should be ensured by the contractor that no accidents occur on account of such permissible storage.
3. The contractor shall take appropriate protection measures like raising wind breakers of appropriate height on all sides of the plot / area using CGI sheets or plastic and / or other similar material to ensure that no construction material dust fly outside the plot area.
4. The contractor shall ensure that all the trucks or vehicles of any kind which are used for construction purposes / or are carrying construction materials like cement, sand and other allied material are fully covered. The contractor shall take every necessary precautions that the vehicles are properly cleaned and dust free to ensure that en-route their destination, the dust, sand or any other particles are not released in air / contaminate air.
5. The contractor shall provide mask to every worker working on the construction site and involved in loading, unloading and carriage of construction material and construction debris to prevent inhalation of dust particles.
6. The contractor shall provide all medical help, investigation and treatment to the workers involved in the construction of building / roads and carry of construction material and debris relatable to dust emission.
7. The contractor shall ensure that C&D waste is transported to the C&D waste site only and due record shall be maintained by the contractor.
8. The contractor shall compulsory use of wet jet in grinding and stone cutting.
9. The contractor shall comply all the preventive and protective environmental steps as stated in the MoEF guidelines, 2010.
10. The contractor shall carry out on road inspection for black smoke generating machinery. The contractor shall use cleaner fuel.
11. The contractor shall ensure that all DG sets comply emission norms notified by MoEF.
12. The contractor shall use vehicles having pollution under control certificate. The emissions can be reduced by a large extent by reducing the speed of a vehicle to 20 Km/ph. Speed bumps shall be used to ensure speed reduction. In cases where speed reduction cannot effectively reduce fugitive dust, the contractor shall divert traffic to nearby paved areas.
13. The contractor shall ensure that the construction material is covered by tarpaulin. The contractor shall take all other precaution to ensure that no dust particles are permitted to pollute air quality as a result of such storage.

CONDITION FOR MATERIAL AND QUALITY ASSURANCE

1. Quality Assurance Manual of CPWD, MoRTH and Manual for Quality Control in road and Bridge works to be followed.

2. The contractor shall ensure quality control measures on different aspects of construction including materials, workmanship and correct construction methodologies to be adopted. He shall have to submit quality assurance programme within two weeks of the award of work. The quality assurance programme should include method statement for various items of work to be executed along with check lists to enforce quality control.

3. The contractor shall get the source of all other materials, not specified elsewhere in the document, approved from the Engineer-in-Charge. The contractor shall stick to the approved source unless it is absolutely unavoidable. Any change shall be done with the prior approval of the Engineer-in-Charge for which tests etc. shall be done by the contractor at his own cost. Similarly, the contractor shall submit brand/ make of various materials not specified in the agreement, to be used for the approval of the Engineer-in-Charge along with samples and once approved, he shall stick to it.

4. **Other Laboratories :**
The contractor shall arrange carrying out all tests required under the agreement through the laboratory as approved by the Engineer-in-Charge and shall bear all charges in connection therewith including charges for testing for all materials except cement for which separate condition is provided in tender document.

5. **Sampling of Materials:**
Sample of building materials fittings and other articles required for execution of work shall be got approved from the Engineer-in-Charge. Articles manufactured by companies of repute and approved by the Engineer-in-Charge shall only be used. Articles bearing BIS certification mark shall be used in case the above are not available, the quality of samples brought by the contractor shall be judged by standards laid down in the relevant BIS specifications. All materials and articles 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.
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.
BIS marked materials except otherwise specified shall be subjected to quality test at the discretion of the Engineer-in-Charge besides testing of other materials as per the specifications described for the item/materials. Wherever BIS marked materials are brought to the site of work, the contractor shall if required, by the Engineer-in-Charge furnish manufacturers test certificate to establish that the material produced by the contractor for incorporation in the work satisfies the provisions of BIS codes relevant to the material and/or the work done.
The contractor shall procure all the materials in advance so that there is sufficient time to testing and approving of the materials and clearance of the same before use in work.
All materials brought by the contractor for use in the work shall be got checked from the Engineer-in-Charge or his authorized representative of the work on receipt of the same at site before use.
The contractor shall be fully responsible for the safe custody of the materials issued to him even if the materials are in double lock and key system.

The Stone aggregate/stone, sand shall be brought from any quarries subjected to the said materials confirm CPWD specifications.

5 The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the Jr. Engineer-in-Charge of work and which shall be duly signed by the contractor or his authorised representative.

6 The contractor shall render all help and assistance in documenting the total sequence of this project by way of photography, slides, audio-video recording etc. Nothing extra shall be payable to the contractor on this account. However cost of photographs, slides, audio/videography etc shall be born by the department.

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

8 Separate cement registers showing the receipt of the OPC and PPC shall be maintained at site. The contractor shall construct separate godowns for storage of OPC & PPC at site and nothing extra on this account shall be payable.

