



भारत सरकार
केन्द्रीय लोक निर्माण विभाग
कार्यपालक अभियंता का कार्यालय
नेहरू नगर, तिरुपती- 517507

NIT

11/EE/Tirupati/e-Tender/2026-27

Name of Work: Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P

NIT Amount: Rs.92,43,257/-

NIT - INDEX

Name of Work: Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P

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Certified that this N.I.T contains 1 to 174 pages only

Notice Inviting Tender is approved for Rs.92,43,257/- (Rupees ninety two lakhs forty three thousand two hundred and fifty seven only)

**Executive Engineer
Central PWD, Tirupati**

PART - A

INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING
FORMING PART OF BID DOCUMENT AND TO BE POSTED ON WEBSITE
(Applicable for inviting open bids)

The **Executive Engineer, CPWD, Tirupati** on behalf of President of India invites online percentage rate bids from approved and eligible contractors of CPWD (**Buildings & Roads Category**) for the following work: -

Sl. No.	Description	Details
1	NIT No.	11/EE/Tirupati/e-Tender/2026-27
2	Name of Work	Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P.
3	Estimated Cost Put to Tender	Rs.92,43,257/-
4	Earnest Money (EMD)	Rs.1,84,865/-
5	Period of Completion	150 days
6	Last time & date of online submission of bid, original EMD, copy of receipt for deposition of original EMD , and other documents as specified in the press notice.	Up to 15:00 Hours on 13.07.2026
7	Time & date of online opening of documents. (Mandatory documents)	At 15:30 Hours on 13.07.2026
8	Time & date of online opening of financial bids.	At 16:00 Noon on 13.07.2026
9	Last date & time of submission of hard copies of Experience Certificates if any, Registration Certificates, Affidavit if any, Undertaking and other Documents as specified in the press notice to Division Office by the Lowest Tenderer Only .	To be submitted during office hours within a week from the date of opening of Financial Bid. In case the last day happens to be closed holiday, these documents shall be submitted on the next working day.

1. The intending bidder must read the terms and conditions of CPWD-6 carefully. **He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.**
2. Information and Instructions for bidders posted on website shall form part of bid document.
3. The contractor can deposit original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. The contractor shall obtain the receipt of EMD from the concerned Executive Engineer (including NIT issuing EE) in the prescribed format uploaded by NIT issuing Executive Engineer. The bid document as uploaded can be viewed and downloaded free of cost by anyone including intending bidder. But the bid can only be submitted after uploading the mandatory scanned

- documents such as **Insurance Surety Bonds/ Account payee Demand Draft/ Fixed Deposit Receipt (FDR)/ Banker's cheque or Bank Guarantee (as prescribed) issued by a Commercial Bank towards EMD in favour of respective Executive Engineer, copy of receipt of original EMD and other documents specified in the press notice.**
4. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen in the office of **the Executive Engineer, CPWD, Tirupati** and also can be downloaded from website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost. Applicants are advised to keep visiting the above mentioned web-sites from time to time (till the deadline for bid submission) for any updates in respect of the tender documents, if any. Failure to do so shall not absolve the applicant of his liabilities to submit the applications complete in all respects including updates thereof, if any. An incomplete application may be liable for rejection.
 5. But the bid can only be submitted **after deposition of original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission and uploading the mandatory scanned documents** such as Insurance Surety Bonds, Account Payee Demand Draft or Banker's Cheque or Fixed Deposit Receipts or/ and Bank Guarantee (as prescribed) issued by a commercial bank towards **EMD in favour of Executive Engineer, Tirupati Central Division, CPWD, Tirupati**, receipt for deposition of original EMD to division office of any Executive Engineer (including NIT issuing EE/AE), CPWD and other documents as specified.
 6. 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. **The necessary training materials including the videos with step-to-step process available on download section of <https://etender.cpwd.gov.in>.**
 7. The intending bidder must have valid **class-III digital signature certificate with encryption key (Combo type) to perform any operations / transactions on the e-tendering portal / Website and the bidder should download and install the eMsigner on their system as per instructions available on download section of <https://etender.cpwd.gov.in>.**
 8. On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.
 9. Contractor can upload documents in the form of **JPG** format and **PDF** format.
 10. **a) The contractor must ensure to quote rate in the prescribed column(s) meant for quoting rate in figures appears in Yellow colour and the moment rate is entered, it turns sky blue.**
b) Tenderer shall quote the percentage rate above or below two places of decimals only.

- c) The tenderer shall quote only one overall percentage rate above or below on the designated place, which shall be applicable on both Civil and E&M components.**
11. 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" (ZERO). However, if a bidder quotes nil rate, the bid shall be treated as invalid and he will not be considered as lowest bidder
 - a) 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.**
 - b) It is mandatory to upload scanned copies of all the documents including GST registration. If documents are not uploaded, then bid will become invalid and shall summarily be rejected.**
 - c) Please read para - 9 of CPWD-6 for further details.**
 12. Tenders with any condition including that of conditional rebates shall be rejected forthwith.
 13. The Subject work is targeted for compliance with 3 Star GRIHA rating. In order to achieve these ratings, a high degree of responsibility and cooperation is necessary from the contractors. All materials and systems used in the project are intended to maximize energy efficiency for operation of Project throughout service life (substantial completion to ultimate disposition - reuse, recycling, or demolition) with an emphasis on top **quality Materials** and systems are to maximize environmentally benign construction techniques, including construction waste recycle, reusable delivery packaging, and reusability of selected materials. All vendors/contractors must adhere to best practices related to Green Buildings. Other than the general guidelines outlined here, all vendors/contractors will be furnished with a supplementary set of guidelines more specific to their nature of service/product. Nothing extra shall be paid for the same, unless specifically provided in any item.
 14. This work requires engaging more than 20 nos. of labours/workers and therefore all necessary licenses such as labour license, EPFO and ESI, BOCW welfare registration, etc., shall be taken by contractor within the time limits as prescribed under clause 1 of schedule 'F'
 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 criteria.
 16. Contractor shall not divert any advance payments or part thereof for any other purpose other than needed for completion of the contracted work. All advance payments received as per terms of the contract (i.e., mobilization, secured against materials brought at site, secured against plant & machinery and / or for work done during interim stages, etc.) are required to be re-invested in the contracted work to ensure advance availability resources in terms of materials, labour, plant & machinery needed for required pace of progress for timely completion of work.

17. The Existing enlisted contractor either himself or his authorized representative shall take compulsory ERP training through any of the CPWD Regional Training Institutes (RTIs) at Delhi, Mumbai, Chennai and Kolkata, National CPWD Academy (NCA) Ghaziabad, Training arranged by Graduates of ERP “Train the Trainers Programme” conducted by NCA, Ghaziabad or through any other special training arranged by ERP Unit of CPWD. Training will be valid only when participants are registered and a certificate is issued through LMS (Learning Management System) in ERP. The enlisted contractor will not be allowed to participate in the tendering process without uploading the certificate of the above training.
18. **Any dispute arising out of this tender including dispute related to encashment of any Bank Guarantee/ FDR etc., shall be subject to the jurisdiction of courts of Andhra Pradesh State only.**
19. **List of Mandatory Documents to be scanned and uploaded within the period of bid submission:**

1.	Insurance Surety Bonds/ Account payee Demand Draft/ Fixed Deposit Receipt (FDR)/ Banker’s cheque or Bank Guarantee (as prescribed) issued by a Commercial Bank against EMD, as specified in Para 7 of CPWD - 6 for e - Tendering.
2.	Enlistment order of the Contractor
3.	GST registration certificate of the State in which the works is to be taken up, if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with bid documents. "If work is awarded to me, I/we shall obtain GST registration certificate, as applicable, within one month from the date of receipt of award letter or before release of any Payment by CPWD, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CPWD or GST department in this regard".
4.	Receipt for deposition of original EMD issued from division office of any Executive Engineer (Including NIT issuing EE, CPWD) (Form-C).
5.	Certificate secured through LMS portal of ERP for attending “Train the Trainers Programme” conducted by NCA, Ghaziabad or through any other special training arranged by ERP Unit of CPWD.

**Executive Engineer
Central PWD, Tirupati.**

CPWD-6 for e-Tendering

Online percentage rate bids are invited on behalf of President of India from approved and **eligible contractors of CPWD (Buildings & Roads Category)** for the work of –

“Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P.”

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

- 1.1 The work is estimated to Cost **Rs.92,43,257/-**. This estimate, however, is given merely as a rough guide.
- 1.2 **The Minimum eligibility criteria for Specialized work wherever applicable for Civil Works.**

-NA-

2. Agreement shall be drawn with the successful bidder on prescribed Form No. **CPWD 7** (or other Standard Form as mentioned) which is available at Govt. of India Publication and also available on website www.cpwd.gov.in. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. **The time allowed for carrying out the work** will be **150 days** from the date of start as defined in **Schedule ‘F’** or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
 - i) The site for the work is available.
 - ii) The main Architectural and structural drawings shall be made available in a phased manner, as per details given in Schedule – ‘F’.
4. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen on website <https://etender.cpwd.gov.in> or www.cpwd.gov.in at free of cost.

The standard publications like General Conditions of Contract, Delhi schedule of rates 2023 (for Civil), Specifications for Civil Works, and Delhi analysis of rates 2023 (for Civil) with amendments / correction slips up to the last date of submission of tender can be seen free of cost from the website www.cpwd.gov.in. or www.eprocure.gov.in.

5. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
6. While submitting the revised bid, contractor can revise the **consolidated percentage rate** any number of times (he need not re-enter **percentage rate** of all the **schedules or sub heads**) but before last time and date of submission of bid as notified.

7. **Earnest Money of Rs.1,84,865/-** in the form of Insurance surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks (*drawn in favour of Executive Engineer, Tirupati Central Division, CPWD, Tirupati*) shall be scanned and uploaded to the e-Tendering website within the period of bid submission. **EMD shall be made /issued only from the account of the bidder/tenderer submitting the bid/tender. EMD/made/issued from the account other than of the bidder/tenderer submitting the bid, shall not be accepted.**

The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. The EMD receiving Executive Engineer (Including NIT issuing EE/AE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed as Form - C) uploaded by the tender inviting EE in the NIT.

This receipt shall also be uploaded to the e-tendering website by the intending bidder upto the specified bid submission date and time.

A part of earnest money is acceptable in the form of bank guarantee also. In such cases, 50% of earnest money or Rs. 20 lakhs, whichever is less, will have to be deposited in shape prescribed above, and balance can be accepted in form of Bank Guarantee issued by a Commercial Bank having **validity for 90 days or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.**

The bidder shall be fully responsible for applicability, validity and genuineness of such Bank guarantee.

The receipt of deposition of bank guarantee shall also be uploaded to the e-tendering website by the intending bidder upto the specified bid submission date and time.

But the bid can only be submitted after deposition of EMD in favour of Executive Engineer in the form prescribed in NIT and uploading the mandatory scanned documents such as receipt for deposition of EMD and other documents as specified.

The intending bidder has to fill all the details of **Banker's cheque of a Commercial Bank/ Account payee Demand Draft of a Commercial Bank/ Fixed Deposit Receipt (FDR) of a Commercial Bank/ Insurance Surety Bonds/ Bank Guarantee (for balance amount as prescribed) from a Commercial Bank against EMD** (bankers name, amount, number and date) against cost of EMD etc.

The amount of EMD can be paid by multiple **Banker's cheque of a Commercial Bank/ Account payee Demand Draft of a Commercial Bank/ Fixed Deposit Receipt (FDR) of a Commercial Bank/ Insurance Surety Bonds/ Bank Guarantee (for balance amount as prescribed) from a Commercial Bank against EMD**, if EMD is also acceptable in the form of Bank Guarantee.

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

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

The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after 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.

8. The bid submitted shall become invalid if:

- i) The bidder is found ineligible.
- ii) **The EMD made/issued from the account other than that of the bidder /tenderer submitting the bid.**
- iii) **The bidder does not deposit original EMD with division office of any Executive Engineer, CPWD.**
- iv) The bidder does not upload all the documents (including GST registration) as stipulated in the bid document *including the copy of receipt of deposition of original EMD.*
- v) If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted *physically by the lowest bidder* in the office of bid opening authority.
In case of any discrepancy is noticed between the documents as uploaded at the time of submission of the bid online and hard copies as submitted physically in the office of Executive Engineer, then the bid submitted shall become invalid and the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the tenderer shall not be allowed to participate in the retendering process of the work.
- vi) 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 entertained as lowest tenderer.

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

The contractor whose tender is accepted will also be required to furnish by way of Security deposit for the fulfilment of his contract, an amount equal to 2.5% of the tendered amount of the work. The security deposit will be collected by deductions from running bills as well as final bill of the contractor at the rates mentioned above. The Security amount will also be accepted in the shape of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any of the Commercial Banks will be accepted for this purpose provided confirmatory advice is enclosed.

The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. if applicable and also ensure the compliance of aforesaid provisions by the sub-contractors, if any engaged by the contractor for the said work and Programme Chart (Time and Progress) within 15 days of acceptance of the tender.

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

12. The competent authority on behalf of the President of India does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.
13. Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
14. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
15. The contractor shall not be permitted to bid for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any Gazetted officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
16. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.
17. The bid for the work shall remain open for acceptance for a period of **Thirty (30) days** from the date of opening of bid. Further,
 - i. If any tenderer withdraws his tender or makes any modifications in the terms and conditions of the tender which is not acceptable to the department within 7days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit **50%** of 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 modifications in the terms and 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. In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidder shall not be allowed to participate in the rebidding process of the same work.
18. This notice inviting Bid shall form a part of the contract document. The successful bidders/contractor, on acceptance of his bid by the Accepting Authority shall within 7 days from the stipulated date of start of the work, sign the contract consisting of: -
- i) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - ii) Standard C.P.W.D. Form 7 or other Standard C.P.W.D. Form as applicable.
- 20.1 The Engineer-in-Charge of the Civil competent will call bids for the work. The cost of the bid document will be fixed with respect to the estimated cost put to tender for the bid.
- 20.2 The bid document will include the following three components:
- Part A:** - CPWD-6, CPWD-7 including schedule A to F for the major component (Civil) of the work, Standard General Conditions of Contract for Construction works-2023 as amended/modified up to the last date of submission of tender.
- Part B:** Special conditions, Particular specifications, and list of preferred makes applicable to Civil works of the work.
- Part C:** - Schedule of quantities for the Civil component of the work.
- 20.3
- a) Tenderer shall quote the percentage rate above or below to two places of decimals only.
 - b) If a tenderer quotes nil rates against each item in percentage 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 entertained as lowest tenderer.

- 20.4 After acceptance of the bid by the competent authority, the EE in charge of the work shall issue a letter of award on behalf of the President of India. After the work is awarded, the main contractor will have to enter into an agreement with EE in charge of the work.
- 20.5 Security Deposit will be worked out for corresponding to the cost of the work done. The Earnest Money will be returned after receiving the performance guarantee.
- 20.6 Running payment for the civil component shall be made by EE in charge of the work to the main contractor.
- 20.7 The completion certificate of the work shall be recorded by the Engineer-in-charge of the work.
- 20.8 The final bill for the whole work shall be finalized and paid by the Engineer-in-charge of the work.
- 20.9 It will be obligatory on the part of the tenderer to sign the tender documents for all components before the first payment is released.
- 21.** The intending bidders are required to update their profile in CPWD e-tender portal and to upload their bids well in advance of lapse date of submission of tender. Any issue related to updating profile / uploading tender can be resolved through the concerned Executive Engineer / Assistant Engineer (Phone no. 0877-2260169, E-mail id: tdcpwdtpt@gmail.com) or ERP help line no. 18001803286 or email ID cpwd.support@techmahindra.com. The e-tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.
- 22.** The Subject work is targeted for compliance with 3 Star GRIHA rating. In order to achieve these ratings, a high degree of responsibility and cooperation is necessary from the contractors. All materials and systems used in the project are intended to maximize energy efficiency for operation of Project throughout service life. (Substantial completion to ultimate disposition – reuse, recycling, or demolition) with an emphasis on top quality Materials and systems are to maximize environmentally-benign construction techniques, including construction waste recycle, reusable delivery packaging, and reusability of selected materials. All vendors / contractors must adhere to best practices related to Green Buildings. Other than the general guidelines outlined here, all vendors/contractors will be furnished with a supplementary set of guidelines more specific to their nature of service/product. Nothing extra shall be paid for the same, unless specifically provided in any item.

Executive Engineer
CPWD, Tirupati.
(For& on behalf of President of India)

BRIEF PARTICULARS OF WORK

The scope of the work is for “Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P”. The following provisions have been made in this work.

Construction of compound wall for 292.0 m length with 2.1m ht and concertina coil.

- Foundation with 1:1:5:3 grade of reinforced cement concrete.
- Superstructure with 1:1:5:3 grade of reinforced cement concrete columns and 230 mm brick work with class 7.5 fly ash bricks.
- Main gate of 6mx2.4m made of mild steel sections with enamel paint.

(Form - C)**Receipt of deposition of original EMD****(Receipt No...../ date.....)**

1. **Name of work: Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P.**
2. **NIT No. : 11/EE/Tirupati/e-Tender/2026-27.**
3. **Estimated Cost : Rs.92,43,257/-**
4. **Amount of Earnest Money Deposit : Rs.1,84,865/-**
5. **Last date of submission of bid : 13.07.2026**

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

**Signature, Name and Designation of
EMD Receiving officer (EE/AAO)
Along with Office Stamp**

(# to be filled by EMD receiving EE or
NIT issuing EE, AS the case may be)

C.P.W.D - 7

GOVERNMENT OF INDIA

CENTRAL PUBLIC WORKS DEPARTMENT

STATE : Andhra Pradesh

ZONE: CE, Vijayawada

BRANCH : B& R

Division: EE, Tirupati

PERCENTAGE RATE TENDER & CONTRACT FOR WORKS

Name of Work: Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P.

- (i) To be uploaded on line by 15:00 hours on 13.07.2026 through website <https://etender.cpwd.gov.in> or www.cpwd.gov.in
- (ii) To be opened in presence of tenderers who may be present at 15:30 hours on 13.07.2026 in the office of O/o Executive Engineer, CPWD, Tirupati.

TENDER

I/ We have read and examined the notice inviting tender, schedule, A, B, &C, 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 conditions of contract and all other contents in the tender document for the work.

I/ We hereby tender for the execution of the work specified for the President of India within the time specified in Schedule 'F', viz., schedule of quantities and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of contract and with such materials as are provided for, by, and in respects in accordance with, such conditions so far as applicable.

I/ We agree to keep the tender open for Thirty (30) days from the date of opening of bid.

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 in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's 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, in office shall without prejudice to any other right or remedy, I / We shall be suspended for one year and shall not be eligible to bid for CPWD tenders from date of issue of suspension order. If I/We fail to commence work as specified, I/ We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 and 12.3 of the tender form.

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

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

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived 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 _____

Signatures of Contractor

Postal Address

Witness:

Address:

Occupation:

ACCEPTANCE

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

The letters referred to below shall form part of this contract Agreement: -

- (a)
- (b)
- (c)

For & on behalf of President of India

Signatures:

Dated: **

Designation: **

PROFORMA OF SCHEDULES A to F**SCHEDULE 'A'**Schedule of Quantities : **Pages from 170 to 173**Estimated Cost Put to Tender : **Rs.92,43,257/-****SCHEDULE 'D'**

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

- a. Special & Additional Conditions : Pages from 28 to 65
- b. Particular specifications : Pages from 75 to 113
- c. Guarantee Bonds : Pages from 121 to 122

SCHEDULE 'E'Reference to General Conditions of contract: **GCC 2023 for Construction Works** as amended/modified up to the last date of submission of tender.**Name of Work: Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P.**Estimated Cost Put to Tender : **Rs.92,43,257/-**(i) Earnest money : **Rs.1,84,865/-** (To be returned after receiving Performance Guarantee).

(ii) Performance Guarantee

- (a) 5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher).
- (b) Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance Guarantee, in addition to the requirement under (a) above, shall be increased by an amount equal to the difference between eighty percent (80%) of the ECPT and the tendered amount.

(iii) Security Deposits : **2.5% of tendered / accepted value.****SCHEDULE 'F'- General Rules & Directions:**Officer inviting tender: **Executive Engineer,
CPWD, Tirupati.**Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3 : **See below under
Clause 12.****Definitions**2(v) Engineer-in-Charge : **Executive Engineer,
CPWD, Tirupati or his successor
thereof.**2(viii) Accepting Authority : **Executive Engineer,
CPWD, Tirupati or his successor
thereof.**

- 2(x) Percentage on cost of materials and labour to cover all overheads and profits. : **15% (7.5% for Profits + 7.5% for overheads)**
- 2(xi) Standard schedule of Rates : **Delhi Schedule of Rates 2023 for Civil component.**
- 2(xii) Department : **Central Public Works Department.**
- 9(ii) Standard CPWD contract Form GCC 2023, CPWD-7 as modified & corrected up to : **GCC 2023 for Construction works & CPWD - 7 as amended/ modified up to the last date of submission of e-tender.**

Clause I

- (i) Time allowed for submission of performance Guarantee, Programme Chart (Time and Progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board or proof of applying thereof from the date of issue of letter of acceptance. : **7 days.**
- (ii) Maximum allowable extension with late fee at 0.1% per day of performance Guarantee amount beyond the period as provided in (i) above : **3 days.**

Clause 2

Authority for fixing compensation under clause-2. : **Chief Engineer, CPWD, Vijayawada or his 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 : **10 days**

MILE STONE(S) FOR CIVIL COMPONENT AS PER TABLE GIVEN BELOW

Sl. No.	Description of Milestone (Financial)	Time Allowed (from date of start)	Amount to be withheld in case of non-achievement of milestone
1	1/4 th of the Tendered Amount	40 days	1.25 % of the total tendered amount
2	1/2 nd of the Tendered Amount	75 days	1.25 % of the total tendered amount
3	3/4 th of the Tendered Amount	110 days	1.25 % of the total tendered amount
4	Completion in all respects to put the road work in use and handing over.	150 days	1.25 % of the total tendered amount

Time Period allowed for execution of Work: - 150 days

Authority to decide:		
i)	Extension of Time	: Executive Engineer, CPWD, Tirupati or his successor thereof with prior approval of the Chief Engineer, CPWD, Vijayawada.
ii)	Rescheduling of Mile stones	: Executive Engineer, CPWD, Tirupati or his successor thereof
iii)	Shifting the date of start in case of delay in handing over of site	: Chief Engineer, CPWD, Vijayawada or his successor thereof.