9 Cement issued shall be for consumption at site only. No cement for factory made items and those not manufactured at site shall be issued.

10 In case there is any discrepancy in frequency of testing as given in the list of mandatory test and that in the individual sub-head of work as per CPWD specification 2019 Vol. 1 & 2 the higher of the two frequencies of testing shall be adopted.

11 Maintenance of Cement Register:

All the register of tests to be carried out at construction site or in outside laboratories shall **be maintained by the contractor** which shall be issued to the contractor by Engineer-in-Charge in the same manner as being issued to CPWD field staff. **It shall be mandatory for the field staff to retain the self-attested (by agencies/contractors) copies of tax paid bill of the materials entered in the MAS register viz. Steel, Cement, Bitumen, Paint, Primer, distemper, varnishes, Tile Adhesive, Admixture, Anti termite chemical, Water proofing compound material and any other item as decided by the NIT approving authority. Self-attested copies of Tax paid bills of materials taken in MAS register shall be obtained by the field staff from the agencies/contractors before setting the payments. In case of any doubt the same can be verified by the field staff. However, onus of genuineness of Tax paid bills rests with the agencies/contractors.**

(i) The test registers to be issued to the contractor are :

a) Materials at site account register.

b) Cement register.

c) Master test registers.

d) Cube test register.

e) Paint register.

f) Inspection register.

g) Drawing register.

(ii) All the entries in the register will be made by the designated engineering staff of the contractor and same should be regularly reviewed by JE/AE/EE.

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

(iv) Submission of copy of all test registers, material at site 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.

SAFETY IN CONSTRUCTION

All major construction sites shall have proper barricading so that the entry of general public to the construction site could be prohibited and chances of any untoward incident could altogether be mitigated. Concerned agency shall ensure that the Information board and barricading is always kept intact and there are no gaps in barricading that could potentially be dangerous to the general public/traffic. There shall be barricading of the construction site, having proper signages and information of the project in progress, clearly specifying the following: -

i. Name of the Project
ii. Estimated Cost of the Project
iii. Estimated project Start and Completion date
iv. Name and contact number of the Contractor
v. Name and contact number of the site Engineer and supervising Engineer.
vi. Helpline number and contact details (including phone number) in case any citizen has to register any complaint/grievance.
vii. Helpline numbers of Traffic Police to be displayed, in case there is any traffic obstruction.

2.4.2 The Site Engineer shall ensure that there are adequate guards, illumination, fencing, fire extinguishers (if needed), proper drainage at the site, protective gear to workers available at all times.

2.4.3. There shall not be any water-logging in and around the work site. There shall be adequate washing facilities with proper drainage system at all times.

2.4.4. All awarded works costing more than 1 Cr shall have a safety engineer on site whose primary responsibility is to ensure safety on site. Any dereliction in safety by contractor should immediately be notified and remedial action to be taken as per direction of Engineer-in-Charge.

2.4.5. Mandatory site safety reports shall be submitted by safety officer. Cross verification of safety shall be conducted once in a month by designated teams of PWD and the action has to be taken as per instructions of the higher authorities in PWD.

2.4.6. Agency must ensure that all all-safety protocols are followed. Any violation of safety protocol shall be notified to the contractor, along with compensation and stoppage of work if needed. The Contractor shall not proceed with the work unless all the safety protocols are adhered to.

2.4.7. The Engineer-in-charge of work shall issue Show cause notices to the contractor specifying therein the nature of safety violation and the compensation proposed. Considering to the cause shown by the contractor, the Engineer in charge shall pass final orders of the compensation which shall be binding on the contractor.

2.4.8. In case of any accident leading to loss of life, on the construction site, due to lack of safety protocol, the contractor shall be black listed, an FIR shall be lodged and administrative action shall be initiated against the agency.

2.4.9. In event of a fatality on work site or major or minor injury, it is the primary responsibility of the agency to notify the Department in writing of such even within 1 hour of the incident and the reason thereof.

2.4.10. Compliance to safety protocol norms shall be part of the work and additional operational required guidelines in this regard shall be issued by the Engineer-in-charge which shall be binding on the agency.

2.4.11 The contractor shall employ only such methods of construction, tools and plants as are appropriate.

2.4.12 The contractor shall take all precautions and measures to ensure safety of works and work man and shall be fully responsible for the same.

2.4.13 Safety pertaining to construction such as centring & shuttering, scaffolds, ladders, working platforms, gangway etc. shall be governed by CPWD safety code, relevant safety codes and the directions of Engineer in charge.

2.4.14 All the staging to be either of tubular steel structure with adequate bracings as approved or made of built-up structural sections made from rolled structural steel sections.

2.4.15 Form work shall be properly designed for self weight, weight of reinforcement, weight of fresh concrete and in addition the various live loads likely to be imposed during construction process.

2.4.16 The form work shall be designed & constructed so as to remain sufficiently rigid during placing & compaction of concrete & shall be such as to prevent loss of slurry from the concrete.

2.4.17 The vertical supports shall be adequately braced or otherwise secured in position that these do not fall when the load gets released or the supports are accidentally hit.

2.4.18 A thorough inspection of tubular steel centering is necessary before its erection and members showing evidence of excessive rusting, kinks, dents or damaged welds shall be discarded. Buckled or broken members shall be replaced. Care shall also be taken that locking devices are in good working order and that coupling pins are effectively aligned to frames. Tubes should have end to end joints in adjacent tubes staggered. Sleeve couplers should be used in preference to joint pins for axial connections.

2.4.19 Inclined forms which give rise to very high horizontal forces should be taken care of by trussing and diagonal bracing

2.4.20 Vertical members should be placed centrally under the members to be supported and over the member supporting them with no eccentricity exceeding 25mm

2.4.21 The centering frames shall be tied together with sufficient braces to make a rigid and solid unit. It shall be ensured that struts and diagonal braces are in proper position and are secured so that frames develop full load carrying capacity. As erection progresses, all connecting devices shall be in place and shall be fastened for full stability of joints and units.

2.4.22 Wedges under the supports shall be set on firm soil / PCC which assures adequate stability for all props. Care shall be taken not to disturb the soil under the supports. Adequate drainage shall be provided to drain away the water coming due to rains, easing of forms or during the curing of the concrete to avoid softening of the supporting soil strata.

2.4.23 During pouring of the concrete, the cantering shall be constantly inspected and strengthened, if required, wedges below the vertical supports tightened and adjustment screws properly adjusted as necessary.

2.4.24 Only workmen actually engaged in the form work shall be allowed in the area during operations. Those engaged in removing the form work shall wear helmets, gloves and heavy soled shoes and approved safety belts etc.

2.4.25 The safety code as lay down in respective clauses of Agreement shall have to be strictly followed by the agency/sub agency.

Safety Measures

When workers are employed in sewers and manholes, which are in active use, the contractors shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public. In addition, the contractor shall ensure that the following safety measures are adhered to:-

a. Entry for workers into the line shall not be allowed except under supervision of the JE or any other higher officer.
b. At least 5 to 6 manholes upstream and downstream should be kept for at least 2 to 3 hours before any man is allowed to enter into the manhole for working inside.
c. Before entry, presence of toxic gases should be tested by Inserting wet lead acetate paper which changes colour in the presence of such gases and gives indication of their presence.
d. Presence of Oxygen should be verified by lowering a detector lamp into the manhole. In case, no Oxygen is found inside the sewer line workers should be sent only with Oxygen Kit.
e. Safety belt with rope should be provided to the workers. While working inside the manholes, such rope should be handled by two men standing outside to enable him to be pulled out during emergency.
f. The area should be barricaded or cordoned of by suitable means to avoid mishaps of any kind. Proper warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.
g. No smoking or open flames shall be allowed near the blocked manhole being cleaned.
h. The malba obtained on account of cleaning of blocked manholes and sewer lines should be immediately removed to avoid accidents on account of slippery nature of the malba.
i. Workers should not be allowed to work inside the manhole continuously. He should be given rest intermittently. The Engineer-in-Charge may be decide the time up to which a worker may be allowed to work continuously inside the manhole.
j. Gas masks with Oxygen Cylinder should be kept at site for use in emergency.
k. Air-blowers should be used for flow of fresh air through the manholes. Whenever called for, portable air blowers are recommended for ventilating the manholes. The Motors for these shall be vapour proof and of totally enclosed type. Non sparking gas engines also could be used but they should be placed at least 2 metres away from the opening and on the leeward side protected from wind so that they will not be a source of friction on any inflammable gas not that might be present.
l. The workers engaged for cleaning the manholes/sewers should be properly trained before allowing to work in the manhole.
m. The workers shall be provided with Gumboots or non-sparking shoes bump helmets and gloves non sparking tools safety lights and gas masks and portable air blowers (when necessary). They must be supplied with barrier cream for anointing the limbs before working inside the sewer lines.
n. Workmen descending a manhole shall try each ladder stop or rung carefully before putting his full weight on it to guard against insecure fastening due to corrosion of the rung fixed to manhole well.
o. If a man has received a physical injury, he should be brought out of the sewer immediately and adequate medical aid should be provided to him.
p. The extent to which these precautions are to be taken depend on individual situation but the decision of the Engineer-in-Charge regarding the steps to be taken in this regard in an individual case will be final.

LIST – A

LIST OF APPROVED INSTITUTE/LABORATORY FOR DESIGN MIX/ JOB MIX

1.	IIT Delhi
2.	C.R.R.I, Delhi
3.	IIT Roorkee
4.	Delhi Technical University, Delhi
5.	NSUT, Delhi.
6.	NIT, Delhi.

LIST – B
LIST OF APPROVED INSTITUTE/LABORATORY FOR TESTING OF MATERIAL

1.	IIT Delhi
2.	C.R.R.I, Delhi
3.	IIT Roorkee
4.	Shri Ram Institute for Industrial Research, University Road, Delhi
5.	Delhi Technical University, Delhi
6.	NIT, Delhi
7.	NSUT, Delhi
8.	NABL accredited lab as approved by Engineer-in-Charge.