Schedule of handing over of site:

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	Full site is hindrance free	7 Days
Part B	Portions with encumbrances	NIL	Not Applicable
Part C	Portions dependent on work of other agencies	NIL	Not Applicable

Schedule of issue of Designs:

Part	Portion of Design	Description	Time Period for issue of design reckoned from date of receipt of tenders
Part A	Portion already in NIT	As per the brief particulars of work in PART - A.	
Part B-1	Portions of Architectural Designs to be issued	Architectural drawings	Architectural drawings/ details required if any will be issued in a phased manner as per the approved programme of the contractor and as per the progress of work.
Part B-2	Portions of Civil Designs to be issued	Structural drawings	Structural drawings/details required if any will be issued in a phased manner as per the approved programme of the contractor and as per the progress of work.

Clause 5.2

Documentation of Hindrances	1. The contractor has to first register himself through a registration form, available on CPWD website under 'Contractors Login' tab. After registration, User ID and password will be automatically generated and sent on his registered mobile and email ID. Using this User ID and Password he can access the module and view all the works which are being carried out by him in CPWD and he can register the hindrance against any particular work. After recording the hindrance by the contractor, it will be visible to all concerned officers (JE and above) of that work. An alert through text message and email will be sent to EE.
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	2. Executive Engineer will first assign the work to the JEs/AEs who will give their comments on the hindrance within 2 days. After that Executive Engineer of the work will have to take appropriate action on the hindrance within 2 days. The comments of JEs/AEs will not be visible to contractor, only the decision of the Executive Engineer on the hindrance will be visible to contractor under "Decision of the Engineer-in-charge."	
Clause 6: Computerized Measure 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.18.50 lakhs.
Clause 7A Whether clause 7A shall be applicable:	:	Yes.
Clause 7B Whether clause 7B shall be applicable:	:	Yes.
Clause 8A Authority to decide compensation on account if contractor fails to submit completion plans	:	Chief Engineer, CPWD, Vijayawada or his Successor thereof
Clause 10A List of testing equipment to be provided by the contractor at site lab.	:	Refer Page No.114 to 115
Clause 10 B(ii) Whether clause 10-B (ii) shall be applicable	:	Not Applicable
Clause 10C Component of Labour expressed as percent of value of work.	:	Not Applicable
Clause 10CA	:	Not Applicable
Clause 10CC	:	Not Applicable
Clause 11 Specifications to be followed for execution of work	:	CPWD Specifications 2019 Vol. - I & II with up-to-date correction slips.
Clause 12 Authority to decide deviation up to 1.5 times of tendered amount.	:	Chief Engineer, CPWD, Vijayawada. The Completion of Cost including extra items, deviations and admissible escalation shall, in no case, exceed 1.50 times the contract amount. Contractor has to devise a system to keep a watch on quantum of work taken up vis-à-vis balance items required to complete defined scope of work and will give the alerts to Engineer-In-Charge before taking up extra items, deviations so that completion cost including extra items,

		deviations and admissible escalation does not exceed 1.50 times the contract value. Work executed beyond above limit will neither be recorded nor be paid.
12.2 C Deviation Limit beyond which clauses 12.2 (c) shall apply for building work.	:	100% (Hundred percent)
(i) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)	:	100% (Hundred percent)
(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items	:	100% (Hundred percent)
Clause 16 Competent authority for deciding the reduced rates	:	Chief Engineer, CPWD, Vijayawada or his Successor thereof
Clause 18 List of mandatory machinery, tools & plants to be deployed by the contractor at site	:	T&P and machinery required as directed by the Engineer-in-charge.

Clause -19C: -	Authority to decide penalty for each default	:	Executive Engineer, CPWD, Tirupati
Clause -19D: -	Authority to decide penalty for each default	:	Executive Engineer, CPWD, Tirupati
Clause -19G: -	Authority to decide penalty for each default	:	Chief Engineer, CPWD, Vijayawada
Clause -19K: -	Authority to decide penalty for each default	: i.	Chief Engineer, CPWD, Vijayawada
		: ii.	Rs.1000/- per tradesman per day

Clause 25

i. Conciliator for settlement of Disputes	Additional Director General, Region Hyderabad, CPWD, Hyderabad or his successor thereof.
ii. Arbitrator Appointment Authority	Chief Engineer, CPWD, Vijayawada or his Successor thereof

Place of Conciliation: Hyderabad

Clause 32: Requirement of Technical Representative(s) and recovery rates

Sl. No	Requirement of Technical Staff		Minimum experience (Years)	Designation of technical staff	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 32
	Qualification	Number			
1	Graduate Engineer Or Diploma Engineer	1	2 years	Project Manager cum Planning / quality /site/ billing Engineer	Rs.25,000/- per month per person.

Assistant Engineers retired from Government services those are holding Diploma will be treated at par with Graduate Engineers.

Diploma holders with minimum 10-year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

Clause 38

- (i) (a) Schedule / statement for determining theoretical quantity of cement & bitumen on the basis of Delhi Schedule of Rates 2023 printed by C.P.W.D. with correction slips up to the last date of submission of bids.
- (ii) Variations permissible on theoretical quantities.
- (a) Cement for works with estimated cost : 2% plus/minus
put to tender more than 25 lakhs
- (b) Bitumen for all works : 2.5% plus only & nil on minus Side
- (c) Steel Reinforcement and structural steel sections for each diameter, Section and category : 2% plus/minus
- (d) All other materials : Nil

**Executive Engineer
Central PWD, Tirupati**

Annexure I

On Non - Judicial stamp paper of minimum Rs. 100/-

Form for Bank Guarantee for Earnest Money Deposit/Performance Guarantee / Security Deposit / Mobilization Advance / for release of amount withheld for Milestones

1. Whereas the Executive Engineer (Name of Division), CPWD on behalf of the President of India (hereinafter called "The Government") has invited bids under (NIT Number) dated for (Name of work)
- The Government has further agreed to accept irrevocable Bank Guarantee for Rs. (Rupees Only) valid upto (date) * As **Earnest Money Deposit** from (Name and Address of Contractor) (herein after called "the contractor") for compliance of his obligations in accordance with the terms and conditions of the said NIT.

** or **

- Whereas the Executive Engineer (Name of Division), CPWD on behalf of the President of India (hereinafter called "The Government") as entered into an agreement bearing number With (name and address of the contractor) (Hereinafter called "the Contractor") for execution of work (Name of work)
- The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date) As **Performance Guarantee / Security Deposit / Mobilization Advance** from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.
2. We, (Indicate the name of the bank) (hereinafter 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 amount 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 dispute 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 valid discharge of our liability for payment there under and the Contractor shall have no claim against us for making such payment.
5. We, (indicate the name of the Bank) , further agree that the Government shall have the fullest liberty without our consent and without affecting any manner our obligation here under to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Contractor or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
6. We, (Indicate the name of the Bank) , further agree that the Government at its option shall be entitled to enforce this Guarantee against the Bank as a principal debater at the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee the Government may have in relation to the Contractor's liabilities.
7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.

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

9. This Bank Guarantee shall be valid up to Unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. (Rupees only) and unless a claim in writing is lodged with us within the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Date

Witness:

- | | |
|--------------------|----------------------|
| 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 performance guarantee / security deposit / mobilization advance, as the case may be.

3. The Bank Guarantee shall be drawn on non-judicial stamp paper of minimum Rs.100.

PART - B

Name of Work: Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P

SPECIAL CONDITIONS

1.0 General

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

- (i) **Description of items as given in Schedule of Quantities.**
- (ii) **Particular Specifications, Special Conditions and Additional conditions, if any.**
- (iii) **Drawings.**
- (iv) **CPWD Specifications.**
- (v) **General conditions of contract for CPWD works.**
- (vi) **Indian Standard Specifications of B.I.S.**
- (vii) **Manufacturers' specifications & as decided by Engineer-in-charge.**
- (viii) **Sound Engineering practices.**

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

1.1.4 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 of the entire works.
- 1.2.2 The works to be undertaken by the contractor shall inter alia include the following:
- i. Preparation of detailed SHOP drawings and AS BUILT drawings wherever applicable.
 - ii. Obtaining of Statutory permissions wherever applicable and required.
 - iii. Pre-commissioning tests as per relevant standard specifications, code of practice, Acts and Rules wherever required.
 - iv. Warranty obligation for the equipment and/or fittings/fixtures supplied by the contractor.
- 1.2.3 Contractor shall provide all the shop drawings or layout drawings for all the coordinated services before starting any work or placing any order for any of the services etc. These shop drawings/layout drawings shall be got approved from Engineer-in-charge before implementation and this shall be binding on the contractor. The contractor shall submit material 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 equipments 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 2 years for Graduate Engineer or 5 years for Diploma Engineer having 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 for the site, available in the office of the Engineer-in-Charge and satisfy himself about complete characteristics of soil and other parameters at site. No claim whatsoever on account of any discrepancy between the sub-surface strata conditions that may be actually encountered at the time of execution of the work and those given in 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 Temporary barricading shall be provided at Site by the contractor at their own cost. The barricading physically define the boundaries of the plot for restricted entry to only those involved in the work and also to prevent any accident and also not causing any inconvenience to the traffic. The barricading panels shall be painted and "CPWD" mark should be made in suitable size, shapes and number as directed by Engineer-in-charge without any extra cost. It shall be dismantled and taken away by the contractor after completion of the work at his own cost with the permission of Engineer-in-charge.
- 1.7.2 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.
- 1.7.3 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.

- 1.7.4 The contractor, his authorized representative, workmen etc. shall strictly observe orders pertaining to fire precautions prevailing in the area.
- 1.7.5 The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants of the adjacent properties and to the public in general. The Contractor shall take all care, as not to damage any other adjacent property or other services running adjacent to the plot. If any damage is done, the same shall be made good by the Contractor at his own cost and to the entire satisfaction of the Engineer-in-Charge. The Contractor shall use such methodology and equipments for execution of the work, so as to cause minimum environmental pollution of any kind during construction, to have minimum construction time and minimum inconvenience to road users and to the occupants of the buildings on the adjacent plot and public in general, etc. He shall make good at his own cost and to the entire satisfaction of the Engineer in Charge any damage to roads, paths, cross drainage works or public or private property whatsoever caused, due to the execution of the work or by traffic brought thereon, by the Contractor. Further, the Contractor shall take all precautions to prevent any pollution of streams and waterways. All waste or superfluous materials shall be carted away by the Contractor, entirely to the satisfaction of the Engineer-in-Charge. Utmost care shall be taken to keep the noise level to the barest minimum so that no disturbance as far as possible is caused to the occupants / users of adjoining buildings. No claim what so ever on account of site constraints mentioned above or any other site constraints not specifically stated here, shall be entertained from the Contractor. Therefore, the Contractors are advised to visit site and get 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.
- 1.8.3 For construction works which are likely to generate malba / rubbish, contractor shall dispose of malba, rubbish & other unserviceable materials and wastes at his own cost to the notified/specified dumping ground and under no circumstances these shall be stacked / dumped even temporarily, outside the construction premises.

1.8.4 The contractor shall construct suitable godowns, yard at the site of work for storing all other materials so as to be safe against damage by sun, rain, damages, fire, theft etc. at his own cost and also employ necessary watch and ward establishment for the purpose at his cost.

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 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 as specified in NIT shall be established, made functional and maintained within 21 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 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.

(i) 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.

(ii) 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.

1.10.4 The Contractor shall carry out survey of the work area, at his own cost, setting out the layout of building in consultation with the Engineer-in-Charge & proceed further. Any discrepancy between the architectural drawings and actual layout at site shall be brought to the notice of the Engineer-in-charge. It shall be responsibility of the Contractor to ensure correct setting out of alignment. Total station survey instruments only shall be used for layout, fixing boundaries, and center lines, etc., along with the theodolites. Nothing extra shall be payable on this account.

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

1.11 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. 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. All expenses towards collection of samples, packing, transportation and 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, fire pumps, wet riser / firefighting equipment, fire sprinklers etc. 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 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 Architectural and structural Drawings:

1.12.1 Although concept architectural drawings are made available in the office of the Executive Engineer, CPWD, Tirupati. The main working & detailed architectural drawings and Structural drawings/details required if any will be issued in a phased manner as per the approved programme of the contractor and as per the progress of work.

1.12.2 The work shall be carried out in accordance with the Architectural drawings and Structural drawings. Before commencement of any item of work, the contractor shall correlate all the relevant architectural and structural drawings issued for the work, nomenclature of items, specifications, etc., and satisfy himself that the information available therefrom is complete and unambiguous. The figures & the written dimensions of the drawing shall supersede the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-Charge for immediate decision before execution of the work. The contractor alone shall be responsible for any loss or damage occurring by the commencement of work on the basis of any erroneous and/ or incomplete information and no claim, whatsoever shall be entertained on this account. The delay caused on account of non-timely action by the contractor in resolution of the differences whatsoever shall not be considered as valid ground for extension of time unless otherwise accepted by Engineer-In-Charge.

1.12.3 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.
- 1.13.3 Contractor shall make necessary arrangements required for staging/scaffolding for execution of OHT with independent staging of about 30m to 35m height including designing of staging where ever required and getting it proof checked by Govt. institute to ensure safety during construction. Nothing extra shall be payable for staging or its design / proof checking other than those provisions taken in B.O.Q.

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 -
- (i) Allow use of scaffolding already erected, toilets, sheds etc.
 - (ii) Properly co-ordinate their work with the work of other Contractors.
 - (iii) Provide control lines and benchmarks to his associate-Contractors and the other Contractors.
 - (iv) Provide electricity and water at mutually agreed rates.
 - (v) Provide hoist and crane facilities for lifting material at mutually agreed rates.
 - (vi) Co-ordinate with other Contractors for leaving inserts, making chases, alignment of services etc. at site.
 - (vii) Adjust work schedule and site activities in consultation with the Engineer-in-Charge and other Contractors to suit the overall schedule completion.

(viii) Resolve the disputes with other Contractor amicably and the Engineer-in-Charge shall not be **made intermediary or arbitrator. The department shall not be responsible for the disputes between the subject work contractor and associate contractor / other agencies working at site. No claim shall be allowed by the department.**

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

1.16.5 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, implementation of green building norms to achieve desired GRIHA (3 star) Rating etc. 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 For works below ground level the contractor shall keep that area free from water. If dewatering or bailing out of water is required the contractor shall do it and nothing extra shall be paid except otherwise provided in the items of schedule of quantities.
- 1.17.3 Any legal or financial implications resulting out of disposal of earth shall be sole responsibility of the contractor. Nothing extra over the schedule shall be paid on this account.
- 1.17.4 All labour, material, tools and plants and other inputs involved in the execution of the item.
- 1.17.5 Providing sunk flooring in bath-rooms, kitchen, etc.
- 1.17.6 Performance test of the entire installation(s) before the work is finally accepted.
- 1.17.7 Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the items.
- 1.17.8 The rates quoted by the tenderer, shall be inclusive of all taxes including GST and levies applicable in respect of this contract shall be payable by the contractor and Government will not entertain any claim whatsoever in respect of the same.
- 1.17.9 For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.
- 1.17.10 The Contractor shall keep himself fully informed of all acts and laws of the Central & State Governments, all orders, decrees of statutory bodies, tribunals having any jurisdiction or authority, which in any manner may affect those engaged or employed and anything related to carrying out the work. All the

rules & regulations and bye-laws laid down by Collector / MC etc. and any other statutory bodies shall be adhered to, by the contractor, during the execution of work. The Contractor shall also adhere to all traffic restrictions notified by the local authorities. It is clarified that the extra sewerage charges (one time charges for commencement of work) required to be paid to the Municipal Corporation / other statutory bodies shall be paid by the department and need not be considered by the contractor. The water charges (for municipal water connection as well as tanker water) shall be borne by the contractor. Also, if the contractor obtains water connection for the drinking purposes from the municipal authorities or any other statutory body, the consequent sewerage charges shall be borne by the contractor. All statutory taxes, levies, charges (including 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.

- 1.17.11 **Royalty** at the prevalent rates including contribution towards Mineral Exploration Research and Innovation Trust (MERIT) @ 2% on Seigniorage fee and District Mineral Foundation (DMF) @ 30% of Royalty / Seigniorage fee shall have to be paid by the contractor (Rates of Seigniorage fee enclosed in the document is for guidance only and no claims shall be entertained on account of this) 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.

Royalty at the prevalent rates including contribution towards Mineral Exploration Research and Innovation Trust (MERIT) @ 2% on Seigniorage fee and District Mineral Foundation (DMF) @ 30% of royalty / Seigniorage fee 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.

However, if the contractor fails to submit the proof of payment of royalty / seigniorage fee and other contributions to MERIT & DMF as stated above, the same will be recovered from the bills payable without any further notice.

- 1.17.12 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.

- 1.17.13 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.
- 1.17.14 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.
- 1.17.15 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. Further, no claims for hindrance shall be entertained on this account.
- 1.17.16 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.
- 1.17.17 In case the same item appears more than once in the schedule of work under the same sub head or among the different sub heads of works, the lowest rate quoted for that item shall be taken for other items also and tender will be evaluated accordingly.
- 1.17.18 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. The applicable and eligible amount of EPF& ESI shall be

reimbursed preferably within 7 days but not later than 30 days of submission of documentary proof of payment which are in order.

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 As Built & Service Drawings:

1.20.1 The contractor shall submit completion plan of services for **Internal and External Civil Services** within thirty days of the completion of the work, **provided that the service plans having been issued for execution by the Engineer-in-Charge, unless the contractor, by virtue of any other provision in the contract, is required to prepare such plans.**

1.21 Computerized MBs & SMBs:

1.21.1 The contractor shall make available four (04) sets of computerized Standard Measurement Books (SMBs) having measurement of all the permanent standing in a building.

1.21.2 The contractor will submit computerized bill with measurement sheet for the work carried out by him for making payment as per Clause - '6' of the CPWD General Conditions of Contract 2023 for Construction Works (with correction slips upto 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.

1.21.3 Electronic measurement book is introduced. The contractor shall comply with the same as per the direction of Engineer-in-charge.

1.22 Water Supply & Sanitary Installations & Testing:

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

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.

- 1.22.2 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 LABOUR AND SECURITY

- 3.1 In the event of the contractor(s) committing a default or breach of any of the provisions of the Central Public Works Department, Contractor's Labour Regulations and Model Rules for the protection of health and sanitary arrangements for the workers as amended from time to time or furnishing any information or submitting or filing any statement under the provisions of the above Regulations and' Rules which is materially incorrect, he/they shall, without prejudice to any other liability, pay to the Government a sum not exceeding Rs.500/- for every default, breach or furnishing, making, submitting, filing such materially incorrect statements and in the event of the contractor(s) defaulting continuously in this respect, the penalty may be enhanced to Rs.1000/- per day for each day of default subject to a maximum of 5 per cent of the estimated cost of the work put to tender. The decision of the Engineer-in-Charge shall be final and binding on the parties.

No payment shall be made for construction of labour housing.

- 3.2 The Contractor shall display all permissions, licenses, registration certificates, bar charts, other statements etc. under various labour laws and other regulations applicable to the works, at his site office.
- 3.3 No site is available for labour huts. The contractor shall have to have his own arrangements for hiring land for setting up labour huts. The contractor will be provided space for watchman huts, site office etc. to a very limited extent inside the campus but the space requirement and location, as assessed by Engineer-in-Charge shall be final and binding.
- 3.4 If as per the rules of the local authority, the huts for labour are not to be erected at the site of work by the contractors, the contractors are required to provide

such accommodation as is acceptable to local bodies and nothing extra shall be paid on this account.