LIST OF PREFERRED BRANDS/ MANUFACTURERS/MAKES

NOTES:

1) A List of Preferred Brand Names of Various Materials / Products are shown below for usage in execution of Work. However, approved equivalent material of any other Specialized Companies / Firms may also be used, in case it is established that the Brands Specified below are not available in the market or in other unavoidable circumstances and subject to Approval of the alternate Brand by the Chief Engineer, South Maint. Zone., PWD and also subject to cost adjustment, if any.
2) It must be ensured, in general, that all materials to be used in the works shall bear BIS Certification mark. 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 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.
3) The list given below 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, a proper check on the quality of the product, actually to be used, should be exercised.

Sl. No.	Material	Approved make
1	Ordinary Portland cement	ACC, Gujarat Ambuja (Vikram),Ultra-Tech, JP Rewa, J.K. cement, Lafarge Cement, Cement Corporation of India
2	Slag Cement	ACC, Gujrat Ambuja, Ultra-Tech
3	TMTFe-500D/550D Reinforcement Bars	Tata Steel, RINL, SAIL, JSW,JSPL
4	Structural Steel	SAIL, RINL, IISCO, JSW Steel Limited, Jindal Steel Power Limited, TATA Steel Limited
5	Mild Steel Tubes	Tata Steel, JSW, JSPL, SAIL
6	Stainless Steel	Tata Steel, JSW, SAIL
7	Anchor Fastener	HILTI, BOSCH
8	Welding Electrodes	ESAB, Advani-orlikon, Weld Alloy
9	Synthetic Enamel Paints	Asian (Apcolite), Berger Luxol (gold), ICI Dulux (Gloss), Nerolac (Full gloss hard drying), SPT Sahara Plus, BIRLA OPUS PRIME,
10	Thermoplastic paints	Asian (Apcomark), Berger (Sigmark), ICI, Alcolite, Neromark.
11	RMC	ACC, BIRLA, L&T, Unitech, Ultratech, Prism Johnson, V.K. Readymix Concrete, M/s Shri Ram Readymix Concrete Pvt. Ltd., NDCON Construction, Antritech Private limited.
12	Admixtures	FOSROC, SIKA,MBT, CICO Technologies Ltd., MC Baucheme, BASF
13	Release Agent	FOSROC, MBT, CICO, MC Baucheme, BASF
14	Epoxy	FOSROC, SIKA, QUALCRETE, CIBA, Trimurti Wall care Products Pvt. Ltd.
15	Bitumen	IOCL, HPCL, BPCL or any other brand approved by NHAI

16	PMB/CRMB-60/ Bitumen Emulsion	ITPL(IOCL), HINCOL (HPCL), BPCL, TIKITAR (Shell). or any other brand approved by NHAI
17	Bitumen Grade VG-30/ VG-40	IOCL, BPCL, HPCL or any other brand approved by NHAI
18	Paint Emulsion, Wall Primer, Acrylic Distemper	Asian, Berger, Dulux, BIRLA OPUS PRIME,
19	Glow Stud (Cat Eye)	Authorized converter of Dow chemicals, 3M, Avery Dennison.
20	Solar Stud	Authorized converter of Dow chemicals, 3M, Avery Dennison.
21	Delineator	Authorized converter of Dow chemicals, 3M, Avery Dennison.
22	Geotex tile & Geo-grids	AIMIL, Z-Tech, Netlon (India), Garware wall ropes Ltd, Maccaferri
23	Tactile Tiles/Vitrified Tiles	Kajaria Ceramics Ltd., Somany Ceramics Ltd, Johnson
24	Paver blocks	KK, NITCO, Dalal, Perfect Tiles, KPF
25	Kerb Stone	KK, NITCO, Dalal, Perfect Tiles, KPF
26	Manhole covers/frames/RCC Drain Cover	KK, NITCO, Dalal, Perfect Tiles, KPF
27	Gabion Mesh	Meccaferri, Techfeb
28	Glazed Tile	ORIENT,SOMANY,NITCO,KAJARIA, Johnson
29	Cement Paint, Paint, Distemper, Primer	ICI India Ltd, Berger Paint Ltd, Kansai, Nerolac Paint, Asian Paint Ltd.
30	Retro Reflective Sheet	Authorized converter of Dow chemicals, 3M, Avery Dennison.
31	RCCPIPES	I HP or ISI marked equivalent
32	SFRC Railing	KK,HCP
33	Precast Drain	Fuji Infrastructure Technology, Siddhivinayak Pre-cast Pipes Pvt. Ltd., Fuji Silvertech Concrete Pvt. Ltd., Trilok Infratech Private Ltd.