- 3.5 Contractor has to follow the security requirement of the campus and obtain necessary entry passes for the labour and vehicles and follow security checks at entry / exit gates, restriction on movement of vehicle, restricted timings of working etc. The Department however shall assist the contractor in obtaining such passes for movement of vehicles and labour. No claim whatsoever shall be entertained on account of delay in entry of vehicles and labour including restrictions in working hours, if there is any.
- 3.6 The contractor shall employ only Indian Nationals after verifying their antecedents and loyalty. The contractor shall, on demand submit list of his agents, employees and work people concerned & shall satisfy as to the bonafides of such people.
- 3.7 The contractor & his work people shall observe all relevant rules regarding security promulgated in which work is to be carried out by the Controlling Administrative Authority of the campus/area (hereinafter referred to as "Administrator").
- 3.8 The contractor, his representative, workman shall be allowed to enter through specified gates & timing as laid down by the controlling authority. They shall be issued an identity card or an individual pass in accordance with the standing rules & regulations & they should possess the same while working. The contractor shall be responsible for the conduct & actions of his workmen, agents/ representatives.
- 3.9 Normally contractor shall be allowed to carry out work between 7 AM to 6 PM. However, he may also be allowed to carry out the work beyond 6 PM & upto 7 AM, if the site conditions / circumstances so demand with prior written permission from the "Administrator". However, if the work is carried out in more than one shift or at night, no claim on this account shall be entertained.
- 3.10 Normally contractor's material / vehicles etc. shall be allowed to move in / go-out between 7 AM to 7 PM only & no movement of material / vehicles out of the site of work shall be allowed during night hours unless specific permission is obtained from the "Administrator".
- 3.11 In case if a separate entry has been allowed, the contractor has to make all arrangement for making a separate entry gate and barricading of the working area to segregate/separate the same from other areas. All these have to be done by the contractor at his own cost including safeguarding any untoward incident in the restricted area due to separate entry gate and barricading arranged by the contractor. No extra amount on this account shall be payable by the department.
- 3.12 In the event of any restrictions being imposed by the Security agency, CPWD, Traffic or any other authority having jurisdiction in the area on the working or movement of labour /material, the contractor shall strictly follow such restrictions and nothing extra shall be payable to the contractor on such accounts. The loss of time on these accounts, if any, shall have to be made up

by augmenting additional resources whatever required. Nothing extra shall be payable on this account.

4.0 OFFICE INFRASTRUCTURE:

- 4.1 The Contractor shall construct / provide one site office at his own cost on the construction site consisting of One (1) room including one (1) attached toilet with total built up area not less than 30 Sqm for CPWD staff. The location and plan shall be got approved from Engineer-in-Charge. Specification for the site office shall be portable type and or any other specification as per approval of Engineer-in-charge.
- 4.2. The required nos. of light points (including plug points) with fittings, ceiling fan/ exhaust fans, Furniture etc., shall have to be provided as per requirement of Engineer in charge during the period of construction. Maintenance of the site office will be responsibility of the contractor
- 4.3 For Quality Control Measures, Preparation of Bills and Monitoring the Quality, the contractor shall provide one Computer having Intel core i7 processor, MS-Windows-11, A-4 LaserJet Printers, Scanners, UPS etc. with data entry operator in the site office of Engineer-in-Charge.
- 4.4 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 twelve members) of the departments per year shall be arranged by the contractor.

5.0 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.

6.0 PROGRESS CHART: -

- 6.1 The contractor shall submit a Time and Progress Chart for each mile stone. **The Engineer-in-charge may within 10 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, and further to ensure good progress

during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per mile stones given in Schedule 'F'.

- 6.2 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.
- 6.3 The approval by the Engineer-in-charge of such programme shall not relieve the contractor of any of the **obligations** under the contract.
- 6.4 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 Rs. 5000/- shall be made on per week or part basis in case of delay in submission of the monthly progress report.**
- 6.5 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.
 - c) Program for procurement of materials by the contractor.
 - d) Program for arranging and deployment of manpower both skilled and unskilled so as to achieve targeted progress.
 - e) 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.
 - f) Programme for achieving milestones.
- 6.6 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.

7.0 PROGRESS AND MONITORING OF WORK:

- 7.1 The progress report shall contain the following, apart from whatever else may be required as specified: -
- (i) Construction schedule of the various components of the work through a bar chart for the next three months (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 construction 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.

- (ii) Progress chart of the various components of the work that are planned and achieved, for the month as well as cumulative up to the month, with reason for deviations, if any in a tabular format.
- (iii) Plant and machinery statement, indicating those deployed in the work.
- (iv) Man-power statement, indicating individually the names of all the staff deployed on the work, along with their designations. Number of skilled workers and unskilled workers deployed on the work and their location of deployment.
- (v) Financial statement, indicating the broad details of all the running account payment received up to date, such as gross value of work done, advances taken, recoveries effected, amount withheld, net payments details of Cheque payment received, extra /substituted /deviations items if any, etc.

- 7.2 For completing the work in time, the Contractor might be required to work in two or more shifts (including night shifts). No claim whatsoever shall be entertained on this account, not with-standing the fact that the Contractor may have to pay extra amounts for any reason, to the labourers and other staff engaged directly or indirectly on the work according to the provisions of the labour and other statutory bodies regulations and the agreement entered upon by the Contractor with them.
- 7.3 The work should be planned in a systematic manner so that chase cuttings in the walls, ceilings and floors is minimized. Wherever absolutely essential, the chase shall be cut using chase cutting machines. Chases will not be allowed to be cut using hammer / chisel. The electrical boxes should be fixed in walls simultaneously while raising the brick work. The contractor shall ensure proper co-ordination of various disciplines viz. building works, sanitary & water supply & electrical installations etc.
- 7.4 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.
- 7.5 The Contractor shall do proper sequencing of the various activities by suitably staggering the activities within various pockets in the plot so as to achieve early completion. The agency may deploy adequate equipment, machinery and labour as required for the completion of the entire work within the stipulated period specified. Also, ancillary facilities shall be provided commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this account. Adequate number/sets of equipment in working condition, along with adequate stand-by arrangements, shall be deployed during entire construction period. It shall be ensured by the Contractor that all the equipment, Tools & Plants, machineries etc. provided by

him are maintained in proper working conditions at all times during the progress of the work and till the completion of the work. Further, all the constructional tools, plants, equipment and machineries provided by the Contractor, on site of work or his work shop for this work, shall be exclusively intended for use in the construction of this work and they shall not be shifted / removed from site without the permission of the Engineer-in-Charge.

- 7.6 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.

8.0 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 CPWD, client's representatives.

Agenda

- a) Progress Status/Statistics.
- b) Completion Outlook.
- c) Major holdups/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.

9.0 ENGAGING SPECIALISED AGENCIES FOR WORKS: -

- 9.1 The Contractor shall engage specialized agencies having adequate technical capability and experience of having executed at least one work of similar items for executing the following items of the work and/or any other items of work where specialized firm is required to be engaged as per contract conditions.
- 9.2 The Specialized agency for the work shall be got approved from the Engineer-in-Charge well before actual commencement of the item of work. The contractor shall submit the list of specialized agencies proposed to be engaged by him along with their technical capability and necessary performance certificates, within 30 days of the stipulated date of start to substantiate technical capability and experience of the agency for prior approval of the Engineer-in-Charge.
- 9.3 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.

10.0 DEFECT LIABILITY PERIOD (REFUND OF SECURITY DEPOSIT):

10.1 The defect liability / maintenance period shall be 12 months after the date of completion of work for this contract agreement. The Security Deposit shall be released after the defect liability period of 12 months after completion of work and for this, the contractor shall have to produce a certificate stating that no defects are pending for rectification from the Engineer-in-charge, but subject to other provisions specified elsewhere in the contract agreement.

11.0 SAFETY MEASURES

11.1 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:

- (i) Creating awareness.
- (ii) Education.
- (iii) Training.
- (iv) Implementation.
- (v) 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.

11.2 The contractor shall issue **Photo Identity Cards** with unique numbers containing salient information of workers for the labour & his staff.

11.3 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.

11.4 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. This

signage shall be dismantled & taken away by the Contractor after the completion of work, only after approval of the Engineer – in – Charge. Nothing extra shall be payable on this account.

11.5 Sign Boards

11.5.1 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.

11.5.2 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.

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

11.5.4 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.

12.0 SPECIAL CONDITION FOR HARDWARE AND SANITARY WARES:

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

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

- i) 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.
- ii) 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.

13.0. INSPECTION OF WORKS:

- 13.1 In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by the Chief Engineer, CPWD, Vijayawada and other senior officers of CPWD in addition of the Engineer-in-charge, his authorized representatives, Authorities and Team of Third-Party Quality Assurance 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.
- 13.2 The committee/consultant appointed by 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 CPWD engineering staff and compliance is to be reported to CPWD. The committee/consultant appointed by CPWD shall certify on completion of particular building that it has been constructed according to the approved drawings design and specifications.
- 13.3 Senior Officers of 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: -
- (i) 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.
 - (ii) Entrance and area surrounding to be kept cleaned.
 - (iii) Display layout plan key plan, building drawings including plans, elevations and sections.
 - (iv) Upto date displays of programme chart (Bar charts).
 - (v) Keep details of quantities executed, balance quantities, deviations, possible Extra item, substituted Item etc.
 - (vi) Keep plastic / cloth mounted one sets of building drawings.
 - (vii) Set of Helmets and safety shoes for safety.

14.0 INSURANCE POLICIES:

Before commencing the execution of work, the Contractor shall, without in any way limiting his obligations and liabilities, insure at his own cost and expense against any damage or loss or injury, which may be caused to any person or property, at site of work. The Contractor shall obtain and submit to the Engineer-in-Charge proper Contractor All Risk Insurance Policy for an amount equivalent to the contract amount for this work, with Engineer-in-Charge as the first beneficiary. The insurance shall be obtained in joint names of Engineer-in-

Charge and the Contractor (who shall be second beneficiary). Also, he shall indemnify the Department from any liability during the execution of the work. Further, he shall obtain and submit to the Engineer-in-Charge, **a third party insurance policy for maximum Rs.20 lakh for each accident or any other incident or act of God or health hazard or Biological attack, with the Engineer-in-Charge as the first beneficiary.** The insurance shall be obtained in joint names of Engineer-in-Charge and the Contractor (who shall be second beneficiary). The Contractor shall, from time to time, provide documentary evidence as regards payment of premium for all the Insurance Policies for keeping them valid till the completion of the work. The Contractor shall ensure that Insurance Policies are also taken for the workers of his Sub-Contractors / specialized agencies also. The contractor including subcontractors shall provide comprehensive group insurance cover for all the workers and their supervisory staff deployed at site. The details of insurance cover to be provided shall be submitted by the contractor / associate agencies within 20 days of date of start. In case of a default, appropriate policy shall be got done by the safety monitoring committee and double the fee of the policy shall be recovered from the next bill of the contractor. Without prejudice to any of its obligations and responsibilities specified above, the Contractor shall within 15 days from the date of letter of acceptance of the tender and thereafter at the end of each quarter submit a report to the Department giving details of the Insurance Policies along with Certificate of these insurance policies being valid, along with documentary evidences as required by the Engineer-in-Charge. No work shall be commenced by the Contractor unless he obtains the Insurance Policies as mentioned above. Also, no payment shall be made to the Contractor on expiry of insurance policies unless renewed by the Contractor. Nothing extra shall be payable on this account. No claim of hindrance (or any other claim) shall be entertained from the contractor on these accounts.

15.0. APPLICABLE PERMITS:

- 15.1 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.
- 15.2 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.

16.0 LOCAL BYE-LAWS:

- 16.1 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.
- 16.2 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.

- 16.3 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.

17.0 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.

18.0 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-by 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.
- a. 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.

- b. 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.
- c. 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. Further, no claims for hindrance shall be entertained on this account.
- d. The contractor will take reasonable precautions to prevent his workman and employees from removing and damaging any flora (plant/vegetation) from the project area.

19.0 ROAD

- a. **The contractor shall at his own expense and risk arrange land 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.** However, the departmental land, to the extent available may be allowed to be used for the purpose free of rent without accepting any responsibility for the delay, if any, on this account. The contractor shall have to abide by the regulations of the authorities concerned and the directions of the Officer - in-charge for the use of the land available at the site of 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 Officer - in - charge and no claim whatsoever, shall be entertained on this account.
 - b. 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.
 - c. **The site is a rough terrain and it has no roads. It is the contractor's responsibility to construct an all-weather road to enable him to access the site in all seasons for ensuring smooth progress of work to achieve completion of work within Contract period. No Claim for EOT will be entertained.**
- 20.0 **No surplus land is available with the department for allotting to Contractor to set up Labour Campus. The Contractor should make his own arrangement for hiring suitable piece of land for making Labour Campus as per CPWD Model Rules for protection of health and sanitary arrangements which is forming part of GCC-2023, CPWD Specifications and Special Conditions of NIT.**

21.0 **Sample Room and Sample Toilets:**

The Contractor is required to complete one sample room and one sample toilet with all finishes and services for the approval of Engineer-in-charge within 7 months from the date of start of work failing which a penalty of Rs. 5,000/- per day will be levied on the contractor which is non-refundable.

22.0 No land is available with the Department for setting up of Batch Mix Plant. The work should be executed with Ready Mix Concrete (RMC). All columns shall also be executed with RMC using Boomer Pump or crane supported bucket with lever operated door for pouring concrete. Double handling of RMC, i.e. pouring on a platform and lifting again with baskets to place in column boxes, is not permissible.

ADDITIONAL CONDITIONS (Civil Component)

1.1 QUALITY ASSURANCE/TESTING OF MATERIALS: -

1.1.1 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.

1.1.2 With each Running Bill, the details of test carried out shall be submitted by the contractor as per Performa given in the tender document.

1.1.3 Testing charges to be borne by Contractor.

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. **All expenditure to be incurred for testing of samples i.e. packing, sealing, transportation, loading, unloading etc., including testing charges shall be borne by the Contractor.**

1.1.4 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.

1.1.5 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.

1.1.6 Maintenance of Register of Tests: -

(i) All the registers of tests carried out a Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge.

(ii) 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.

- (iii) 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.
- (iv) 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.
- (v) Contractor shall be responsible for safe custody of all the test registers.

1.1.7 Extensive testing of the materials used for construction is a pre-requisite for attaining high quality of the work. This shall also require specialized tests, physical, chemical, ultrasonic, x-ray and various other types of tests which cannot possibly be carried out in a site laboratory. These tests also require specialized personnel who regularly deal in such testing. Therefore the need arises for carrying out the tests in outside laboratories. These laboratories may be in the Govt. sector, Semi Govt. or Private sector. All Govt. Institutes, Indian Institute of Technology, National Institute of Technology, Central and State funded laboratories stands approved. No approval is required for testing in these laboratories/institutes. However, the outside private laboratories shall be approved in the following manner: -

1. The Chief Engineer will approve the private lab irrespective of distance for tests accredited by NABL or any other similarly placed accrediting government body which operates in accordance with ISO/IEC 17011 and acridities labs as per ISO/IEC 17025.
2. A lab will have to submit details of space available, equipments, staff (Technical and Non-Technical), accreditation and approval from various department/institutes. Lab must be NABL approved.
3. Initial approval of lab should for one year and can be revalidated for further one year and so on.
4. Every lab will be audited for maintenance and calibration of equipment and employment of staff prior to approval/revalidation.

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

- 1.1.8 Ultrasonic pulse velocity test shall be conducted on at least 5% of the total number of RCC members in each category i.e., beam, column, slab and footing for ensuring quality of concrete as per directions of Engineer- in charge. The cost of the same shall be borne by the contractor.
- 1.1.9 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.

- 1.1.10. 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.
- 1.1.11 In addition to the supervision of work by CPWD engineers, the Architects deployed by the Client/CPWD, 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 an Institution of International standards and up keeping of quality assurance shall be of paramount importance, as such.
- 1.1.12 The Contractor shall submit, within 15 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.

1.2 FIELD LABORATORY

The contractor has to establish within 21 days from the award of work a field laboratory at site including all necessary equipments 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.

For performing the above tests, the **Field Testing Equipments and Instruments as indicated in the tender document** are to be arranged and maintained by the contractor at his own cost.

- 1.2.1 The contractor shall ensure quality construction in a planned and time bound manner. Any sub-standard material / work beyond set-out tolerance limit shall be summarily rejected by the Engineer-in-Charge & contractor shall be bound to replace / remove such sub-standard / defective work immediately.
- 1.2.2 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.
- 1.3 SAMPLE OF MATERIALS: -**
- 1.3.1 All materials and fittings brought by the contractor to the site for use shall conform to the samples approved by the Engineer-in-Charge which shall be preserved till the completion of the work. If a particular brand of material is specified in the item of work in Schedule of Quantity, the same shall be used after getting the same approved from Engineer-in-Charge. Wherever brand / quality of material is not specified in the item of work, the contractor shall submit the samples as per **List of Approved Makes 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.
- 1.3.2 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 contractor 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. Also, the material shall be procured only after written approval of the Engineer-in-Charge.
- 1.3.3 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.

- 1.3.4 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.

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.

- 1.3.5 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.

2.0 CEMENT & STEEL REINFORCEMENT

- 2.1 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.

2.2 CEMENT: -

- 2.2.1 The contractor shall procure 43 grade ordinary Portland Cement (OPC) conforming to IS: 269 / Portland Pozzolana Cement (PPC) conforming to IS: 1489 (Part-1) as required in the work as per specifications/particular specifications of buildings from reputed manufacturers of cement as mentioned in "List showing preferred brands / Manufacturers / Makes" or from any other reputed cement manufacture having a production capacity not less than 1 million Ton per annum as approved by **Chief Engineer, CPWD, Vijayawada**. The cement of approved make as aforesaid in 50 kg bags bearing manufacturer's name and ISI marking, along with manufacturers test certificate for each lot shall be procured by the contractor. Portland Pozzolana Cement is to be used for RCC works only subject to fulfillment of conditions of circular No. CDO/SE (RR)/Fly ash (MAN) 02 dated 09.04.09. However, if the contractor uses higher grade of cement or uses OPC only nothing extra shall be paid. The use of PPC shall be regulated as per the following conditions stipulated in the circular dated 09.04.2009: -

- a. IS:456-2000 Code of Practice for Plain and Reinforced Concrete (as amended upto date) shall be followed in regard to Concrete Mix Portion and its production as under:
 - i) The concrete mix design shall be done as "Design Mix Concrete" as prescribed in clause-9 of IS 456 mentioned above.

- ii Concrete shall be manufactured in accordance with clause 10 of above mentioned IS:456 covering quality assurance measures both technical and organizational, which shall also necessarily require a qualified Concrete Technologist to be available during manufacture of concrete for certification of quality of concrete.
- b. Minimum M-30 grade of concrete shall be used in all structural elements of RCC, both in load bearing and framed structure.
- c. The mechanical properties such as modulus of elasticity, tensile strength, creep and shrinkage of fly ash mixed concrete or concrete using fly ash blended cements (PPCs) are not likely to be significantly different and their values are to be taken same as those used for concrete made with OPC.
- d. To control higher rate of carbonation in early ages of concrete both in fly ash admixed as well as PPC based concrete, water/binder ratio shall be kept as low as possible, which shall be closely monitored during concrete manufacture.

If necessitated due to low water / binder ratio, required workability shall be achieved by use of Chloride free chemical admixtures conforming to IS : 9103. The compatibility of chemical admixtures and super plasticizers with each set of OPC, fly ash and / or PPC received from different sources shall be ensured by trials.

- e. In environment subjected to aggressive chloride or sulphate attack in particular, use of fly ash admixed or PPC based concrete is recommended. In case, where structural concrete is exposed to excessive magnesium sulphate, fly ash substitution/content shall be limited to 18% by weight. Special type of cement with low C₃A content may also be alternatively used. Durability criteria like minimum binder content and maximum water/binder ratio also need to be given due consideration in such environment.
- f. 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.
- g. Subject to General Guidelines detailed out as above, PPC manufactured conforming to IS:1489 (Part-I) shall be treated at par with OPC for manufacture of Design Mix Concrete for structural use in RCC.
- 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 insisted upon before allowing use of such cements in works.
- i. While using PPC for structural concrete work, no further admixing of fly ash shall be permitted.

- 2.2.2 Samples of cement arranged by the contractor shall be taken by the Engineer-in-Charge and got tested in accordance with provisions of relevant BIS Codes. The cement for such testing purpose shall be supplied by the contractor free of charge. In case test results indicate that the cement arranged by the contractor does not conform to the relevant BIS Codes, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge or his authorized representative to do so. The cost of tests shall be borne by the contractor.
- 2.2.3 Cement shall be brought at site in bulk supply of approximately 200 tones or as decided by the Engineer-in-Charge.
- 2.2.4 OPC & PPC bags shall be stored in separate godowns. Separate godowns for tested cement and fresh cement (under testing) to be constructed by the contractor at his own cost as per sketches given in C.P.W.D Specifications having weather-proof roofs and walls. The size of the cement godown is indicated in the sketches for guidance. The actual size of godown shall be as per site requirements and nothing extra shall be paid for the same. Each godown shall be provided with a single door with two locks. The keys of one lock shall remain with Engineer-in-Charge or his authorized representative of the work and that of other lock with the authorized agent of the contractor at the site of work so that the cement is issued from godown according to the daily requirement with the knowledge of both parties. The account of daily receipt and issue of cement shall be maintained in a register in the prescribed proforma and signed daily by the contractor or his authorized agent and Engineer-in-Charge or his authorized representative in token of its correctness. The day to day receipt and issue accounts of different grade/brand of cement shall be maintained separately in the standard proforma by the contractor or his authorized representative which shall be duly signed by the authorized representative of the Engineer-in-Charge before issue to the work on day to day basis.

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

The pages of the register should be machine numbered and each page initialed by the EE. The cement godown and the register are required to be checked by the AE/EE in-charge of the work as mentioned below: -

- a. At least weekly or fortnightly, respectively in case of works located at the headquarters of AE/EE and.
- b. Whenever they visit the site of work in case of works located outside the Sub- Divisional/Divisional Head Quarters.

c. In the case of large concentrated projects like major bridges etc., the EE should check the cement register at least fortnightly.

2.2.5 The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in Clause-38 of the contract and shall be governed by the conditions laid therein.

2.2.6 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorized variation, nothing extra shall be payable to the contractor on this account. In the event of it being discovered that after the completion of the work, the quantity of cement used is less than the quantity ascertained as herein before provided (allowing variation on the minus side as stipulated in Clause - 38), the cost of quantity of cement not so used shall be recovered from the contractor as specified in schedule. Decision of the Engineer-in-Charge in regard to theoretical quantity of cement which should have been actually used as per the schedule and recovered at the rate specified, shall be final and binding on the contractor.

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

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

2.2.8 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.

2.2.9 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.

2.2.10 In case cement has been stored for over six (06) months from the date of manufacture or for any reason the stored cement shown sign of deterioration and contamination it shall be tested prior to use in the work.

The sample shall be taken within three weeks of the delivery and all the tests shall be commenced within one week of sampling and not later than 03 months from the receipt of sample for testing.

After completion of previous test if cement is stored more than 03 months, it shall be retested before use.

2.2.11 **Compressive Strength of Cement**

The average compressive strength of at least three mortar cubes (area of face 50 cm²) composed of one part of cement, three parts of standard sand (conforming to IS 650:1996) by mass and P/4+3.0 percent (of combined mass of cement plus

sand) water, and prepared, stored and tested in the manner described in IS 4031 (Part 6): 1988, shall be as follows:

- a) 72±1 hour not less than 23 MPa
- b) 162±2 hour not less than 33 MPa
- c) 672±4 hour not less than 43 MPa

NOTE: - P is the percentage of water required to produce a paste of standard consistency (see as below)

Consistency of Standard Paste: -

The quantity of water required to produce a paste of standard consistency, to be used for the determination of the water content mortar for the compressive strength tests and for the determination of soundness and setting time, shall be obtained by the method described in IS 4031 (part 4) : 1988.

2.3 STEEL REINFORCEMENT: -

- 2.3.1 (a) The Contractor shall procure IS marked TMT bars of various grades from the approved steel manufacturers as per list of approved makes forming part of this document or their authorized dealers having valid BIS license for IS: 1786-2008 and further confirming to the OM No. DG/MAN/382, dated 06.02.2019.

The procured steel should have following qualities:

- i. Excellent ductility, bend ability and elongation of finished product due to possible refining technology.
- ii. Consumption of steel should be accurate as per design
- iii. Steel should have no brittleness problem in finished product.
- iv. Steel should carry the quality of corrosion and earthquake resistance.
- v. Quality steel with achievement of proper level of Sulphur and phosphorus as per IS: 1786-2008.

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

- 2.3.3 Samples shall also be taken and got tested by the Engineer-in-charge as per the provisions in this regard in relevant BIS codes. In case the test results indicate that the steel arranged by the contractor does not conform to the specifications, 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 on written orders from the Engineer-in-charge to do so. Else the department shall remove it and recover double the cost of removal from the contractor.

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

- 2.3.5 The steel reinforcement bars shall be stored by the contractor at site of work in such a way as to prevent their distortion and corrosion, and nothing extra shall

be paid on this account. Bars of different sizes and lengths shall be stored separately to facilitate easy counting and checking.

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

Size of bar	For consignment below 100tonnes	For consignment above 100tonnes
Under 10mm dia bars	One sample for each 25tonnes or par thereof.	One sample for each 40tonnes or part thereof.
10mm to 16mm dia bars	One sample for each 45tonnes or part thereof.	One sample for each 50tonnes or part thereof.
Over 16mm dia bars	One sample for each 50tonnes or part thereof.	One sample for each 75tonnes or part thereof.

- 2.3.7 The contractor shall supply free of charge the steel required for testing including its transportation to testing laboratories. The cost of tests shall be borne by the contractor.
- 2.3.8 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.
- 2.3.9 The steel brought to site and the steel remaining unused shall not be removed from site without the written permission of the Engineer-in-charge.
- 2.3.10 The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be incorporated in the work. All consignment received at the work site shall be inspected by the Site staff along with the relevant documents before acceptance. The contractor shall obtain Original Vouchers and Test Certificates and furnish the same to the Engineer-in-Charge in respect of all the lots of steel brought by him from approved supplier to the site of work. The original vouchers and test certificates shall be defaced by the Site staff and kept on record in the site office.
- 2.3.11 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 centimeter. Wastage and unauthorized overlaps shall not be measured.
- 2.3.12 The standard sectional weights referred to as in Table 5.4 in para 5.3.4 in CPWD Specifications will be considered for conversion of length of various sizes of M.S. Bars, Steel Bars and T.M.T. bars into Standard Weight.

- 2.3.13 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.
- 2.3.14 (a) 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

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

* For individual sample plus tolerance is not specified.

**For coils batch tolerance is not specified.

- c) 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.

2.4 SAFETY IN CONSTRUCTION

- 2.4.1 The contractor shall employ only such methods of construction, tools and plants as are appropriate.
- 2.4.2 The contractor shall take all precautions and measures to ensure safety of works and work man and shall be fully responsible for the same.
- 2.4.3 Safety pertaining to construction such as centering & shuttering, scaffolds, ladders, working platforms, gangway etc. shall be governed by CPWD safety code, relevant safety codes and the directions of Engineer in charge.
- 2.4.4 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.

- 2.4.5 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.
- 2.4.6 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.
- 2.4.7 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.
- 2.4.8 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.
- 2.4.9 Inclined forms which give rise to very high horizontal forces should be taken care of by trussing and diagonal bracing
- 2.4.10 Vertical members should be placed centrally under the members to be supported and over the member supporting them with no eccentricity exceeding 25mm
- 2.4.11 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.
- 2.4.12 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.
- 2.4.13 During pouring of the concrete the centering shall be constantly inspected and strengthened, if required wedges below the vertical supports tightened and adjustment screws properly adjusted as necessary.
- 2.4.14 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.
- 2.4.15 The safety code as lay down in respective clauses of Agreement shall be strictly followed.

SPECIAL CONDITIONS FOR GREEN BUILDING

The building is proposed to be designed for **TERI (The Energy and Resources Institute) - GRIHA (Green Rating for Integrated Habitat Assessment)** Rating-3 green building rating system. The contractor is required to execute the work in a befitting manner to obtain the targeted **GRIHA 3 rating**.

Special conditions for GRIHA rating

The contractor shall prepare scheme for the approval of Engineer -in-charge for obtaining GRIHA 3 rating in the criteria relevant to the execution of work

The contractor shall plan and execute the work in a manner to preserve and protect the landscape during construction and shall arrange the materials/equipment and follow the procedure as per GRIHA 3 rating as applicable.

All the mandatory criteria of GRIHA and additional conditions for Green Building practices are to be necessarily followed.

The contractor shall comply with NBC norms on construction safety, health and sanitation as per GRIHA 3 rating system.

The construction activity shall be done in a befitting manner and the contractor shall adopt measures to prevent air pollution at site in compliance with criterion 9 of GRIHA rating as applicable.

The contractor shall comply with all the instructions and schemes for execution of Green building.

Nothing shall be paid extra for all these conditions except for the items existing in the schedule of quantities. For such items work done shall be paid on the basis of the agreement rates.

Pre-construction Stage

Construction Vehicles, Equipment and Machinery

- (i) All vehicles, equipment and machinery to be procured for construction shall conform to the relevant Bureau of India Standard (BIS) norms.
- (ii) Emission from the vehicles must conform to environmental norms.
- (iii) Dust produced from the vehicular movement and other site activities is to be mitigated by sprinkling of water.
- (iv) Noise limits for construction equipments shall not exceed 75 dB(A), measured at one meter from the edge of the equipment in free area, as specified in the Environment Protection Act,1986, schedule VI part E, as amended on 9th May,1993. The maximum noise levels near the construction site should be limited to 65 dB (A) Leq (5 min) in project area.

Construction Stage

Construction Wastes Disposal

- (i) The pre-identified dump locations will be a part of solid waste management plan to be prepared by the Contractor in consultation with Engineer -in-charge.
- (ii) Contractor shall get approved the location of disposal site prior to commencement of the excavation on any section of the project location.
- (iii) Contractor shall ensure that any spoils of material / construction waste will not be disposed off in any municipality solid waste collection bins.

Procurement of Construction Materials

- (i) All vehicles delivering construction materials to the site shall be covered to avoid spillage of materials and maintain cleanliness of the roads.
- (ii) Wheel Tyres of all vehicles used by of the contractor, or any of his sub-contractor or materials suppliers shall be cleaned and washed clear of all dust/mud before leaving the project premises. This shall be done by routing the vehicles through tyre washing tracks.
- (iii) Contractor shall arrange for regular water sprinkling at least twice a day (i.e. morning and evening) for dust suppression of the construction sites and unpaved roads used by his construction vehicles.

Water Pollution

- (i) The Contractor shall take all precautionary measures to prevent the wastewater during construction to accumulate anywhere.
- (ii) The wastewater arising from the project is to be disposed off in the manner that is acceptable to the **CPCB**.

Air and Noise Pollution

Contractor shall use dust screens and sprinkle water around the construction site to arrest spreading of dust in the air and surrounding areas.

- (i) Contractor shall ensure that all vehicles, equipment and machinery used for construction are regularly maintained and confirm that emission levels comply with environmental emission standards/norms.
- (ii) For controlling the noise from Vehicles, Plants and Equipments, the Contractor shall confirm the following:
 - (a) All vehicles and equipment used in construction will be fitted with exhaust silencers.
 - (b) Servicing of all construction vehicles and machinery will be done regularly and during routine servicing operations, the effectiveness of exhaust silencers will be checked and if found defective will be replaced.

- (c) Noise emission from compactors(rollers) front loaders, concrete mixers, cranes(movable), vibrators and saws should be less than 75 dB(A).
- (d) As per the standards/guidelines for control of Noise Pollution from Stationary Diesel Generator (DG) sets, noise emission in dB(A) from DG Sets (2-1010 KVA) should be less than $94+10 \log_{10}(\text{KVA})$. The standards also suggest construction of acoustic enclosure around the DG Set and provision of proper exhaust muffler with insertion loss of minimum 25 dB(A) each as mandatory.

Personal Safety Measures for Labour

Contractor shall provide the following items for safety of workers employed by contractor and associate agencies:

- (i) Protective footwear/ helmet and gloves to all workers employed for the work on mixing, cement, lime mortars, concrete etc. and openings in water pipeline/sewer line.
- (ii) Welder's protective eye-shields to workers who are engaged in welding works.
- (iii) Safety helmet and Safety harness/ belt Provide adequate sanitation/safety facilities for construction workers to ensure the health and safety of the workers during construction, with effective provisions for the basic facilities such as sanitation, drinking water and safety equipments or machinery.
- (iv) All the workers should be wearing helmet and shoes all the time on site.
- (v) Masks and gloves should be worn whenever and wherever required.
- (vi) Adequate drinking water facility should be provided at site, adequate number of decentralized latrines and urinals to be provided for construction workers.
- (vii) Full time workers (if any with the approval of Engineer-in-Charge) residing on site should be provided with clean and adequate temporary hutment.
- (viii) First aid facility should also be provided.
- (ix) Overhead lifting of heavy materials should be avoided. Barrow wheel and hand-lift boxes should be used to transport materials onsite.
- (x) Tobacco and cigarette smoking should be prohibited onsite.
- (xi) All dangerous parts of machinery are well guarded and all precautions for working on machinery are taken.
- (xii) Maintain hoists and lifts, lifting machines, chains, ropes and other lifting tackles in good condition. Provide safety net of adequate strength to arrest falling material down below.

- (xiii) Use of durable and reusable formwork systems to replace timber formwork and ensure that formwork where used is properly maintained.
- (xiv) Ensure that walking surfaces or boards at height are of sound construction and are provided with safety rails and belts. Provide protective equipments such as helmets.
- (xv) Provide measure to prevent fire. Fire extinguisher and buckets of sand to be provided in fire-prone area and elsewhere.
- (xvi) Provide sufficient and suitable light for working during night.
- (xvii) Ensure that measures to protect workers from materials of construction, transportation, storage and other dangers and health hazards are taken.
- (xviii) Ensure that the construction firm/division/company have sound safety policies.
- (xix) Comply with the safety procedure, norms and guidelines (as applicable) as outlined in **NBC 2016 (BIS 2005)**.
- (xx) Adopt additional best practices and prescribed norms as in **NBC 2016 (BIS2005)**.

Identify roads on-site that would be used for vehicular traffic. Update vehicular roads (if these are unpaved) by increasing the surface strength by improving particle size, shape and mineral type that make up the surface base. Add surface gravel to reduce source of dust emission. Limit amount of fine particles (smaller than 0.075mm) to 10 -20%. Limit vehicular speed on site 10km/h. Nothing extra will be payable for this.

All material storages should be adequately covered and contained so that they are not exposed to situations where winds on site could lead to dust/particulate emissions.

Spills of dirt or dusty materials shall be cleaned up promptly so the spilled material does not become a source of fugitive dust and also to prevent of seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean - up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained/cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.

Ensure that water spraying is carried out by wetting the surface by spraying water on:

- (i) Any dusty material.
- (ii) Areas where demolition work is carried out.
- (iii) Any unpaved main-haul road and.
- (iv) Areas where excavation or earth moving activities are to be carried out.

The contractor shall ensure the following:

- (i) Cover and enclose the site by providing dust screen, sheeting or netting to scaffold along the perimeter of a building.
- (ii) Covering stockpiles of dusty material with impervious sheeting.
- (iii) Covering dusty load on vehicles by impervious sheeting before they leave the site.
- (iv) Transferring, handling/storing dry loose materials like bulk cement and dry pulverized fly ash inside a totally enclosed system.
- (v) Spills of dirt or dusty materials shall be cleaned up promptly so that the spilled material does not become a source of fugitive dust and also to prevent seepage of pollutant laden water into the ground aquifers. When cleaning up the spill, ensure that the clean-up process does not generate additional dust. Similarly, spilled concrete slurries or liquid wastes should be contained / cleaned up immediately before they can infiltrate into the soil/ground or runoff in nearby areas.
- (vi) Clear vegetation only from areas where work will start right away.

Adopt measures to prevent air pollution in the vicinity of the site due to construction activities. There is no standard reference for this. The best practices should be followed (as adopted from international best practice documents and codes).

Provide safety barricading of site by drawing ribbon band along the site boundary, next to a road or other public area.

The contractor shall provide experienced personnel with suitable training to ensure that these methods are implemented. Prior to the commencement of any work, the method of working, plant equipment and air pollution control system to be used on -site should be made available for the inspection and approval of the Engineer -in-Charge to ensure that these are suitable for the project.

Employ measures to segregate the waste on-site into inert, chemical or hazardous wastes. Recycle the unused chemical/hazardous wastes such as oil, paint, batteries and asbestos. As per GRIHA 3 rating (inert and Hazardous waste must be collected and stored separately from site. Proper training must be given to all construction workers in order to train them to be able to handle different kind of waste on site. In addition to segregating the inert and hazardous waste, it is also important to either reuse the construction waste on site or safely dispose it off to designated agencies for recycling.

To preserve the existing landscape and protect it from degradation during the process of construction. Select proper timing for construction activity to minimize the disturbance such as soil pollution due to spilling of the construction material and its mixing with rainwater. The construction management plan including soil erosion control management plan shall be prepared accordingly for each month. The application of erosion control measures includes construction of gravel pits and tyre washing bays of approved size and specification for all vehicular site

entry/exits, protection of slopes greater than 10%. Sedimentation Collection System and run-off diversion systems shall be in place before the commencement of construction activity. Preserve and protect the existing vegetation by not-disturbing or damaging to specified site areas during construction.

The Contractor should follow the construction plan as proposed by the Engineer-in-charge / landscape consultant to minimize the site disturbance such as soil pollution due to spilling. Use staging and spill prevention and control plan to restrict the spilling of the contaminating material on site.

Spill prevention and control plans should clearly state measures to stop the source of the spill. Measures to contain the spill and measures to dispose the contaminated material and hazardous wastes. It should also state the designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners and petroleum products.

A **Soil Erosion and Sedimentation Control Plan (ESCP)** should be prepared prior to construction and should be applied effectively.

The contractor shall prepare and submit '**Spill prevention and control plans**' before the start of construction, clearly stating measures to stop the source of the spill, to contain the spill, to dispose the contaminated material and hazardous wastes, and stating designation of personnel trained to prevent and control spills. Hazardous wastes include pesticides, paints, cleaners, and petroleum products.

The contractor shall ensure that no construction leaches (Ex: cement slurry) is allowed to percolate into the ground. Adequate precautions are to be taken to safeguard against this including reduction of wasteful curing processes, collection, basic filtering and reuse. The contractor shall follow requisite measures for collecting drainage water run-off from construction areas and material storage sites and diverting water flow away from such polluted areas. Temporary drainage channels, perimeter dike/swale, etc. shall be constructed to carry the pollutant -laden water directly to the treatment device or facility (municipal sewer line).

All lighting installed by the contractor around the site and at the labour quarters during construction shall be energy efficient fixtures of the appropriate illumination levels.

All paints, adhesives and sealants should comply with the VOC limits prescribed as a green initiative as follows:

The VOC (volatile organic compound) content of adhesives and sealants used on the interior of the building must be less than VOC content limits mentioned below. A list of all the adhesives and sealants used for the project is to be submitted along with the manufacturer's certificate supporting the VOC content.

Architectural Applications	VOC Limit(g/l minus water)
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Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Wood Flooring Adhesives	100
Rubber Floor Adhesives	60
Sub floor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove base adhesives	50
Structural Glazing Adhesives	100
Multipurpose Construction Adhesives	70

Substrate Specific Application	VOC Limit(g/l minus water)
Metal to Metal	30
Porous Material(except wood)	50
Plastic Foams	50
Wood	30
Fibreglass	80

Specialty Application	VOC Limit(g/l minus water)
PVC Welding	510
CPVC Welding	490
ABS Welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Top and Trim Adhesive	250
Contact Adhesive	80
Special purpose Contact Adhesive	250
Structural wood member adhesive	140
Sheet applied rubber lining operations	850
Sealants	VOC Limit(g/l minus water)

Architectural	250
Non-Membrane Roof	300
Roadway	250
Single-ply roof membrane	450
Other	420
Sealant Primers	
Architectural, nonporous	250
Architectural, porous	775
Other	750
Aerosol Adhesives	
General purpose mist spray	65% VOC's by weight
General purpose web spray	55% VOC's by weight
Special purpose aerosol adhesives (all types)	70% VOC's by weight

All the building materials and systems used on site must be as per the specifications and approved makes by the Engineer-In-Charge.

All required certificates explaining the properties of the building material/system needs to be obtained from the manufacturer/vendor as required by the green building rating authority. The final certificates would be produced after the approval of green building consultant with necessary due diligence. The purchase orders of all the materials made with the manufacturers / authorized vendors should be maintained and shall be provided for the process with due diligence upon request.

Water saving measures as suggested by the consultants need to be followed on site.

The contractor / subcontractor shall prepare and submit a Site **Management Plan (SMP)** within 10 days of start, for approval by the Engineer -in-charge. This SMP shall indicate the locations of godown, stockpiles, barricading, waste storage, offices, vehicular movement routes etc. In short this SMP would comprehensively represent how the site activities shall be managed conforming to GRIHA 3 Star guidelines. Contractor will be penalized @ **Rs. 1000/-** per day of delay on non-submission of SMP beyond due date to be recovered from next RA bill.

Any other site management measures suggested by the Engineer-in-charge / green building consultant shall be followed on site.

The contractor shall submit to the Engineer -in-Charge after construction of the buildings, a detailed as built quantification of the following within 10 days of

recording of completion. Contractor will be penalized @ **Rs. 1000/-** per day of delay in submission of “detailed as built quantification”.

- (i) Total materials used
- (ii) Total waste generated,
- (iii) Total waste reused,
- (iv) Total water used,
- (v) Total electricity consumed, and
- (vi) Total diesel consumed.

Evidence for the implementation of the all the above required measures shall be provided to the Engineer-in-Charge in the form of photographs and templates as required which is required for the submission to the green building rating authority.

Nothing extra shall be payable for above provisions unless otherwise specified in Schedule of Quantity.

PARTICULAR SPECIFICATIONS**(Civil Component)****1. GENERAL**

- 1.1 The work shall be carried out as per CPWD Specifications 2019 Vol. I & II with upto date correction slips.
- 1.2 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).
- 1.3 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.
- 1.4 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.
- 1.5 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.
- 1.6 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.
- 1.7 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.
- 1.8 The following additional specifications shall apply:
 - 1.8.1 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, Govt. of A.P. and as per direction of the Engineer in charge
 - 1.8.2 Coarse sand should be obtained from sand quarries of nearby rivers, approved by the Department of Mines, Govt. of A.P. and as per direction of the Engineer in charge and 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.

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 confirms 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 such as AU/Visakhapatnam or JNTU Kakinada or NCCBM Hyderabad or any Government Engineering College /Institute, for which nothing extra shall be paid nor any extra time will be granted. 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.

- 1.9** 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.
- 1.10** 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.
- 1.11 Product delivery, storage and handling of chemicals.**
- 1.11.1** The contractor shall construct storage space for Chemicals to ensure that the storage conditions are as recommended by the manufactures.
- 1.11.2** All the materials shall be procured and delivered in sealed containers with labels legible and intact.
- 1.11.3** 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 liters/Kgs.} capacity packing only or as approved by the Engineer-in-Charge, and not in bigger capacity containers, say 200 liter (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.
- 1.11.4** 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.