NOTE: -

1. **In addition to the brands mentioned above other brands/manufacturers can also be used if approved by NIT approving authority with recorded reasons.**

2. **Prior approval of NIT Approving Authority is to be obtained in case of any other make, if required, by giving three make timely with justification. No delay if any on this account shall be entertained. The other make will be allowed only subject to cost adjustment, if any.**

No.F.dspwd-2/CD057801602/ 1641-1647
PUBLIC WORKS DEPARTMENT
GOVERNMENT OF NCT OF DELHI
*****

PWD Secretariat
3rd Level, MSO Building, New Delhi
Dated: 14th August, 2025

CIRCULAR

Sub: Imposition of Enhanced Performance Guarantee in Case of Abnormally Low Bids – Regarding

It has been observed that in certain tenders, bidders are quoting abnormally low rates. While competitiveness is encouraged, such abnormally low bids (ALBs) raise serious concerns regarding the quality, sustainability, and timely completion of works. Accordingly, in line with the principles of financial prudence and safeguarding public interest, it has been decided to introduce the requirement of Enhanced Performance Guarantee (EPG) in cases where the bid amount is substantially below the estimated cost.:

1. Definition of Abnormally Low Bid (ALB):

A bid shall be treated as abnormally low if the quoted bid price is more than 25% below the estimated cost put to tender (ECPT).

2. Requirement of Enhanced Performance Guarantee (EPG):

In cases of ALBs as defined above, the bidder shall be required to submit an Enhanced Performance Guarantee in addition to the standard Performance Guarantee (PG) as per the following structure:

Percentage Below ECPT	Additional EPG to be Submitted
25% or below	Amount equivalent to the difference between the 25% less amount of ECPT and quoted rate

Note: The EPG shall be in the form of Bank Guarantee or other acceptable form as per existing CPWD guidelines and must be submitted within the time frame prescribed for Performance Guarantee.

Contd...2

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)

3. Applicability:

This circular shall be applicable to all future tenders invited by PWD, Delhi and to ongoing tender processes where technical evaluation is yet to be completed.

4. Responsibility and Enforcement:

All Chief Engineers, Superintending Engineers and Executive Engineers are instructed to ensure strict compliance with the above provisions. No award of work shall be done without ensuring the deposition of the required EPG in applicable cases.

5. Exemption or Relaxation:

No relaxation shall be permitted in the requirement of EPG for unreasonably low bids, except with the prior approval of the competent authority in exceptional circumstances.

This issues with the approval of Hon'ble Minister (PWD), GNCT of Delhi.

(M.K. Nikhil)
Deputy Secretary (PWD)

To

1. The Engineer in Chief PWD, 12th Floor, MSO Building, New Delhi
2. All Chief Engineers of the PWD, MSO Building, New Delhi
3. All SEs/EEs concerned through Chief Engineers
4. System Analyst, PWD with the request to upload the Circular on the website of PWD under relevant section.

Copy for information to:

1. Secretary to Hon'ble Minister (PWD), GNCTD
2. PS to Addl. Chief Secretary, PWD, 3rd Floor MSO Building, New Delhi
3. PS to Special Secretary, PWD-I/II, 3rd Floor MSO Building, New Delhi

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

GOVERNMENT OF NCT OF DLEHI
PUBLIC WORKS DEPARTMENT
3rd Level, MSO Building, PWD Headquarter NEW DELHI

No Pr CE (M&F)/E in C (PWD)/7111 Hdqpwd2/49-52 **Dated** 10/01/2024
CD 057744891

OFFICE MEMORANDUM FOR CONSTRUCTION WORKS

CPWD vide OM. No. DG/CON/Construction 2023/03 dated 6.12.2023 has brought in the following amended provision with regard to clause -12 and clause 12.2 of GCC 2023 for Construction Works

Existing provision
Clause 12 Deviations/ Variations Extent and Pricing for construction Works.
The completion cost shall, in no case, exceed 1.5 times the contract amount
12.2 Deviation, Extra Items and Pricing **a) Non-Schedule Extra Items** The contractor may, within fifteen days .... in the market on the rate of materials taken from tax paid bills.

In order to further strengthen and improve the contract management in PWD, GNCTD, the following provisions shall be applicable to PWD with regard to construction works (in place of above-mentioned amended provisions) with immediate effect.

Clause 12 Deviations/ Variations Extent and Pricing, as applicable to PWD, GNCTD for construction Works.
The completion cost shall, in no case, exceed **1.25 times** the contract amount
12.2 Deviation, Extra Items and Pricing **a) Non-Schedule Extra Items** **No non-schedule extra item shall be allowed to be executed.**

The other provisions of above OM of DG, CPWD shall however continue to apply.

This issues with the approval Pr. Secretary, PWD

(Shashanka Ala, IAS)
Special Secretary, PWD-II

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)

Copy for necessary action to:-

1. Engineer in Chief, 12th Floor, Floor MSO Building, New Delhi
2. All Chief Engineers of the PWD for further circulation to all the SEs/EEs/ AEs

Copy for information also to:-

1. PS to Pr. Secretary, PWD, 3rd Floor MSO Building, New Delhi
2. PS to Special Secretary- I, PWD, 3rd Floor MSO Building, New Delhi

Shashanka Ala, IAS
Special Secretary, PWD-II

प्राप्ति की सूचना
EE(P)
10 JAN 2014
संख्या 1148E dt
E (S)/EE(P)/AAE

Copy to all SEs for info.
These provisions should form part of all agreements forthwith
10/1/14

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL------- AE/SWR-25 EE/SWR-2 AE (P) EE (P)

Schedule of Quantity

Name of Work : Construction of RCC Precast drain, Toe wall and footpath on Goyla Dairy Road (ID : 1168) under Sub Division-25, Division- SWR-II, PWD, New Delhi.

Item No.	Description of Items	Qty	Unit	Rate	Amount
1	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge.				
1.1	All kinds of soil.	22604.00	cum	177.50	4012210.00
2	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 and for all lift.	6781.00	cum	196.00	1329076.00
3	Providing and laying in position ready mixed or site batched design mix cement concrete for plain cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana/Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength and durability; including laying at site, curing, carriage for all leads; but excluding the cost of centering, shuttering and finishing as per direction of the engineer-in-charge; for the following grades of concrete. All works upto plinth level : M-10 grade plain cement concrete (cement content considered @ 220 kg/cum) Note:- Cement content considered in this item is minimum @220 kg/cum. Nothing extra shall be payable on account of design mix specify more than @ 220 kg/cum	1095.00	Cum	8479.50	9285053.00
4	Centering and shuttering including strutting, propping etc. and removal of form for all heights				
4.1	Foundations, footings, bases of columns, etc. for mass concrete	1431.00	sqm	392.15	561167.00
4.2	Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc	3117.00	sqm	842.50	2626073.00
4.3	Suspended floors, roofs, landings, balconies and access platform	988.00	sqm	927.25	916123.00

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)

5	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level. Thermo-Mechanically Treated bars of grade Fe-500D or more.	58000.00	kg	107.85	6255300.00
6	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana/Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength and durability; including laying at site, curing, carriage for all leads; but excluding the cost of centering, shuttering and finishing as per direction of the engineer-in-charge; for the following grades of concrete. : All works upto plinth level : Concrete of M-30 grade with minimum cement content of 350 kg /cum Note:- Cement content considered in this item is minimum @350 kg/cum. Nothing extra shall be payable on account of design mix specify more than @ 350 kg/cum	580.00	cum	9300.05	5394029.00
7	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:				
7.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	1062.00	cum	7370.65	7827630.00
8	Steel work welded in built up section/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc.as required.				
8.1	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	1500.00	Kg.	172.60	258900.00
9	12 mm cement plaster finished with a floating coat of neat cement of mix :				
9.1	1:4 (1 cement: 4 fine sand)	4026.00	sqm	425.55	1713264.00
10	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :				
10.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture	5526.00	sqm	226.25	1250258.00
11	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge.				

11.1	Nominal concrete 1:3:6 or richer mix (i/c equivalent design mix)	1178.00	cum	2434.25	2867547.00
12	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.	686.00	Cum	3551.25	2436158.00
13	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.. In cement mortar	4506.00	Cum	2060.20	9283261.00
14	Dismantling of flexible pavement (bituminous courses) by mechanical means and disposal of dismantled material up to a lead of 1 kilometre, as per direction of Engineer-in-charge.	514.00	Cum	420.80	216291.00
15	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 Metre initial lead, for all leads including all lifts involved. Note 1:- Item will be payable only if the actual disposal slips of approved MCD dumping ground will be submitted by the agency to the department within 2 days of disposal of the malba/rubbish generated at site. Note 2:- Reimbursement of processing fees will be made separately at actual rates to the agency only after submission of original receipts withing 2 days of disposal of the malba/rubbish to the approved MCD dumping ground generated at site	5082.00	cum	263.95	1341394.00
16	Providing and applying tack coat using bitumen emulsion conforming to IS: 8887, using emulsion pressure distributer including preparing the surface & cleaning with mechanical broom				
	With medium setting bitumen emulsion				
16.1	On W.B.M / W.M.M. @ 0.4kg/sqm.	5144.00	sqm	21.20	109053.00
16.2	On bituminous surface @ 0.25kg/sqm	5144.00	sqm	14.05	72273.00