- 1.11.5 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.
- 1.11.6 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.
- 1.11.7 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.
- 1.11.8 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.
- 1.11.9 All filled containers shall be handled in safe manner and in a way to avoid breaking container seals.
- 1.11.10 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.
- 1.11.11 All arrangements for measuring, dosing and mixing of material / chemicals at site have to be made by the contractor.
- 1.11.12 Contractor shall suitably advise his site Engineer and all the workers as regards safe handling of chemicals. Necessary protective and safety equipments in form of hand gloves, goggles etc. shall be provided by the contractor and be also used at site.
- 1.11.13 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.
- 1.11.14 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. However, all the testing charges shall be borne by the Contractor.

2 **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. Measurement of plan area of excavation for payment shall only be permitted.

- 2.3 All the major excavation shall be carried out by mechanical excavator. No extra payment shall be made for that.
- 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-by to attend to repair of pumps etc. and disruption of power / fuel supply. Nothing extra shall be payable on this account.
- 2.6 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 **R.C.C. WORK: -**

3.1 **Design Mix Concrete.**

- 3.1.1 The term machine batched, machine mixed and machine vibrated design mix cement concrete used in the document shall mean the concrete produced in fully automatic concrete batching & mixing plant, placed in position by the concrete pump and vibrated by surface vibrator/ needle vibrator/ plate vibrator, as the case may be to achieve the required strength and durability.

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

be actually weighed as presumption of each bag having 50kg shall not be allowed. The Contractor shall design mixes for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting the requirements specified. Nothing extra shall be paid on this account.

- (a) The contractor has to submit design mix without use of admixtures.
- (b) Admixture may be added in case of specific technical requirement so as to meet the workability / slump requirement or for any other reason but nothing extra is to be paid to contractor on account of adding admixtures. The admixture shall conform to IS: 9103. The chloride content in admixture shall satisfy the requirement of BS: 5075. The total amount of chlorides in admixture mixed concrete shall also satisfy the requirements of IS: 456:2000. Admixtures shall not be used without approval of Engineer-in-Charge. Whenever required, the admixture of approved quality & approved make only shall be used to attain the required workability. Nothing extra on account of use of Admixture / Plasticizer shall be payable.

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

3.2 GENERAL INFORMATION FOR READY MIX CONCRETE (RMC) TO BE GIVEN TO THE SUPPLIER BY THE CONTRACTOR

3.2.1 The contractor shall bring Ready Mix Concrete from approved RMC plants as mentioned in the list showing preferred Brands/ Manufacturers/Makes enclosed in this NIT. The contractor has to produce text of MOU proposed to be entered between purchaser (the contractor) and supplier (R.M.C. plant) to the Engineer-in-charge. The Engineer-in-charge shall give approval in writing. The contractor shall draw the MOU with approved RMC plant owner / company and submit to Engineer-in-charge within a week of such approval. The contractor will not be allowed to purchase ready mixed concrete without completion of above stated formalities for use in this project.

3.2.2 Notwithstanding the approval granted by Engineer-in-charge in aforesaid manner, the contractor shall be fully responsible for quality of concrete including input control, transportation and placement etc.

3.2.3 The Engineer-in-charge will reserve right to inspect at any such stage and reject the concrete if he is not satisfied about quality of product. The contractor should therefore draw MOU / agreement with RMC owner / company very carefully keeping all terms and conditions / specifications forming a part of this tender document.

- (i) The Engineer-in-charge reserves the right to exercise control over the ingredients, water and admixtures purchased, stored and to be used in the concrete including conducting of tests for checking quality of materials, recordings of test results and declaring the materials fit or unfit for use in production of mix.
- (ii) Calibration check of the RMC.
- (iii) Weight and quantity check on the ingredients, water and admixtures 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.
- 3.2.4 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.
- 3.2.5 Ingredients, admixtures & water declared unfit for use in production of mix shall not be used. A batch mix found unfit for use shall not be loaded into the truck for transportation.
- 3.2.6 All required relevant records of RMC shall be made available to the Engineer-in-charge or his authorized representative. The E-in-C shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of materials and production & transportation of concrete mix, which shall be binding on the contractor & the RMC plant.

3.3 Ingredients:

- 3.3.1 The sources of coarse aggregate, fine aggregate, water, admixture & cement to be used in concrete work shall be identified by the contractor & he will satisfy himself regarding their conforming to the relevant specifications & their availability before getting the same approved from the Engineer-In-Charge.
- (a) **Coarse Aggregate:** - As per CPWD Specifications
 - (b) **Fine Aggregate:** - As per CPWD Specifications
 - (c) **Water:** - It shall conform to requirements laid down in IS:456-2000 / Para 3.1.1 of CPWD Specifications (Vol. I 2019)
 - (d) **Cement:** - Portland Pozzolana Cement (Fly Ash based) conforming to IS: 1489/ OPC of grade 43 shall conform to IS: 269, required in the work from reputed manufacturers of cement as per the approved make in 50 kg. bags bearing manufacturer's name and ISI marking, along with manufacturers test certificate for each lot. Portland Pozzolana Cement is to be used for RCC works only subject to fulfillment of conditions of circular number CDO / SE (RR) / fly ash (MAN) 02 dated 09.04.09 shall be used for design mix concrete and shall conform to IS-1489 (Part I). However, if the contractor uses higher grade of cement nothing extra shall be paid.
 - (e) **Admixture/ Plasticizer:** - The admixture shall conform to IS: 9103. The chloride content in admixture shall satisfy the requirement of BS: 5075. The total amount of chlorides in admixture mixed concrete shall also satisfy the requirements of IS: 456:2000. Admixtures shall not be used without approval of Engineer-in-Charge. Whenever required, the admixture of approved quality & approved make only shall be used to attain the required workability. Nothing extra on account of use of Admixture / Plasticizer shall be payable.

3.4. WATER CEMENT RATIO AND SLUMP

- 3.4.1 In proportioning a particular mix, the manufacturer/producer/contractor shall give due consideration to the moisture content in the aggregates, and the mix

shall be so designed as to restrict the maximum free water cement ratio to less than the 0.45.

- 3.4.2 Due consideration shall be given to the workability of the concrete thus produced. Slump shall be controlled on the basis of placement in different situations.

<i>Placing Conditions</i>	Degree of Workability	Slump (mm)
(1)	(2)	(3)
Lightly reinforced sections in slabs, beams, walls, columns	Low	25-75
Heavily reinforced section in slabs, beams, walls, columns.	Medium	50-100
Pumped concrete	Medium	75-100

3.5 CHARACTERISTIC COMPRESSIVE STRENGTH COMPLIANCE REQUIREMENT

In the designation of concrete mix letter M refers to the mix and the number to the specified characteristic compressive strength of 15 cm - Cube at 28 days expressed in N/mm².

Specified Grade	Mean of the Group of 4 Non-overlapping consecutive test results in N/mm ²	Individual Test Results in N/mm ²
(1)	(2)	(3)
M25 Or Above	$\geq F_{ck} + 0.825 \times$ established standard deviation (rounded off to nearest 0.5 N/mm ²) Or $F_{ck} + 3$ N/mm ² , whichever is greater where f_{ck} is characteristic compressive strength of CC cube at 28 days.	$\geq F_{ck} - 3$ N/mm ²
<p>Note: (i) In the absence of established value of standard deviation, the values given in Table as mentioned below may be assumed, and attempt should be made to obtain results of 30 samples as early as possible to establish the value of standard deviation.</p> <p>(ii) The acceptance criteria for compressive strength as mentioned in IS:456- 2000 as amended upto date shall prevail over the above criteria in case of any difference.</p>		

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

The contractor shall submit at his own cost, the mix design report from approved laboratories such as AU/Visakhapatnam or JNTU Kakinada or NCCBM Hyderabad or any Government Engineering College /Institute 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. Every time sources of materials/cement is changed mix design report shall be got re- done and has to be got approved from Engineer In charge.

The various ingredients for mix design / laboratory tests shall be sent to the lab/ test houses through the Engineer-in-charge and the samples of such aggregates sent shall be preserved at site by the department. Nothing extra shall be paid on this account.

In the event if all the **above** laboratories are unable to carry out the requisite design/ testing, the contractor may have it done from any other NABL accredited laboratory with prior approval of the **Chief Engineer**.

- 3.7 The contractor shall submit the report on design mix from any of above approved laboratories for approval of Engineer in Charge within 30 days from the date of issue of letter of acceptance of the tender.** No concreting shall be done until the design mix is approved. In case of the likely use of admixtures in concrete, the contractor shall design and test the concrete mix by using trial mixes with admixtures also, for which nothing extra shall be payable.
- 3.8 In case of change of source or characteristic properties of the ingredients used in the concrete mix design during the work, the contractor as per the directions of the Engineer-in-charge shall submit a revised concrete mix design report conducted at laboratory established at site. Nothing extra shall be paid on this account.
- 3.9 All cost of mix designing and testing, connected therewith, including charges payable to the laboratory shall be borne by the Contractor including redesigning of the concrete mix whenever required & as directed by Engineer-In-Charge.
- 3.10 The mix design for a specified grade of concrete shall be done for a target mean compressive strength $T_{ck} = F_{ck} + 1.65s$

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

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

The degree of Quality Control for this work is “good” for which the standard deviation obtained for different grades of concrete shall be as follows: -

GRADE OF CONCRETE	STANDARD DEVIATION
M-25	4.0
M-30	5.0
M-35	5.0
M-40	5.0

However, actual standard deviation based on test strength of samples for each grade of concrete shall be calculated separately as per procedure laid down in clause 9.2.4 of Code of Practice IS 456:2000.

3.10.1 TRIAL BATCHES

- (a) The designed mix proportions shall be checked for target mean compressive strength by means of trial batches.
- (b) Minimum three sets of separate preliminary tests shall be carried out for each trial batch of concrete mix. Each test shall comprise of six specimens and only one test-set of six specimens shall be made on any particular day.
- (c) The quantities of materials for each trial mix shall be sufficient for at least six specimens (cubes) and the concrete required for carrying out workability tests.
- (d) The workability of trial mix No.1 shall be measured and mix shall be carefully observed for freedom from segregation, bleeding and its finishing characteristics. The water content, if required, shall be adjusted corresponding to the required changes in the workability.
- (e) With the modified Water Content, the mix proportions shall be recalculated by keeping with water cement ratio unchanged. The mix proportion, as modified, shall form the Trial Mix No.2 and tested for the specified strength and workability.
- (f) In addition, trial mix No.3 and 4 shall be designed by keeping water contents same as that determined for trial mix 2 but varying the water cement ratio by ± 10 percent of the specified value and tested for their design characteristics.
- (g) Out of the six specimens of each set, three shall be tested at seven days and remaining three at 28 days. The preliminary tests at seven days are intended only to indicate the strength to be attained at 28 days, while the design mix shall be approved only on the basis of test strength at 28 days.

3.10.2 APPROVAL OF DESIGN MIX

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

- (a) The average strength of each test-set is not less than the specified target mean compressive strength (T_{ck}).
- (b) The strength of any specimen cube is not less than $0.85 f_{ck}$.
- (c) The concrete mix is of required degree of workability and acceptable concrete finish.

3.11 DESIGN MIX CONCRETE FROM FULLY AUTOMATIC COMPUTERISED CONCRETE BATCHING AND MIXING PLANT

3.11.1 Proportioning Concrete

In proportioning cement concrete, the quantity of both cement and aggregates shall be determined by weight. The cement shall be weighed separately from the aggregates. Water shall either be measured by volume in calibrated tanks or weighed. All measuring equipment shall be maintained in a clean and serviceable condition. The amount of mixing water shall be adjusted to compensate for moisture content in both coarse and fine aggregates. The moisture content of aggregates shall be determined in accordance with IS: 2386 (Part III). Suitable adjustments shall also be made in the weights of aggregates to allow for the variation in weight of aggregates due to variation in moisture content.

3.11.2 Production of Concrete

3.11.2.1 The concrete shall be produced in a central batching and mixing plant with, computerized printing for contents and admixture dosage. The batching plant shall be fully automatic. 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 has been reached. The batching plant shall have automatic arrangement for dispensing the admixture and shall also be capable of discharging water in more than one stage. A print out from the batching plant for every lot shall be submitted. A batching plant essentially shall consist of the following components: Separate storage bins for different sizes of aggregates, silo for cement; and water storage tank.

- Batching equipment
- Mixers
- Control panels
- Mechanical material feeding and elevating arrangements

3.11.2.2 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 watertight and provided with necessary air vent, aeration fittings for proper flow of cement & emergency cement 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 drawdown. The batch bins shall in general conform to the requirements of IS: 4925.

3.11.2.3 WATER:

1. Water to be used in manufacturing and curing of Concrete shall be tested before use. All such tests shall be submitted to the Engineer in charge for his approval before water is used in work.
2. Contractor shall identify the location of source of water intended to be used. Each such source of water shall be separately tested. In the event of a

change in source of water all tests specified herein shall have to be repeated.

3. In the event of water is drawn from tube wells or open wells, water samples shall be for seasonal fluctuations in water table or at intervals to be directed by the Engineer in charge.

1. Water samples from each source shall be tested as under:

One test at commencement of work for approval of each source and there after change of source and

Thereafter, water from each source shall be got tested during the dry season before monsoon and again after the monsoon.

Time period between two tests shall not exceed six months.

2. Approved quality water shall be collected and stored in the Under Ground sumps/elevated tanks for the day to day requirement of work and same shall be used for all cement works and also for curing. Due care shall be taken in this regard.

3.11.2.4 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 the measuring devices shall fall within the following limits.

Measurement of Cement	±2% of the quantity of cement in each batch
Measurement of Water	±3% of the quantity of water in each batch
Measurement of Aggregate	±3% of the quantity of aggregate in each batch
Measurement of Admixture	±3% of the quantity of admixture in each batch

3.11.2.5 Mixing Concrete

3.11.2.5.1 The mixer in the batching plant shall be so arranged that mixing action in the mixers can be observed from the operator's station. The mixer shall be equipped with a mechanically or electrically operated timing, signaling 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.

3.11.2.6 Transportation, Placing and Compaction of Concrete

3.11.2.6.1 Mixed concrete from the batching plant shall be transported to the point of placement by transit mixers or through concrete pumps or steel closed bottom buckets capable of carrying 0.6 cum concrete. In case the concrete is proposed to be transported by transit mixer, the mixer 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 as 70 m / minute 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 revolutions 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 requirements shall conform to IS: 5892.

3.11.2.6.2 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.

3.11.2.6.3 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 shall be through pumping shall be verified by trial mixes and by performing pumping tests.

3.12 PREPARATION OF MIXES AS PER APPROVED DESIGN MIX AND CONDUCTING CONFIRMATORY TEST AT FIELD LAB.

3.12.1 The contractor shall make the cubes of trial mixes as per approved Mix design at site laboratory for all grades, in presence of Engineer in charge using sample of approved materials proposed to be used in the work prior to commencement of concreting and get them tested in his presence to his entire satisfaction for 7 days and 28 days. Test cubes shall be taken from trial mixes as follows.

3.12.2 For each mix, a set of six cubes shall be made from each of the three consecutive batches. Three cubes from each set of six shall be tested at age of 7 days and remaining three cubes at age of 28 days. The cubes shall be made, cured, transported and tested strictly in accordance with specifications. The average strength of nine cubes at age of 28 days shall exceed the specified target mean strength for which design mix has been approved, the evaluation of test results will be done as per IS: 456-2000.

3.12.3 Frequency of Sampling

3.12.3.1 Sampling Procedure engaged for

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 concreting and cover all mixing units.

3.12.3.2 Frequency

The minimum frequency of sampling of concrete of each grade shall be in accordance with the following:

<i>Quantity of Concrete in the Work, m³</i>	<i>Number of Samples</i>
I -10	1
11 - 30	2
31 -60	3
61- 100	4
101 and above	4 plus one additional sample for each additional 50 m ³ or part thereof

NOTE- Each sample shall be adequate quantity so that a minimum of 3 specimen cubes can be made. Test of the sample is to be done in accordance with IS: 516 (Minimum Quantity : 10 cum).

3.12.4 Test Specimen

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

3.12.5 Test Results of Sample

The test results of the sample shall be the average of the strength of three specimen. The individual variation shall not be 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 site by the contractor and remaining 10% in the laboratory as mentioned in para 3.6, or in any other NABL accredited laboratory as directed by the Chief Engineer, CPWD, Vijayawada.

3.12.6 ACCEPTANCE CRITERIA

3.12.6.1 Compressive Strength

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

- a) The mean strength determined from any group of four consecutive test results complies with the appropriate limits in col 2 of Table given under para 3.5 above.
- b) Any individual test result complies with the appropriate limits in col 3 of Table given under para 3.5 above.

3.12.6.2 Quantity of Concrete Represented by Strength Test Results

The quantity of concrete represented by a group of four consecutive test-results shall include the batches from which the first and last samples were taken together with all intervening batches.

Where the mean rate of sampling is not specified the maximum quantity of concrete that four consecutive test results represent shall be limited to 60 m³.

3.12.6.3 Concrete of each grade shall be assessed separately.

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

3.12.7 Ultrasonic Pulse Velocity Method of Test for RCC

3.12.7.1 The underlying principle of assessing the quality of concrete is that comparatively higher velocities are obtained when the quality of concrete in terms of density, homogeneity and uniformity is good. The consistency of the concrete as regards its general quality gets established. In case of poorer quality lower velocities are obtained. If there are cracks, voids or flaws inside the concrete which come in the way of transmission of pulse, lower velocities are obtained.

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

Velocity criterion for Concrete Quality Grading.

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

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

3.12.7.3 Pulse velocity method of test of concrete is to be conducted for CPWD works as a routine test. The acceptance criteria as per the above table will be applicable which is as per IS 13311 (part-1): 1992. From the above "Good" and "Excellent" grading are acceptable and below these grading the concrete will not be acceptable. **The cost of testing shall be borne by the contractor.**

3.12.7.4 5% of the total number of RCC members in each category i.e., beam, column, slab and footing may be tested by UPV test method for establishing quality of concrete. It is suggested that test be conducted on RCC beam near joint with column, on RCC column near joint with beam, on RCC footings and rafts. On RCC rafts a suitable grid can be worked out for determining number of tests. In addition, doubtful areas such as honeycombed locations, locations, where continuous seepage is observed, construction joints and visible loose pockets will also be tested.

3.12.7.5 The test results are to be examined in view of the above acceptance criteria “Good” and “Excellent” and wherever concrete is found with less than required quality as per acceptance criteria, repairs to concrete will be made. Honeycombed areas and loose pockets will be repaired by grouting using Portland Cement Mortar/Polymer Modified Cement Mortar /Epoxy Mortar etc. after chipping loose concrete in appropriate manner. In areas where concrete is found below acceptance criteria and defects are not apparently visible on surface, injecting approved grout in appropriate proportion using epoxy grout /acrylic Polymer modified cements slurry made with shrinkage compensating cement / plain cement slurry etc. will be resorted to for repairs.(refer relevant chapters from CPWD Hand Book on Repairs and Rehabilitation of RCC Buildings).Repair to concrete will be done till satisfactory results are obtained as per the acceptance criteria by retesting of the repaired area. If satisfactory results are not obtained dismantling and relaying of concrete will be done.

3.13 SPECIAL CONDITIONS FOR DESIGN MIX CONCRETE

- 1 The term machine batched, machine mixed and machine vibrated design mix cement concrete used in the document shall mean the concrete produced at site in fully automatic concrete batching & mixing plant (IS 4925), placed in position by the concrete pump and vibrated by surface vibrator/ needle vibrator/ plate vibrator, as the case may be to achieve required strength and durability. (However, for small elements like lintels, chajjas, shelves etc., the requirement of pumping would be dispensed with as per direction of Engineer - in - charge and placement would be done through alternative means).
2. Design mix concrete shall be used in the work for all structural members. For design mix concrete revised CPWD specifications 2019 along with relevant IS codes shall be followed in general along with the specific provisions made herein.

3. Following parameters shall be adopted for mix design.

3.1

Grade of Concrete	M25	M30	M40
(i) Nominal Max size of aggregate	20 mm angular as per CPWD specification	20mm angular as per CPWD specification	20 mm angular as per CPWD specification
ii) Degree of workability (Slump) mm a) Without Pump b) With Pump	25 to 75mm 75 to 100 mm	25mm to 75mm 75mm to 100 mm	25 to 75 mm 75 mm to 100 mm
(iii) Degree of quality control	Good.	Good.	Good.
(iv) Type of exposure	Severe	Severe	Severe
(v) Max free water cement/ ratio	0.45	0.45	0.40
(vi) Minimum Cement Content	330kg/cum and as specified in the item.	350 kg/cum and as specified in the item.	390 kg/cum and as specified in the item.
(vii) Fine Aggregate	Coarse sand as per CPWD specifications.	Coarse sand as per CPWD specifications.	Coarse sand as per CPWD specifications.
(viii) Mix applicable	Plain/Reinforced cement concrete	Plain/Reinforced cement concrete	Plain/Reinforced cement concrete
(ix) Method application	Pumping	Pumping	Pumping
(x) Max Cement content	500 kg/Cum	500 kg/Cum	500 /Cum
(xi) a) Characteristic compressive strength compliance requirement. (Mean of group of 4 non-overlapping tests and consecutive test) (N/Sqmm)	Greater than or equivalent to $f_{ck}+0.825 \times \text{Established standard deviation}$ Or $F_{ck}+3$ whichever is more	Greater than or equivalent to $f_{ck}+0.825 \times \text{Established standard deviation}$ Or $F_{ck}+3$ whichever is more	Greater than or equivalent to $f_{ck}+0.825 \times \text{Established standard deviation}$ Or $F_{ck}+3$ whichever is more
b) Individual test (N/Sqmm)	$F_{ck}-3$	$F_{ck}-3$	$F_{ck}-3$

Design parameters for M 10 & M15 Design mix concrete

Following parameters shall be adopted for mix design.