17	Providing and laying Dense Graded Bituminous Macadam using crushed stone aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers as per specifications to achieve the desired compaction and density, complete as per specifications and directions of Engineer-in-Charge.				
17.1	50 to 100 mm average compacted thickness with bitumen of grade VG-30 @ 5% (percentage by weight of total mix) and lime filler @ 2% (percentage by weight of Aggregate) prepared in Batch Type Hot Mix Plant of 100-120 TPH capacity.	309.00	cum	11129.55	3439031.00
18	Providing and laying Bituminous concrete using crushed stone aggregates of specified grading premixed with bituminous binder and filler, transporting the hot mix to work site by tippers, laying with paver finisher equipped with electronic sensor to the required grade, level and alignment and rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction and density as per specification, complete and as per directions of Engineer-in-Charge.				
18.1	40/50mm compacted thickness with bitumen of grade VG-30 @ 5.5% (percentage by weight of total mix) and lime filler @ 3% (percentage by weight of Aggregate) prepared in Batch type Hot Mix Plant of 100-120 TPH capacity.	206.00	cum	12126.20	2497997.00
19	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5 mm), including making drainage opening wherever required complete etc. as per direction of Engineer in-charge (length of finished kerb edging shall be measured to calculate volume for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	154.00	Cum	10117.69	1558124.00

20	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator, vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately). (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/ recoverable separately).	270.00	cum	9823.80	2652426.00
21	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer-in-Charge.				
21.1	With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	1543.00	cum	2784.00	4295712.00
22	Taking out existing kerb stones of all types from footpath/ central verge, including removal of mortar etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.	1800.00	metre	39.35	70830.00
23	Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.	2250.00	sqm	131.75	296438.00
24	Laying old cement concrete interlocking paver blocks of any design/ shape laid in required line, level, curvature, colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost).	1125.00	sqm	402.95	453319.00

25	Laying at or near ground level old kerb stones of all types in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement : 3 coarse sand), including making joints with or without grooves (thickness of joints, except at sharp curve, shall not be more than 5 mm), including making drainage opening wherever required etc. complete as per direction of Engineer-in-charge. (Length of finished kerb edging shall be measured for payment). (Old kerb stones shall be supplied by the department free of cost)	900.00	metre	109.45	98505.00
26	Providing and laying factory made chamfered edge Cement Concrete paver blocks in footpath, parks, lawns, drive ways or light traffic parking etc, of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50 mm thick compacted bed of sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand. complete all as per direction of Engineer-in-Charge.				
26.1	60 mm thick cement concrete paver block of M-35 grade with approved colour, design & pattern	6375.00	sqm	1045.65	6666019.00
27	Providing and fixing in position pre-cast R.C.C. manhole cover and frame of required shape and approved quality H D - 20 Circular shape 560 mm internal diameter	257.00	Each	1675.70	430655.00
28	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910, on 12 mm dia steel bar conforming to IS: 1786, having minimum cross section as 23 mmx25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	1285.00	each	553.70	711505.00

				Total Rs.	**8,09,25,621.00**
				Cost Index -0.09% on DSR Items	-72,833.00
				Total Rs	**8,08,52,788.00**
	Deduct on account of GST as per correction factor @0.973 on DSR 2023 Items as per SE(TAS)CPWD O.M. No. 158/SE (TAS)/GST/2024/02-E dated 08/08/2024 (DSR Items Rs.75218379.75- x 0.973= 73187483.75/-) i.e..= (Rs.75218379.75-Rs.73187483.75=(-) Rs -2030896)				-2183025.00
				Total Rs	**7,86,69,763.00**
29	Providing & fixing pre-fabricated precast solid open U shaped RCC drain, drain cover, box culvert, crash barrier, retaining wall, silt chamber etc. using wet-cast technology with self-compacting concrete of grade M-50 and thermo-mechanically treated (TMT) steel bars of grade Fe-550D including straightening, cutting, bending, placing in position and binding, all complete upto plinth level with provisions of shear keys, connecting loops, necessary cutouts/holes lined with dowel tubes of required sizes for services i/c making necessary opening for manhole purpose of required size and shape and providing manhole cover with proper lifting arrangement of various thicknesses, shape and size using high quality steel moulds including loading, transportation from factory to site of work, unloading, stacking at site and placing in final position with the help of required capacity cranes all complete as per IS-11447:1985 and as per approved shop drawings and design mix complete as per the directions of Engineer-in-Charge. The RCC precast drain along with drain cover taken together as an integrated system, shall be capable of carrying a wheel load of 5 Ton of vehicular load. The precast elements shall be manufactured in a controlled factory environment with approved methodology/technology having all facilities including automated steam curing, automated reinforcement cage making facility, NABL accredited in-house laboratory with all testing facilities etc. complete as per the directions of Engineer-in-Charge.				