Sl. No.	Grade of Concrete	M10	M15
1	Nominal Max size of aggregate	20 mm angular as per CPWD specification	20 mm angular as per CPWD specification
2	Degree of workability (Slump) mm	25 - 75	25 - 75
3	Degree of quality control	Good.	Good.
4	Type of exposure	Severe	Severe.
5	Max free water cement/ ratio	0.50	0.50
6	Type of cement used	Portland Pozzolana cement or OPC- 43 grade	Portland Pozzolana cement or OPC- 43 grade
7	Minimum Cement Content	220Kg/cum and as specified in the item.	240Kg/cum and as specified in the item.
8	Fine Aggregate	Coarse sand as per CPWD specifications.	Coarse sand as per CPWD specifications.
9	Mix applicable	Plain/Reinforced cement concrete	Plain/Reinforced cement concrete
10	Method application	Pumping	Pumping
11	Max Cement content	500 kg/Cum	500 kg/Cum
12	(A) Characteristic compressive strength compliance requirement. (Mean of group of 4 non-overlapping tests and consecutive test) (N/Sq.mm)	Greater than or equivalent to $f_{ck}+0.825 \times \text{Established standard deviation}$ Or $F_{ck}+3$ whichever is more	Greater than or equivalent to $f_{ck}+0.825 \times \text{Established standard deviation}$ Or $F_{ck}+3$ whichever is more
	(B) Individual test (N/Sq.mm)	$F_{ck}-3$	$F_{ck}-3$

Sl. No.12 above is added for the purpose of operation of Clause 16 of IS 456 - 2000.

- (1) Approved admixtures conforming to IS-9103 shall be permitted to be used. The chloride content in the admixture shall satisfy the requirement of BIS 5075. The total amount of chloride content in the admixture mixed concrete shall satisfy the requirement of IS 456-2000.
- (2) The concrete mix design with and without admixture will be carried out by the contractor through the laboratory to be approved by the Engineer-in-Charge.
- (3) 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 ingredients sent shall be preserved at site till completion of work or change in Design Mix whichever is earlier. The sample shall be taken from the approved materials, which are proposed to be used in the work.

- (4) The contractor shall submit the mix design report from approved laboratories such as Andhra University Visakhapatnam or JNTU Kakinada or NCCBM Hyderabad or any Government Engineering College /Institute 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.
- (5) The contractor shall make cubes of trial mixes as per approved mix design at site laboratory for all grades of concrete in presence of the Engineer-in-charge using same ingredients as adopted for design mix, prior to commencement of concreting and get them tested in presence of Engineer-in - Charge for 7 days and 28 days. For each design mix, a set of six cubes shall be prepared from each of the three consecutive batches. Three cubes from each set shall be tested at the age of 7 days and three cubes at the age of 28 days. The cubes shall be made, cured, transported and tested strictly in accordance with CPWD specification. The average strength of nine cubes at the age of 28 days shall exceed the specified target mean strength for which design mix has been approved.
- (6) Tests shall be done at the laboratory as approved by the Engineer-in-charge.
- (7) For each change of source or quality / characteristic properties of the ingredients during the work, from that approved & used in the concrete mix a fresh mix design shall be got done by the contractor. Revised trial mix test shall be conducted and shall be submitted by the contractor as per the direction of the Engineer-in-charge.
- (8) The cost of packaging, scaling, transportation, loading, unloading cost of samples and the testing charges for mix design in all cases shall be borne by the contractor.
- (9) The mix design shall be done considering the degree of quality control as 'good' in all cases.
- (10) The Item of design mix cement concrete shall be inclusive of all the ingredients including admixtures it required labour, machinery, T&P 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 for the mix design items shall be net & nothing extra shall be payable on account of change in quantities of concrete ingredients like cement, sand, aggregates and admixtures etc. as per the approved mix design until unless specified elsewhere in the Notice Inviting Tender Documents.
- (11) No fly ash shall be allowed to be added in the Design Mix at site

3.14. COVER BLOCKS: Contractor shall use factory made cover blocks of approved shape and strength for all RCC works to avoid displacement of bars in any direction and to ensure proper cover. Alternatively, the contractor may manufacture the cover blocks as per approved methodology by Engineer-In-charge. The grade of concrete shall be same grade as of concrete in which they will be used. The concrete shall be fiber reinforced concrete with 6mm downgraded aggregate. Shape & size shall be as decided by Engineer-In-charge.

3.15. CURING:

- i) The contractor shall ensure moist curing to all structural members in general. Curing shall be done with 2 or 3 layers of wet hessian cloth covered by PVC sheets in order not to allow the moisture to evaporate.
- ii) Since the design mix is having controlled water content, the contractor shall protect the concrete from drying shrinkage by resorting to early age curing. Covering of wet hessian cloth shall be done after the onset of the final setting time.
- iii) The contractor shall submit methodology of proposed curing which ensures continuous maintenance of required temperature regime.
- iv) Membrane curing by chemical compounds may be allowed at places which are normally inaccessible and repair works and nothing extra is payable on this account. If curing compounds are proposed for any particular use, the contractor shall obtain permission for use of any particular brand of compounds from Engineer-In-Charge.

3.16 RATES: -

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

3.17. RCC WORK (ORDINARY)

- 3.17.1** The work shall be done in accordance with CPWD Specifications.
- 3.17.2** Water Cement ratio for Ordinary RCC work shall not be more than 0.5. Contractor shall use concrete mixture of proper design having arrangement for measuring water for mixing of concrete.

3.18 FORM WORK

- 3.18.1** The work shall be done in general as per CPWD Specifications.
- 3.18.2** 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**.
- 3.18.3** Nothing extra shall be paid for the centering and shuttering, circular in shape whenever the formwork is having a mean radius exceeding 6m in plan.
- 3.18.4** Nothing extra shall be paid for grid beams and the corresponding slabs having clear span more than 1.20 meters.
- 3.18.5** In order to keep the floor finish as per architectural drawings and to provide required thickness of the flooring as per specifications, the level of top surface of R.C.C. shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the Contractor except the places where different type of flooring is provided in the same room.

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

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

Dented, broken, cracked, twisted or rusted shuttering plates shall not be allowed to be used on the work.

The shuttering plates shall be cleaned properly with electrically driven sanders to remove any cement slurry or cement mortar or rust. Proper shuttering oil or de-bonding compound 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.

- 3.18.7** 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.
- 3.18.8** 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.

3.19. REINFORCEMENT: -

- 3.19.1.** The reinforcement shall be done as per CPWD Specifications.
- 3.19.2.** The rate of item of reinforcement of RCC work includes all operations including straightening, cutting, bending, welding, binding with annealed steel or welding and placing in position at all the floors with all leads and lift complete as per CPWD Specifications.
- 3.19.3** The contractor shall provide approved type of support for maintaining the bars in position and ensuring required spacing and correct cover of concrete to reinforcement as called for in the drawings, spacer blocks of required shape and size. Chairs and spacer bars shall be used in order to ensure accurate positioning of reinforcement. **Spacer blocks shall be 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 rate of RCC items is inclusive of cost of such cover blocks & Cover Guard Bars. Nothing extra shall be paid on this account.

4.0 MASONRY WORK: -

- 4.1.1** The PCC block work shall be carried out with good quality Fly ash cement blocks of class designation 7 (strength not less than 70kg/sq.cm) as per CPWD Specifications.
- 4.1.2** The rate shall also include for leaving chases / notches for dowels / cramps for all kinds of cladding to come over brick work.
- 4.1.3** Brick work provided around shaft or lift walls or around slab cutouts shall be measured in the brick for corresponding floor level. Nothing extra shall be paid on this account.
- 4.1.4** M.S. Strip/ Bar provided at every third course of half brick masonry shall be in single piece. If required, welding joint can be used without overlaps. Nothing extra shall be paid for welding and overlaps.

5.0 EXPANSION JOINT**5.1 General**

- 5.1.1** Seismic / separation/ expansion joints shall be provided where shown in the drawings and as per CPWD specifications and as directed by Engineer-in-Charge. They shall be constructed with in gap between the adjoining parts of the works of the width specified.
- 5.1.2** The contractor shall ensure that no debris is allowed to enter and be lodged in seismic/ separation/ expansion joints.

5.1.3 The expansion joint shall be cleaned and made dry completely. All loose materials shall also be removed. The joints gap shall be made uniform in width and depth after cleaning the joints. The backup materials of best quality shall be provided in position in order to produce thoroughly together in required proportion as prescribed by manufacture specification, so that a uniform mixture obtained. The mixed solution shall be applied to two sides of the joint that it covers the sides complete. Disturbed edges of RCC members near expansion joints shall be finished with rich mortar without any extra work includes providing required width of expansion board in the joints and measurement of expansion board only shall be taken.

6.0 GRANITE/ MARBLE OR LIKE WORKS

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

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

6.3 The granite/ marble or like stone slabs shall be cut to required sizes and shapes, as per the architectural drawings, to negotiate the curved steps in segmented manner. The risers shall also be cut to required sizes and shapes and the edges chamfered at the joints, all as per the architectural drawings. However, the Contractor shall prepare the detailed shop drawings for the same and commence work only after the approval by the Engineer-in-Charge. The rate shall also include any consequent wastage, incidental charges involved in this work. Nothing extra shall be payable on this account. For the purpose of payment, the actual area of each type of granite/ marble or like stone as laid shall be measured.

6.4 For the steps (risers and treads) in the linear profile, the granite/ marble or like stone shall be provided in single pieces as per the architectural drawings, unless otherwise specifically permitted by the Engineer-in-Charge. Wherever grooves

are required to be provided the same is to be done as per architectural drawings and as directed by the Engineer-in-charge. Wherever required, the joints shall be provided as per the architectural drawings. Nothing extra shall be payable on these accounts.

- 6.5** The granite/ marble or like stone slabs used for providing and fixing in the sills, soffits and jambs of doors, windows, ventilators and similar locations shall be in single piece unless otherwise directed by the Engineer-in-Charge. Wherever stone slab other than in single piece is allowed to be fixed, the joints shall be provided as per the architectural drawings and as per the directions of the Engineer-in-Charge. Depending on the number of joints, as far as possible, the stone slabs shall be procured and fixed in slabs of equal lengths as per the architectural drawings and as directed by Engineer-in-Charge.
- 6.6** While fixing the granite/ marble or like stone slabs in sills, soffits and jambs of doors, windows, ventilators etc., rebates shall be made by overlapping the stones at the required places for fixing shutters for doors, windows and ventilators etc. as shown in the architectural drawings and as per the directions of the Engineer-in-Charge. Epoxy based adhesives shall be used for fixing the granite/ marble or like stones to each other, or wherever required. The authorized overlap as per the architectural drawings or as directed by the Engineer-in-Charge shall be measured for payment under the same item. However, any extra mortar thickness required due to the overlap arrangement shall be deemed to have been included in the rate of this item. Nothing extra shall be payable on this account. The stone shall have uniform thickness and shall be provided in sizes as per the architectural drawings. The stone slab shall have uniformly leveled surface after fixing. All the joints shall be finished smoothly in a workmanlike manner.
- 6.7** The granite/ marble or like stone work shall be adequately protected by a layer of Plaster of Paris, which shall be maintained throughout and removed just before handing over of the works for which nothing extra shall be payable.

7.0 WOOD WORK

- 7.1** The wood work in general shall be carried out as per CPWD Specifications (Volume-I) 2019, with up-to-date correction slips
- 7.2** The sample of timber to be used shall be deposited by the contractor with Engineer-in-charge before commencement of work.
- 7.3** The shape and size of beading shall be as per drawings. The joints of beading shall be mitred.
- 7.4** Timber shall be of specified species, good quality and well-seasoned. It shall have uniform colour, reasonably straight grains and shall be free from knots, cracks, shakes and sapwood. It shall be close grained. The contractor shall deposit the samples of species of timber to be used with the Engineer-in-Charge for testing before commencement of the work.

- 7.5 Wood work shall not be painted, oiled or otherwise treated before it has been approved by the Engineer-in-charge. All portion of timber including architrave abutting against masonry, concrete, stone or embedded in ground shall be painted with approved wood preservative or with boiling coal tar.
- 7.6 The contractor(s) shall produce cash voucher and certificates from approved Kiln Seasoning Plants about the timber used on the work having been kiln seasoned and chemically treated by them, falling which it would not be accepted as kiln seasoned and/or chemically treated.
- 7.7 Transparent sheet glass conforming to IS: 2835 shall be used. Thickness being governed as under unless otherwise specified in the item in wood work/steel work:

Area of Glazing	Thickness
(a) For glazing area up to 0.50 sqm	4.0 mm
(b) For glazing area more than 0.50 sqm to 0.90 sqm	6.0 mm

- 7.8 Factory made wooden flush door and paneled and wire gauge shutters shall be manufactured and carried out as per CPWD specifications (Volume-I, 2019 with upto date correction slips).
- 7.9 The work shall be executed through specialized agencies to be approved by the Engineer -in- Charge.
- 7.10 The contractor shall propose well in advance to Engineer-in-Charge, the names and address of the factory where from the contractor intends to get the shutters manufactured along with the credential of the firm. The contractor shall place the order for manufacturing of shutters only after obtaining approval of the Engineer in Charge whose decision in this case shall be final & binding. In case the firm is not found suitable he shall propose another factory. The factory may also be inspected by a group of officers before granting approval; shutters shall however he accepted only if these meet the specified test.
- 7.11 Contractor will arrange stage wise inspection of the shutters at factory by the Engineer-in-Charge or his authorized representative. The contractor will have no claim if the shutters brought at site in part or full lot are rejected by the Engineer-in-Charge due to bad workmanship / quality. Such defective shutters will not be measured and paid. The contractor shall remove the same from the site of work within 7 days after the written instruction in this regard are issued by the Engineer-in-Charge.
- 7.12 The shutters should be brought at site without primer / painting.
- 7.13 (a) Inspection of shutters shall be carried out for dimensions & tolerances, size & type general construction & workmanship, finish & glazing at the following frequency: -

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

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

(c) Testing: - The shutters shall be tested for species seasoning & treatment, defects in the timber, panel material, construction & workmanship in the approved Laboratory at the frequency mentioned in CPWD specification.

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

(d) Finish

- i) All components of door shutter shall have smooth finish.
- ii) Panels of the door shutters shall be flat and well sanded to a smooth and level Surface.
- iii) All the surfaces of door shutters which are required to be painted or polished or varnished shall be got approved from the Engineer in Charge before applying protective coat of primer, polish or varnish.

8.0 Flush Doors

8.1 General

The door shall be of flush type solid core marine grade with single or double shutter as the case may be.

8.2 Shutters

Flush door shutters shall have a solid core and may be of the decorative or non-decorative (Paintable type as per IS 2202 (Part I). Nominal thickness of shutters may be 30mm as mentioned in the BOQ. Thickness and type of shutters shall be as specified.

Width and height of the shutters shall be as shown in the drawings or as indicated by the Engineer-in-Charge. All four edges of the shutters shall be square. The shutter shall be free from twist or warp in its plane. The moisture content in timbers used in the manufacture of flush door shutters shall be not more than 12 per cent when tested according to IS 1708.

8.3 Core

The core of the flush door shutters shall be a marine grade block board having wooden strips held in a frame constructed of stiles and rails. Each stile and rail shall be a single piece without any joint. The width of the stiles and rails including lipping, where provided shall not be less than 45mm and not more than 75mm. The width of each wooden strip shall not exceed 30mm. Stiles, rails and wooden strips forming the core of a shutter shall be of equal and uniform thickness. Wooden strips shall be parallel to the stiles.

8.4 End joints of the pieces of wooden strips of small lengths shall be staggered. In a shutter, stiles and rails shall be of one species of timber. Wooden strips shall also be of one species only but it may or may not be of the same species as that of the stiles and rails. Any species of timber may be used for core of flush door. However, any non-coniferous (Hard wood) timber shall be used for stiles, rails and lipping.

8.5 Face Panel

The face panel shall be formed by gluing, by the hot-press process on both faces of the core, either plywood or cross-bands and face veneers. The thickness of the cross bands as such or in the plywood shall be between 1.0mm and 3.0mm. The thickness of the face veneers as such or in the plywood shall be between 0.5mm and 1.5mm for commercial veneers and between 0.4mm and 1.0mm for decorative veneers, provided that the combined thickness of both is not less than 2.2mm. The direction of the veneers adjacent to the core shall be at right angles to the direction of the wooden strips. Finished faces shall be sanded to smooth even texture. Commercial face veneers shall conform to marine grade plywood and decorative face veneers shall conform to type I decorative plywood in IS 1328.

8.6 Lipping

Lipping, where specified, shall be provided internally on all edges of the shutters. Lipping shall be done with battens of first class hardwood or as specified of depth not less than 25mm. For double leaved shutters, depth of the lipping at meeting of stiles shall be not less than 35 mm. Joints shall not be permitted in the lipping.

8.7 Rebating

In the case of double leaves shutters the meeting of stiles shall be rebated by 8 mm to 10 mm. The rebating shall be either splayed or square type as shown in drawing where lipping is provided. The depth of lipping at the meeting of stiles shall not be less than 30 mm.

8.8 Opening for Glazing

When required by the purchaser opening for glazing shall be provided and unless otherwise specified the opening for glazing shall be as per drawings. The bottom of the opening shall be at a height as shown in the drawings. Opening for glazing shall be lipped internally with wooden batten of width not less than 25 mm.

8.9 Tolerance

Tolerance on width and height shall be + 3 mm and tolerance on nominal thickness shall be ± 1.2 mm. The thickness of the door shutter shall be uniform throughout with a permissible variation of not more than 0.8 mm when measured at any two points.

Adhesive: - Adhesive used for bonding various components of flush door shutters namely, core, core frame, lipping, cross-bands, face veneers, plywood etc. and for bonding plywood shall conform to BWP type, phenol formaldehyde synthetic resin adhesive conforming to IS 848.

8.10 Tests

As per CPWD Specifications.

8.11 Fixing

As per CPWD Specifications.

8.12 Measurements

As per CPWD Specifications.

9.0. STEEL WORK

9.1 All steel work shall be carried out as per CPWD Specifications. (Volume 1) 2019 with up-to-date correction slips.

9.2 All welded steel work shall be tested for quality of weld as laid down in IS 822: 1970 before actual execution.

10.0 FLOORING

10.1 All work in general shall be carried out as per CPWD Specifications (Volume 1) 2019 with up-to-date correction slips.

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

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

- 10.4 Samples of flooring stones/ Tile (Kota/ Marble/ Granite/ Ceramic tiles/ Vitrified tiles etc.) shall be deposited well in advance with the Engineer-in-Charge for approval. The sizes of stones for flooring shall be of a size not less than 600mmx600mm or as approved by Engineer-in-Charge. Approved samples should be kept at site with the Engineer-in-Charge and the same shall not be removed except with the written permission of Engineer-in-Charge. No payment whatsoever shall be made for these samples.
- 10.5 The Marble/ Kota/ Granite or any other stone shall be fully supported by the details establishing the quarry and its location or source.
- 10.6 Full width Marble/ Kota/ Granite stone over kitchen platform shall be provided except to adjust for closing pieces. The marble / stone flooring in treads and risers of staircase is to be laid in single piece.
- 10.7 The rate of items of flooring is inclusive of Providing Sunken Flooring in Bathrooms, Kitchen, W.C., etc. and nothing extra on this account is admissible.
- 10.8 Chasing of required width and thickness shall be made in brick work at skirting location so as to flush the external surface of skirting with internal plastering. No extra payment towards making chases in brick work at skirting shall be made and the same is presumed to be inclusive of rate quoted for the item of providing and fixing skirting.
- 10.9 Proper gradient shall be given to flooring for toilets, verandah, kitchen, courtyard etc. so that the wash water flows towards the direction of floor trap. Any reverse slope if found, shall be made good by the contractor by ripping open the floor/grading concrete and nothing shall be paid for such rectifications.
- 10.10 The flooring and skirting will be executed as per pattern shown in the Architectural drawings and as per approval of Engineer-in-Charge and nothing extra shall be payable on this account.
- 10.11 The rate shall include the cost of all materials and labour involved in all the operations. Nothing extra shall be paid for use of cut/sawn stone/ tiles in the work.
- 10.12 **The flooring laid with stone slab / tile / marble / Granite/ Ceramic tiles / vitrified tiles etc. shall be adequately protected by a layer of plaster of Paris, which shall be maintained throughout and removed just before handing over of the works for which nothing extra shall be payable.**
- 11.0. **VITRIFIED TILES FLOORING**
- 11.1 The tiles shall be of approved make and shall generally conform to Table 12 of IS15622. The Vitrified tiles of specified sizes shall be used & sample of tiles shall be got approved from the Engineer - in - charge. The Mandatory tests for vitrified tiles shall be got done as per CPWD Specifications (volume - 1) / relevant BIS Code.

- 11.2 The vitrified shall be as specified in the item. The tiles shall be of specified colours as shown in the drawings or as approved by Engineer - in - Charge and will be laid in pattern as per architectural drawings. Nothing extra shall be paid for laying tiles in specific pattern. The tiles shall be first quality of approved make and to be procured from mother plant only.
- 11.3 **The vitrified tile flooring / ceramic tile flooring or like tile flooring work shall be adequately protected by a layer of plaster of Paris, which shall be maintained throughout and removed just before handing over of the works for which nothing extra shall be payable.**
- 12.0 **WATER PROOFING: -**
- 12.1 The work shall be got executed as per CPWD or manufactures' specifications and from the specialized agency as approved by the Engineer in Charge.
- 12.2 Contractor shall also submit the names of water proofing specialist along with information about their technical capabilities and list of similar works executed by the specialized agency in the past for the approval of Engineer-in-charge within 30 days from the date of award of work.
- 12.3 Total quantity of the water proofing compound required shall be arranged only after obtaining the prior approval of the make by Engineer-in-charge in writing. Materials shall be kept under double lock and key and proper account of the water proofing compound used in the work shall be maintained. It shall be ensured that the consumption of the compound is as per specified requirements.
- 12.4 The finished surface after water proofing treatment shall have adequate smooth slope as per the direction of the Engineer-in-charge.
- 12.5 Before commencement of treatment on any surface, it shall be ensured that the outlet drain pipes / spouts have been fixed and the spout openings have been chased and rounded off properly for easy flow of water.
- 12.6 The entire execution of waterproofing work shall be video recorded and submitted to Engineer-in-Charge on a DVD disc. Various toilets shall be indexed and written with paint on the walls for reference and identification purpose.
- 12.7 **GUARANTEE BOND FOR ALL WATER PROOFING ITEMS: -**
- Ten years** Guarantee bond in prescribed proforma **given in the tender document** shall be submitted by the contractor which shall also be signed by both the specialized agency and the contractor to meet their liability / liabilities under the guarantee bond. However, the sole responsibility about efficiency of water proofing treatment shall rest with the building contractor. **10%(Ten per cent) of the cost of water-proofing work shall be retained as Security Deposit and the amount so deducted would be released after 10 (Ten) years from the date of completion of the entire work under the agreement, if the performance of the treatment is found satisfactory.** If any defect is noticed during the guarantee period, the contractor shall rectify it within 15 days of receipt of intimation of defects in the work. If the defects pointed out are not attended to within the specified period, the same will be got done from another agency at the risk and cost of contractor. However, this security deposit can be released in

full, if bank Guarantee or FDR of equivalent amount for Full 10 (Ten) years is produced and deposited with the department.

13.0. FINISHING: -

13.1 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.

13.2 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.

13.3 The paint shall be obtained in smaller packing (around 20 liters).

13.4 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.

13.5 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.

13.6 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.

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

13.8 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.

13.9 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.

14.0 SANITARY INSTALLATIONS /WATER SUPPLY / DRAINAGE: -

14.1 The contractor shall be responsible for the protection of the sanitary and water supply fittings and other fittings and fixtures against pilferage and breakage during the period of installation and thereafter until the building is handed over.

- 14.2** The contractor shall furnish all labour, materials and equipment, transportation and incidental necessary for supply, installation, testing and commissioning of the complete Plumbing / Sanitary system as described in the Specifications and as shown on the drawings. This also includes any material, equipment, appliances and incidental work not specifically mentioned herein or noted on the Drawings/Documents as being furnished or installed, but which are necessary and customary to be performed under this contract. The Plumbing / Sanitary System shall comprise of following:
- a. Sanitary Fixtures and Fittings.
 - b. Internal and External Water Supply.
 - c. Internal and External Drainage.
 - d. Balancing, testing & commissioning.
 - e. Test reports and completion drawings.
- 14.3** 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. For quality control & monitoring of workmanship, contractor shall assign at least one engineer who would be exclusively responsible for ensuring strict quality control, adherence to specifications and ensuring top class workmanship for the installation.
- 14.4** The work in general shall be carried out as per CPWD Specifications (Volume II) 2019 with up-to-date correction slips.
- 14.5** The tendered rates shall include the cost of cutting holes in walls, floors, RCC slabs etc. wherever required and making good the same for which nothing extra shall be paid.
- 14.6** Nothing extra for providing & fixing CP Brass caps /extension pieces wherever required for CP Brass fittings shall be paid beyond the rates payable for corresponding CP Brass fittings.
- 14.7** The contractor shall examine all architectural, structural, plumbing, electrical and other services drawings and check the as-built works before starting the work, report to the Engineer In-Charge any discrepancies and obtain clarification. Any changes found essential to coordinate installation of his work with other services and trades, shall be made with prior approval of the Engineer In-Charge without additional cost to the department.
- 14.8** All the shop drawings shall be prepared on computer through AutoCAD System based on Architectural Drawings and site measurements within two months of the stipulated date of start of the contract, contractor shall furnish, for the approval of Engineer In-Charge, the two sets of detailed shop drawings of complete work and materials including layouts for Plant room, Pump room, Typical toilets drawings showing exact location of supports, flanges, bends, tee connections, reducers, detailed piping drawings showing exact location and type of supports, valves, fittings etc.; external insulation details for pipe insulation etc.

- 14.9** These shop drawings shall contain all information required to complete the work. These Drawings shall contain details of construction, size, arrangement, operating clearances, performance characteristics and capacity of all items of equipment, also the details of all related items of work by other contractors. Each shop drawing shall contain tabulation of all measurable items of equipment/materials/works and progressive cumulative totals from other related drawings to arrive at a variation-in-quantity statement at the completion of all shop drawings. Minimum 4 sets of drawings shall be submitted after final approval along with CD. When he makes any amendments in the above drawings, the contractor shall supply two fresh sets of drawings with the amendments duly incorporated along with check prints, for approval. The contractor shall submit further four sets of shop drawings to the Engineer In-Charge for the exclusive use by the Engineer In-Charge and all other agencies. No material or equipment may be delivered or installed at the job site until the contractor has in his possession, the approved shop drawing for the particular material/equipment / installation.
- 14.10** Shop drawings shall be submitted for approval four weeks in advance of planned delivery and installation of any material to allow the Engineer In-Charge ample time for scrutiny. No claims for extension of time shall be entertained because of any delay in the work due to his failure to produce shop drawings at the right time, in accordance with the approved programme.
- 14.11** Samples of all materials like valves, pipes and fittings etc. shall be submitted to the Engineer In-Charge prior to procurement for approval and retention by Engineer In-Charge and shall be kept in their site office for reference and verification till the completion of the Project. Wherever directed a mockup or sample installation shall be carried out for approval before proceeding for further installation without any extra cost.
- 14.12** Approval of shop drawings shall not be considered as a guarantee of measurements or of building dimensions. Where drawings are approved, said approval does not mean that the drawings supersede the contract requirements, nor does it in any way relieve the contractor of the responsibility or requirement to furnish material and perform work as required by the contract.
- 14.13** All materials and equipment shall conform to the relevant Indian Standards and shall be of the approved make and design. Makes shall be in conformity with list of approved manufacturers as per the tender document.
- 14.14** Balancing of all water systems and all tests as called for the CPWD Specifications shall be carried out by the contractor through a specialist group, in accordance with the Specifications and Standards. The installation shall be tested and shall be commissioned only after approval by the Engineer In-Charge. All tests shall be carried out in the presence of the representatives of the Engineer In-Charge and nothing extra shall be payable on this account.

- 14.15** The contractor shall submit completion plans for water supply, internal sanitary installations and building drainage work within 15 days of the date of completion. These drawings shall be submitted in the form of two sets of CD's and four portfolios (300 x 450 mm) each containing complete set of drawings on approved scale indicating the work as installed. These drawings shall clearly indicate complete plant room layouts, piping layouts and sequencing of automatic controls, location of all concealed piping, valves, controls and other services. In case the contractor fails to submit the completion plans as aforesaid, security deposit shall not be released and these shall be got prepared at his risk and cost.
- 14.16** The CCI/CI/PVC pipe and GI pipe etc. wherever necessary shall be fixed to RCC columns, beams etc. with rawl plugs and nothing extra shall be paid for this.
- 14.17** The variation in consumption of material shall be governed as per CPWD specification and clauses of the contract to the extent applicable.
- 14.18** The pig led to be used in joints of 150mm,100mm, 75mm, 50mm dia of sand cast iron, centrifugally cast (Spun) iron pipes shall be as per relevant CPWD Specifications.
- 14.19** The contractor shall bear all incidental charges for cartage, storage and safe custody of materials and shall construct suitable godowns, yards at the site of work for storing materials so as to be safe against damage by sun, rain, fire or theft etc., at his own cost and also employ necessary watch and ward establishment for the purpose at his own cost.
- 14.20** All fixtures and fittings shall be provided with all such accessories as are required to complete the item in working condition whether specifically mentioned or not in the Schedule of Quantities, specifications, elsewhere in this tender document & drawings. The quoted rates shall be deemed to be all inclusive for a complete item fit for use including all materials, labour, T&P, specials, equipment, testing & commissioning etc. Accessories shall include proper fixing arrangement, brackets, nuts, bolts, screws and required connection pieces. Nothing extra whatsoever shall be payable on this account.
- 14.21** Fixing screws shall be half round head chromium plated brass screws with C.P. washers where necessary or otherwise as provided in the item.
- 14.22** Porcelain sanitary ware shall be glazed vitreous China of first quality free from warps, cracks and glazing defects and shall conform to relevant BIS codes. Colour of sanitary ware, shall be specified or as selected by the Engineer-in-Charge. Nothing extra shall be payable on this account.
- 14.23** Horizontal pipes running along ceiling shall be fixed on structural adjustable clamps of approved design. Horizontal pipes shall be laid to uniform slope and the clamps adjusted to the proper levels so that the pipes fully rest on them and are properly secured.

- 14.24** Contractor shall provide all nuts, bolts, welding material and paint the Clamps with one coat of red oxide and two or more coats of black enamel paint.
- 14.25** Slotted angle/channel supports on walls shall be provided wherever shown on drawings. Angles/channels shall be of sizes shown on drawings or specified in schedule of quantities. Angles/channels shall be fixed to brick walls with bolts embedded in cement concrete blocks and to RCC walls with suitable anchor fasteners. The spacing of support bolts horizontally shall not exceed 1m.
- 14.26** Wherever M.S. clamps are required to be anchored directly to brick walls, concrete slabs, beams or columns, nothing extra shall be payable for clamping arrangement and making good with cement concrete 1:2:4 mix (1 cement: 2 coarse sand: 4 stone aggregate 20 mm nominal size) or as directed by the Engineer-in-Charge.
- 14.27** The ground colour shall be applied throughout the entire length of pipe. Colour bands shall be superimposed on the ground colour and shall be applied near valves, junctions, joints, service appliances, bulkheads, valves, etc. for clear identification of fluid being carried and to avoid confusion. The relative proportional widths of the first colour band to the subsequent bands shall be 4:1. The minimum width of the narrowest colour band shall be 25 mm.
- 14.28** Rates for all items quoted shall be inclusive of all work and items given in the above mentioned specifications and Schedule of Quantities and applicable for the work under floors, in shafts or at ceiling level at all heights and depths. All rates are inclusive of cutting holes and chases in RCC and masonry work and making good the same. All rates are inclusive of pre testing and on site testing of the installations, materials and commissioning.
- 14.29 Cleaning and Disinfection of Pipelines:-**
- On completion of hydraulic tests and before a pipe is disinfected, it shall be proved to be free from obstruction, debris and sediment by scouring or by any other process which the Engineer-in-charge may prescribe. Upon satisfactory completion of testing and cleaning, the pipelines shall be disinfected as ordered. Chlorine solution shall be applied at the charging point as the pipeline is being filled and dosing shall be continued until the pipeline is full and at least 50 parts of chlorine per million parts of water have been made available and distributed evenly. If ordinary bleaching powder is used, proportions will be 150 gms of bleaching powder to 1000 litres of water. If a proprietary brand is used, the proportion shall be as specified by the manufacturer. The treated water shall be left in pipeline for a period as directed but not exceeding 24 hours chlorine residual tests shall be taken at various points along the pipeline. The disinfection process shall be repeated until the sample of water taken from the pipeline is declared fit for human consumption by a recognized laboratory.
- 14.30** Opening, cut out in slabs, beams as required shall be left out by inserting PVC spouts of required size before casting of RCC members. Nothing extra shall be paid on this account.

14.31 The entire responsibility for the quality of work will however rest with the building contractor only.

15.0 STAINLESS STEEL RAILINGS:

15.1 Providing, fabricating and fixing in position welded built-up section using stainless pipes and connecting plates, of Grade S.S. 316 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 stainless steel screws, nuts, bolts and washers or stainless steel 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.

15.2 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 stainless pipes and stainless steel plates provided and fixed shall be measured in kg.

15.3 Guarantee Bond: The Contractor shall submit Guarantee Bond as per Proforma given in the tender document. In addition 5% (five percent) of the cost of this item of work shall be retained as security deposit and the amount so withheld would be released after **five** years from the date of completion of the entire work under the agreement, if the performance of the work done is found satisfactory. If any defect is noticed during the guarantee period, it shall be rectified by the contractor along with any incidental repairs to structure, flooring, finishing, fixtures and any other related damaged work within fifteen days of receipt of intimation of such defects in the work. If the defects pointed out are not attended to within the specified period, the same shall be got done from another agency at the risk and cost of the contractor and the cost of attending such repairs shall be deducted from any dues payable to the contractors

16.0 Aluminium Work

16.1.1 The work shall be carried out as per specified CPWD Specifications in general and as per directions of Engineer - in - charge.

16.1.2 Guarantee Bond: The Contractor shall submit Guarantee Bond as per Proforma given in the tender document. In addition 5% (five percent) of the cost of this item of work shall be retained as security deposit and the amount so withheld would be released after **Five years** from the date of completion of the entire work under the agreement, if the performance of the work done is found satisfactory. If any defect is noticed during the guarantee period, it shall be rectified by the contractor along with any incidental repairs to structure, flooring, finishing, fixtures and any other related damaged work within fifteen days of receipt of intimation of such defects in the work. If the defects pointed out are not attended to within the specified period, the same shall be got done from another agency at the risk and cost of the contractor and the cost of

attending such repairs shall be deducted from any dues payable to the contractors.

17.0 uPVC WINDOWS & VENTILATORS

All openable and fixed window system shall have minimum 3 hollow chambers from front to back. The sliding system frames shall have minimum 3 chambers from front to back. The Sliding system Sashes shall have minimum 2 chambers from front to back. The outer profile shall not be less than 56mm.

All sections of the frame and sash shall be reinforced in accordance with the system supplier's recommendations in galvanized mild steel in a single continuous length.

GENERAL REQUIREMENT

Profile

The profile is to be extruded from a compound that has been blended to ensure quality and consistency. The material shall be pristine white high impact modified window grade uPVC and shall conform to BS EN 12608:2003 as below.

Description	Required Value
Flexural modulus of Elasticity Resistance to impact by falling mass at -10°C for Class II (falling mass 1000g; falling height 1500 mm - as per BSEN 12608:2003).	Shall not be less than 2200N/mm ² not more than 1 test specimen shall show rupture in wall.
Mean Breaking Stress for welded corners.	Shall not be less than 35N/mm ² for compression bending test or 25N/mm ² for tensile bending test.

The profile shall be a hollow 3-chamber (across depth) profile with an outer wall thickness not less than 2.2mm. The profile shall be of first grade/quality uniform and free from foreign bodies, cracks or marks.

Fabrication of Window: -

- i) The window units shall be designed with all corner joints; transom joints and mullion joints being mitred and fusion welded.
- ii) All excess material is to be neatly trimmed and neatly feature grooved/raised nib finish at corners, transom joints and mullion joints.
- iii. There will be no mechanical joining of the profile
- iv. No polishing flush of any joints will be permitted
- v) The window units shall be designed so that the route of drainage is prevented from passing through the reinforcement chamber.
- vi) The finished product shall be free from all sharp edges, burrs and the like that may be hazardous to the user.

- vii) The dimensional tolerances on the finished outer frame height and width shall be +3mm. Frame assemblies shall be such that they can be installed square within a maximum difference in the diagonals of 4mm. Minimum overlap of sash on frame shall be 8mm.
- viii) In all window units, adequate drainage should be provided to permit the escape of water from platforms or horizontal members beneath each sealed unit. The drainage slots shall not penetrate into the reinforcement chambers. Rain water Stop to be provided wherever necessary to provide barrier to excess rain water.

Reinforcement

- i) Reinforcement shall be made from GI tube of not less than 1.5mm thickness as per strength requirement unless otherwise approved by Engineer-in-Charge.
- ii) Steel reinforcement shall conform to IS 277:2003 or equivalent. Base material of steel shall conform to IS 513:2008–Drawing Grade.
- iii) The reinforcement shall be installed in accordance with the recommended actions. The reinforcement shall conform to the wind load requirements of IS 875: Part 3. The reinforcement shall be in one continuous length and should be installed minimum 5mm and maximum 10mm from the face of the profile to be welded.
- iv) The reinforcement shall be secured to the profile so that it does not move or rattle and it maintains the structural integrity of the frame and satisfactory thermal separation. Reinforcement is to be fixed at a maximum of 100mm from the ends and then at a maximum of 300mm centers.

Glazing and Weather Seals

GLAZING

- i) Window shall be such that glazing or re-glazing on site is possible without the need to remove the outer frames from the structure of the building.
- ii) All glazing is to be packed in accordance with the system supplier's recommendations to prevent any kind of damage during handling.

WEATHER SEALS

The weather seals shall be EPDM/Silicone seals. ASTM-D412 and ASTM-D2240 are standard specifying test methods for Tensile strength and Hardness of the gasket whereas the required value shall be specified

Ultimate tensile strength min >7.5/mm²

The weather seals are to be fitted in continuous lengths and grooves. The joints in the vent weather seal are to be positioned at the bottom and in the outer frames at the top.

Security and Safety

Fasteners shall be designed so that they cannot be released from the outside by the insertion of a thin blade.

No opening light shall be openable or removable from the outside, when it is fastened in the closed position, except by use of special tools or breaking part of the window.

QUALITY CONTROL AND TESTING OF MATERIALS

Raw Material

The material from which the profiles are made shall consist substantially from white polyvinylchloride as per BSEN 12608:20003. Only those additives and pigments may be used that are needed for the manufacture of the compound and its subsequent conversion into sound, durable extrusions of good surface finish and mechanical strength, as assessed by the requirements of this specification.

Profile Properties

Appearance and Finish

The color of the profile shall be uniform and the color of all profiles in a system shall be uniform. The profile shall be free from foreign bodies, cracks or sink marks when viewed by normal corrected vision at 90° to the surface and at a distance of 1 meter in normal diffused north light.

Dimensions and Weights

The profiles shall be straight such that the longitudinal axis of the profile, as measured on the face surfaces, may deviate from the straight line by no more than 1 mm per meter.

The cross section of the profile shall conform in shape and dimensions and may deviate by no more than + 0.5mm; glazing channels and seal grooves may deviate by not more than + 0.3mm. The weight of the profile per meter shall not be more than 5% below the nominal value.

Window properties

U-Value: The total U_w -U value of complete window shall be $3.3W/m^2K$
Resistance to wind load:

All load bearing members shall be adequately reinforced so as to resist the wind load requirements of IS875: Part 3. Calculations shall be submitted for all window designs.

AIR Tightness:

The air infiltration for windows shall not exceed 1 liters/second m^2 @ 75Pa for both positive and negative pressures (certified for use in air conditioned buildings)

Water Tightness:

The water penetration for windows shall be minimum 15 minutes @ 150 Pa as per AS 4420.5.

Installation of Frame

- i. Before installation the Installation Team is to make sure that the opening has been prepared and any repair work has been carried out. Allow a 5mm gap between the frame and the opening. The new window shall be set in the prepared opening. Allow for suitable packing blocks.
- ii. The window shall be fixed into the aperture, by drilling and fixing through the outer frame, to the existing structure using 'Fischer' fixings, F8 S type bolts.

- iii. The fixings shall be no less than 150 mm from corners or transoms/mullions and at no more than 600mm centers.
- iv. When the frame is securely fixed in position then fit glass and glazing beads. Allow for any necessary glazing blocks and glass lock devices.
- v. Check windows for correct operation before proceeding with making good.
- vi. No fixings are to penetrate the drainage channels.
- vii. The windows shall be first treated with Polyurethane Foam (P U Foam) to enhance insulation against heat and Noise. The gap between masonry and the frame is to be filled with Neutral Cure Silicon (exposed to sun surface) and/or Acrylic Sealant (only for the internal surface). The windows shall be first treated with Polyurethane Foam (PU Foam) to enhance insulation against heat and Noise.
- viii. The silicone joints should be covered with Architraves/trims as per direction of Engineer-in-charge.

Making Good

- i) Making good to the external surface of the window frame and finish with a compatible approved low modular silicone sealant to BS5889. All trims and quadrants are to be approved by the Engineer-in-Charge prior to fixing.
- ii) Allow for making good any disturbed plaster, brick work and decorations internally and externally including color wash to brick work.
- iii) Clean off excess material and check fittings and gearing.
- iv) Leave installation clean and in good working order.

GENERAL ITEMS

- i) This specification is to be read in conjunction with any other relevant documents and drawings.
- ii) Sizes are not to be scaled from any drawings or sketches but should be measured on site prior to manufacture.