	The installation of RCC precast drain, drain cover, box culvert etc. shall be done in correct and final position with proper line, level and plumb at site after making all arrangements of requisite T&P e.g., cranes, push-pull jacks etc. for lifting, placing and alignment of elements within erection tolerance as per IS-15916:2020, as per approved shop drawings, complete as per direction of Engineer-in-Charge including cost of all material and all tools & machinery required for casting for all works up to plinth level complete as per the directions of Engineer-in-Charge.Note:- i). Minimum cement content considered in this item is 425 kg/cum. Nothing extra shall be paid on account of design mix specifying cement content more than 425 kg/cum. The design mix specifying cement content less than 425 kg/cum shall not be acceptable.ii). Minimum steel reinforcement considered in this item is 100 kg/cum and Nothing extra shall be paid on account of using extra steel reinforcement more than 100 kg/cum. The structural design specifying steel reinforcement less than 100 kg/cum shall not be acceptable.	5223.00	Cum	43765.10	228585117.00
30	Providing and placing in position factory made machine batched & machine mixed Precast RCC Rectangular Covers of required thickness on drains of footpath of various sizes, of M-30 grade cement concrete for RCC work, including cost of centering, shuttering, reinforcement of 8 mm dia TMT bars of Fe 500 grade @ maximum 100mm c/c on both ways double mesh (Top and Bottom) , neat cement punning on finished surface , providing 2 Nos. 12 mm dia bar for hooks etc i/c cost of cartage, all leads & lift, handling at site etc. all complete as per direction of Engineer-in-Charge.	77.00	cum	25340.50	1951219.00
31	Providing and laying PVC pipe of dia 250mm with pressure capacity of 6 kg/sqm conforming to IS:13592of approved brand for Bell mouth and as per direction of Engineer-in-Charge	463.00	mtr	1521.55	704478.00
32	Providing and laying 40mm Thick fine dressed stone under RCC slab as per the direction of Engineer-in-charge.	91.00	sqm	511.00	46501.00

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

33	Diverting drain water/effluent from existing drain by excavating trench/providing RCC pipes of required size/by pumping arrangements for the purpose of construction of new drain at the alignment of existing drain and refilling the trenches, if excavated, with available excavated materials, without clot, by mechanical/manual means in layers not exceeding 20 cm in depth, proper watering and leveling with proper compaction etc. all complete and as per direction of Engineer-in-Charge. The excavated material received from trenches for diversion drain shall be dumped on nearby available space and same will be used for refilling after fulfilling requirement of diversion. (Nothing extra will be paid on any account including size and capacity of diversion drain/lead and lift for excavation/excavated material, size of temporary drainage pipes, capacity of pumps deployed or for any other reason whatsoever). For the purpose of measurement, length of existing drain whose water is to be diverted will be measured. For existing drain width	5144.00	Mtr.	338.15	1739444.00
34	Providing and laying cement concrete (M-30 grade) tactile tile such as directional, warning or hazardous (for vision impaired persons as per standards) of size 300x300x60 mm {60mm base +(5mm ± 0.5mm) thick raised portion) of approved make in all colours (preferably yellow) and shades for footpath laid in required colour & pattern over 50mm thick compacted bed of coarse sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with Jamuna sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand in footpath, parks , lawns, drive ways or light traffic parking etc. complete as per manufacturer's specifications & direction of engineer-in-charge (the thickness of wearing layer should not be less than 8mm) and as per harmonized guidelines and space standards for barrier free built environment for persons with disability and elderly person.				
34.1	60mm thick Tactile paver block of M-30 grade with approved colour, design & pattern.	1500.00	sqm	945.83	1418745.00
35	Reimbursement of processing fees at actual rates to the agency only after disposal of the malba/rubbish to the approved MCD dumping ground generated from site as per direction of Engineer-in-Charge	6252.00	MT	324.50	2028774.00

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)

36	Towards cost adjustment and credit to work for the dismantled material received from the respective items of work, such as steel, steel Reinforcement etc. & as per direction of Engineer-in-Charge (Dismantled materials shall be property of the agency, which shall be cleared from the site of work for which no extra payment shall be made to the agency).	17150.00	kg	-30.00	-514500.00
37	Towards cost adjustment and credit to work for the dismantled material received from the respective demolishing brick work items of works as per direction of Engineer-in-Charge (Dismantled materials shall be property of the agency, which shall be cleared from the site of work for which no extra payment shall be made to the agency).	892188.00	Nos.	-2.00	-1784376.00
38	Credit for taking away surplus excavated local earth available at site, including making arrangement for loading unloading and transportation for all leads and lift complete as per direction of Engineer-in-Charge. Note:- Available surplus excavated earth shall be removed immediately within two days from the site visit any delay in removal may lead to penalty @Rs. 50/-cum per day from date after the days from this occurrence.	15823.00	cum	-83.10	-1314891.00
				Total Rs	**31,15,30,274.00**

Note : All arrangement for traffic diversion from site has to be made by the contractor at his own cost for which nothing shall be payable to the agency. Agency has to quote his rates accordingly.

Assistant Engineer
South West Road Sub-Division-25, PWD

Executive Engineer
South West Road Division-2, PWD

CORRECION-------NIL-------
DELETION------- --NIL-------
INSERTION---------NIL-------

AE/SWR-25 EE/SWR-2 AE (P) EE (P)