Window Accessories

- i) Window should be designed and reinforced such that it can with stand the wind load requirements by providing suitable strengthening accessories.
- ii) The window shall meet the requirements of water tightness
Trims shall be used to cover the window to masonry joints

Window Hardware

- i) All slider door/windows are to be provided with multi point locking arrangement with/without key locking facility as per the requirement. The hardware shall be provided as per preferred list attached. The slider locking mechanism handles are of projected/flush type.
- ii) Casement window friction stays are to be of G-U or Securistyle or equivalent make of appropriate size and weight bearing capacity, made of SS 304. The stack height of friction stay is to be 16+0.5 mm.
- ii) The casement windows are to be provided with multi point locking mechanism of shall be provided as per preferred list attached.

LIST OF FIELD TESTS

- i) Particle size and shape.
- ii) Flakiness & Elongation Index tests.
- iii) Bulking of sand.
- iv) Silt content of sand.
- v) Temperature measuring with thermometer with brass protected end 0-200° C.
- vi) Pressure test of water supply lines.
- vii) Leakage test of water supply lines & sanitary stacks.
- viii) Any other tests as per CPWD specifications.

(TABLE-1)

Equipments for Testing of Materials & Concrete at Site Laboratory

All necessary equipment for conducting all necessary tests shall be provided at the site in the well-furnished site laboratory of minimum 25 sqm area by the contractor at his own cost. The following minimum laboratory equipments shall be set up at site office laboratory: -

Sl. No.	Equipment	Numbers (Minimum)
1.	Pumps and pressure gauges for hydraulic testing of pipes	As per requirement
2.	Graduated glass measuring cylinder	As per requirement
3.	Sets of sieves for coarse aggregate	As per requirement
4.	Sets of sieves for fine aggregate	As per requirement
5.	Cube moulds size 70mmx70mmx70mm	As per requirement
6.	Cube moulds size 150mmx150mmx150mm	As per requirement
7.	Electronic balance 100kg	As per requirement
8.	Physical balance weight upto 5kg	As per requirement
9.	Measuring jars 100ml, 200ml, 500ml	As per requirement
10.	Gauging trowels 100mm & 200 mm with wooden handle	As per requirement
11.	Spatula 100mm & 200mm with long blade wooden handle	As per requirement
12.	Vernier calipers 12" & 6" size	As per requirement
13.	Digital PH meter least count 0.01 mm	As per requirement
14.	GI tray 600x450x50mm, 450x300x40mm	As per requirement
15.	Screw gauge 0.1mm -10mm, least count 0.05	As per requirement
16.	Thickness gauge for measuring flakiness index	As per requirement
17.	Elongation gauge	As per requirement
18.	Measuring cylinder 3,5-,10- & 15-liter cylinder	As per requirement
19.	Motorized sieve shaker	As per requirement
20.	Pruning Rods 2kg weight length 40 cm and ramming face 25 Sqm.	As per requirement
21.	Hammer 1lb& 2lb	As per requirement
22.	Bituminous Road-Testing Equipment.	As per requirement
23.	Any other equipment for site tests as outlined in BIS and as directed by the Engineer-in-charge.	As per requirement

Note:

1. The contractor has to establish within 21 days from the award of work a field laboratory at site including all necessary equipments and skilled manpower for the **Field Tests as indicated in the tender document** this 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.
2. 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.
3. 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.
4. All the above structures should be decent looking and shall be fabricated as per direction of Engineer-in-charge.
5. All the above structure shall be demolished after completion of work and the dismantled material shall be the property of the contractor.

Third party quality assurance by technical team of any reputed institution such as NCCBM/CBRI/IIT Chennai 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.

(TABLE - 2)
PLANT AND EQUIPMENT REQUIRED TO BE OWNED / TAKEN ON LEASE
BY THE CONTRACTOR

Sl.No.	Equipment	Numbers (Minimum)
1.	Excavator cum loader (JCB 3D model or equivalent)	As per requirement
2.	Compressor machine minimum 200 cfm with rock breaker	As per requirement
3.	DG set of capacity as per requirement	As per requirement
4.	Needle Vibrators.	As per requirement
5.	Plate Vibrators.	As per requirement
6.	Reinforcement cutting machine.	As per requirement
7.	Auto level & staff.	As per requirement
8.	Welding machine 400 Amere	As per requirement
9.	Tractor with trolley.	As per requirement
10.	Water tanker.	As per requirement
11.	Screener for coarse sand and fine sand	As per requirement
12.	Centrifugal Mono block water pump minimum Capacity 2 HP	As per requirement
13.	Centering & Shuttering	As per requirement
14.	Any other equipment for site tests as outlined in BIS and as directed by the Engineer-in-charge.	As per requirement

Note:

- (i) The above list is only indicative and not exhaustive.
- (ii) The above plant and equipment are to be brought to site within 60 days from the date of issue of Commencement order, failing which, a penalty at Rs.5,000/- per day delay in the mobilization of equipment will be levied on the agency. Such penalty levied will be recovered from the immediate next RA bill of the contractor. However, if the work is completed within the stipulated date of completion, then the amount recovered will be refunded without any interest payment.

**PROPOSAL FOR ELIGIBLE ASSOCIATING AGENCIES FOR
SPECIALISED CIVIL COMPONENTS OF WORK**

**Name of work: Construction of Internal Cement concrete roads at Sainik School,
Kalikiri, Andhra Pradesh.**

I/we hereby propose the following agencies as per mentioned against each for executing corresponding specialized civil components of work. Their consent letters are also attached.

Sl. No	Name of Associated Contractor	Category and Class of registration	Enlistment copy/completi on Certificates attached	Monetary Limit of work	Validity of registrat ion	Consent letter attached (Yes/No)
	Tennis Court					

Note: Self Attested photocopies of enlistment order, work experience certificates of each agency for each component of specialized civil work shall be submitted.

Signature of contractor

FORM -H

CONSENT LETTER FROM ELIGIBLE ASSOCIATE AGENCY OF
SPECIALISED CIVIL COMPONENT OF WORK

**Name of work: Construction of Internal Cement concrete roads at Sainik School,
Kalikiri, Andhra Pradesh.**

I / We hereby give my consent to associate with M/s, for
executing the specialized civil component of work of (Mention category).

1. I / We will execute the work as per specifications and conditions of the agreement and as per directions of the Engineer -in-Charge for the corresponding specialized civil work till the completion of the work.
2. I / We will be responsible for necessary action to handover the specialized civil work and for rectification of defects and repair during the maintenance / warranty period.
3. Also, I / We will employ full time technically qualified Engineer / supervisor for the specialized civil component of the work as required for the work. I / We will attend inspection of officers of the department as and when required.

Date:

Signature with date of Major component contractor

Signature with date of Associate/
specialized civil Component Contractor

Address

Address

Witness with address
(From major component contractor side)

Witness with address
(From specialized civil Component contractor side)

AFFIDAVIT OF MEMORANDUM OF UNDERSTANDING (MOU)
(to be submitted for each and every Specialized Civil component)

1. M/s. (Name of the firm with full address)
Enlistment Status
Valid Up to:
(Henceforth called the main Contractor)

2. M/s. (Name of the firm with full address)
Enlistment Status
Valid Up to:
(Henceforth called Associated Contractor)

For the execution of Specialized Civil Work

Name of work: Construction of Internal Cement concrete roads at Sainik School, Kalikiri, Andhra Pradesh.

We state that M.O.U between us will be treated as an agreement and has legality as per Indian Contract Act (amended up to date) and the department (CPWD) can enforce all the terms and conditions of the agreement for execution of the above work. Both of us shall be responsible for the execution of work as per the agreement to the extent this MOU allows. Both the parties can be paid consequent to the execution as per agreement to the extent this MOU permits. In case of any dispute, either of us will go for mediation by the Engineer In charge. Any of us may appeal against the mediation to the Chief Engineer, CPWD, Vijayawada. His decision shall be final and binding on both of us.

We have agreed as under:

1. The Associated Contractor will execute all Specialized Civil works in the wholesome manner as per terms and conditions of the agreement.
2. The Associated Contractor shall be liable for disciplinary action if he fails to discharge the action(s) and other legal action as per agreement.
3. All the machinery and equipment's, tools and tackles required for execution of the Specialized Civil works, as per agreement, shall be the responsibility of the Associated Contractor.
4. The site staff required for the Specialized Civil work shall be arranged by the Associated Contractor as per terms and conditions of the agreement.
5. Site order book maintained for the said work shall be signed by the main contractor as well as by the Engineer of the Associated Contractor and by Associated Contractor himself.
6. All the correspondence regarding execution of the Specialized Civil work shall be done by the department with the Associated Contractor with a copy to the main contractor. In case of
Non-compliance of the provisions of agreement, the main contractor, as well as the associated contractor shall be responsible. The action under clauses 2 and 3 shall be initiated and taken against the main contractor.

SIGNATURE OF MAIN CONTRACTOR

Date:

Place:

SIGNATURE OF ASSOCIATED CONTRACTOR

Date

Place:

1. Witness with address
(From major component contractor side)

2. Witness with address
(From Specialized Civil
component contractor side)

NOTE: Affidavit to be furnished on a 'non-judicial' stamp paper worth Rs.100/-

(On non-judicial stamp paper of minimum Rs.100)
GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR
FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF
WATER-PROOFING WORKS (All Water - Proofing Items).

The agreement made this..... day of (Two Thousand _____ only)betweenS/o(hereinafter called the GUARANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part).

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated and made between the GUARANTOR OF THE ONE PART AND the Government of the other part whereby the contractor inter alia undertook to render the building and structures in the said contract recited completely water and leak-proof.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the effect that the said structures will remain water/leak proof for **(10)Ten years** to be reckoned from the date after the expiry of maintenance period prescribed in the Contract.

NOW THE GUARANTOR hereby guarantees that work executed by him will render the structures completely leak proof and the minimum life of such water proofing treatment shall be **(10) Ten years** to be reckoned from the date after the expiry of maintenance period prescribed in the contract.

The decision of the Engineer-in-charge with regard to nature and cause of defect shall be final and binding on Guarantor.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect being found render the building water proof to the satisfaction of the Engineer-In-Charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the Guarantor's cost and risk. The decision of the Engineer-in-charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to execute the water proofing or commits breach there under, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and / or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligatorand by for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of :-

- 1. 2.
-

SIGNED FOR AND BEHALF OF THE PRESIDENT OF INDIA BYin the presence of :-

- 1. 2.
-

(On non-judicial stamp paper of minimum Rs.100)
GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR
FOR REMOVAL OF DEFECTS AFTER COMPLETION
IN RESPECT OF ALUMINIUM DOORS, WINDOWS & VENTILATOR
WORK/STAINLESS STEEL WORK

The agreement made this..... day of (Two Thousand only)..... betweenS/o(hereinafter called the GUARANTOR of the one part) and the PRESIDENT OF INDIA (hereinafter called the Government of the other part)

WHEREAS THIS agreement is supplementary to a contract (Hereinafter called the Contract) dated and made between the GUARANTOR OF THE ONE PART AND the Government of the other part, whereby the contractor inter alia, undertook to render the work in the said contract recited structurally stable, workmanship, powder coating, anodizing, colouring and sealing etc.

AND WHEREAS THE GUARANTOR agreed to give a guarantee to the affect that the said work will remain structurally stable and guaranteed against faulty material and workmanship, defective anodizing/ powder coating for **Five years** to be reckoned from the date after the expiry of maintenance period prescribed in the Contract.

The decision of the Engineer-In-Charge with regard to nature and cause of defect shall be final.

During this period of guarantee, the guarantor shall make good all defects and in case of any defect to satisfaction of Engineer-in-charge at his cost and shall commence the work for such rectification within seven days from the date of issue of the notice from the Engineer-in-charge calling upon him to rectify the defects failing which the work shall be got done by the Department by some other contractor at the guarantor's cost and risk. The decision of the Engineer-in-Charge as to the cost payable by the Guarantor shall be final and binding.

That if the guarantor fails to make good all defects or commits breach there under, then the guarantor will indemnify the principal and his successor against all loss, damage, cost expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on both the parties.

IN WITNESS WHEREOF these presents have been executed by the obligatorand by for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

SIGNED, sealed and delivered by OBLIGATOR in the presence of:-

1. 2.

SIGNED FOR AND ON BEHALF OF THE PRESIDENT OF INDIA BY..... in the presence of:-

1. 2.

**GOVERNMENT OF ANDHRA PRADESH
ABSTRACT**

Mines & Minerals - Amendment to the Rule 10 of the Andhra Pradesh Minor Mineral Concession Rules, 1966 Orders - issued.

INDUSTRIES AND COMMERCE (M.II) DEPARTMENT

G.O.MS.No. 11

Dated: 11-02-2020

Read the following:

1. G.O.Ms.No.198, Industries & Commerce (M.I) Dept., dt:13.08.2009.
2. GSR No.423 (E), dt: 10.02.2015 from the Ministry of Mines, Govt. of India, New Delhi.
3. G.O.Ms.No.100, Industries & Commerce (M.II) Dept., dt:31.10.2015.
4. G.O.Ms.No.105, Industries & Commerce (M.II) Dept., dt:13.11.2015.
5. G.O.Ms.No.38, Industries & Commerce (M.II) Dept., dt:17.03.2016.
6. G.O.Ms.No.156, Industries & Commerce (M.II) Dept., dt:03.11.2016.
7. G.O.Ms.No.131, Industries & Commerce (M.II) Dept., dt:04.10.2017.
8. G.O.Ms.No.18, Industries & Commerce (M.II) Dept., dt:29.01.2018.
9. G.O.Ms.No.28, Industries & Commerce (M.II) Dept., dt:17.04.2018.
10. G.O.Ms.No.49, Industries & Commerce (M.II) Dept., dt:21.02.2019.
11. Proposal from the Director of Mines & Geology, vide e-file No: INC04-17021(34)/1/2019-PLANNING SEC-DMG received by the Government on dt. 11.12.2019

ORDER:

After careful examination of the proposal received from the Director of Mines & Geology, Andhra Pradesh, Ibrahimpatnam in the letter 11th read above, the Government hereby decided to amend the Rule 10 of Andhra Pradesh Minor Mineral Concession Rules, 1966 for enhancing the existing Seigniorage fee and Dead Rent in respect of Minor Minerals.

2. The following notification will be published in the Extra-ordinary issue of the Andhra Pradesh Gazette, dated: 11.02.2020.

NOTIFICATION

In exercise of the powers conferred by sub-section (1) of section 15 of the Mines & Minerals (Development and Regulation) Act, 1957 (Central Act 67 of 1957), the Governor of Andhra Pradesh hereby makes the following amendments to the Andhra Pradesh Minor Mineral Concession Rules, 1966 issued in G.O.Ms.No.1172, Industries and Commerce Department, dated. 04.09.1967 and subsequent amended from .time to time.

AMENDMENT

In the said rules, under Rule 10 for Schedules I and II, the following shall be substituted, namely

"SCHEDULE-I"RATES OF SEIGNIORAGE FEE

Sl. No.	Name of the Minor Mineral	Units	Rate of Seignorage Fee (in Rupees)
1.	Agate	M.T.	Rs. 145 (Rupees One Hundred and Forty Five)
2.	Ball Clay	M.T.	Rs. 75 (Rupees Seventy Five)
3.	Barytes		
	i. Grey Colour - A Grade	M.T.	Rs. 480 (Rupees Four Hundred and Eighty)
	ii. Grey Colour - B Grade	M.T.	Rs. 355 (Rupees Three Hundred and Fifty Five)
	iii. Grey Colour - C + D + Waste Grade	M.T.	Rs.220 (Rupees Two Hundred and Twenty)
	iv. White Colour	M.T.	Rs. 1100 (Rupees One Thousand and One Hundred)
	v. Of colour other than Grey	M.T.	Rs. 500 (Rupees Five Hundred)
4.	Building Stone	M ³ /M.T.	Rs. 90/60 (Rupees Ninety / Sixty)
5.	Calcareous Sand	M.T.	Rs. 90 (Rupees Ninety)
6.	Calcite	M.T.	Rs. 90 (Rupees Ninety)
7.	Chalcedony Pebbles	M ³ /M.T.	Rs. 90/60 (Rupees Ninety / Sixty)
8.	Chalk	M.T.	Rs. 95(Rupees Ninety Five)
9.	China Clay	M.T.	Rs. 60 (Rupees Sixty)
10.	Clay (Others)	M.T.	Rs. 60 (Rupees Sixty)
11.	Corundum	M.T.	Rs. 120 (Rupees One Hundred and Twenty)
12.	Diaspore	M.T.	Rs. 415 (Rupees Four Hundred and Fifteen)
13.	Dimensional Stone used for Kerbs & Cubes	M.T.	Rs. 135 (Rupees One Hundred and Thirty Five)
14.	Dolomite	M.T.	Rs. 100 (Rupees One Hundred)
15.	Dunite or Pyroxinite	M.T.	Rs. 60 (Rupees Sixty)
16.	Feldspar	M.T.	Rs. 100 (Rupees One Hundred)
17.	Felsite	M.T.	Rs. 130 (Rupees One Hundred and Thirty)
18.	Fireclay	M.T.	Rs. 60 (Rupees Sixty)
19.	Fullers Earth / Bentonite	M.T.	Rs. 180 (Rupees One Hundred and Eighty)
20.	Fuschite Quartzite	M.T.	Rs. 90 (Rupees Ninety)

21.	Granite useful for cutting and polishing purpose					
S. No	Item	Unit	Super Gang Saw equal and above 300cm x 180cm size	Mini Gang Saw equal and above 270cm x 150cm size	270cm x 150cm & Below size	Below 75cm size
i.	Black Galaxy Granite Variety	M ³ /MT	Rs.4600 / Rs.1415 (Rs. Four Thousand Six Hundred / Rs. One Thousand Four Hundred Fifteen)	Rs.3680 / Rs.1130 (Rs. Three Thousand Six Hundred Eighty / Rs. One Thousand One Hundred Thirty)	Rs.3450 / Rs.1060 (Rs. Three Thousand Four Hundred Fifty / Rs. One Thousand Sixty)	Rs.1550 / Rs.480 (Rs. One Thousand Five Hundred Fifty / Rs. Four Hundred Eighty)
ii.	Black Granite other than Galaxy variety	M ³ /MT	Rs.3450 / Rs.1150 (Rs. Three Thousand Four Hundred Fifty / Rs. One Thousand One Hundred Fifty)	Rs.2875 / Rs.960 (Rs. Two Thousand Eight Hundred Seventy Five / Rs. Nine Hundred Sixty)	Rs.2700 / Rs.900 (Rs. Two Thousand Seven Hundred Nine Hundred)	Rs.1150 / Rs.385 (Rs. One Thousand and One Hundred Fifty / Rs. Three Hundred Eighty Five)
iii.	Colour Granite Srikakulam Blue, Moon White River white of Visakhapatnam Dist., Leptinites of Coastal Dists., Black pearl of Prakasam and Guntur Dists.	M ³ /MT	Rs. 3450 / Rs.1255 (Rs. Three Thousand Four Fifty Rs. One Thousand Two Hundred Fifty Five)	Rs.2875 / Rs.1045 (Rs. Two Thousand Eight Hundred Seventy Five / Rs. One	Rs. 2700 / Rs. 980 (Rs. Two Thousand Seven Hundred / Rs. Nine Hundred and Eighty)	Rs.1150 / Rs.420 (Rs. One Thousand and One Hundred Fifty / Rs. Four

				Thousand Fourty Five)		Hundred Twenty y)
iv.	Colour Granite of other varieties	M ³ / MT	Rs.2700 / Rs.985 (Rs. Two Thousand Seven Hundred / Rs. Nine Hundred Eighty Five)	Rs.247 0 / Rs.900 (Rs. Two Thous and Four Hundr ed Seventy / Rs. Nine Hundr ed)	Rs.2300 / Rs.835 (Rs. Two Thousan d Three Hundred / Rs. Eight Hundred and Thirty Five)	Rs.115 0 / Rs.420 (Rs. One Thous and One Hundr ed Fifty / Rs. Four Hundr ed Twent y)
v.	Kuppam Grey Granite available in Santhipuram&Ramakuppamman dals of Chittoor District	M ³ / MT	Rs.1925 / Rs.700 (Rs. One Thousand Nine Hundred Twenty Five / Rs. Seven Hundred)	Rs.165 0 / Rs.600 (Rs. One Thous and Six Hundr ed Fifty / Rs. Six Hundr ed)	Rs.1375 / Rs.500 (Rs. One Thousan d and Three Hundred and Seventy Five / Rs. Five Hundred)	Rs.110 0 / Rs.400 (Rs. One Thous and One Hundr ed / Rs. Four Hundr ed)
vi.	Chittoor Colour Granite (Other than Silver-waves, Madanapalli white and Iscon white)	M ³ / MT	Rs.1925 / Rs.700 (Rs. One Thousand Nine Hundred Twenty Five / Rs. Seven Hundred)	Rs.1650 / Rs.600 (Rs. One Thousan d Six Hundred Fifty / Rs. Six Hundred)	Rs.1375 / Rs.500 (Rs. One Thousan d and Three Hundred and Seventy Five / Rs. Five Hundred)	Rs.110 0 / Rs.400 (Rs. One Thous and One Hundr ed / Rs. Four Hundr ed)

Sl. No.	Name of the Minor Mineral	Unit	Rate of Seignorage Fee (in Rupees)
22.	Gypsum	M.T.	Rs. 150 (Rupees One Hundred and Fifty)
23.	Jasper	M.T.	Rs. 145 (Rupees One Hundred and Fourty

			Five)
24.	Kaolin	M.T.	Rs. 60 (Rupees Sixty)
25.	Laterite		
	i. Dispatched for use in Alumina & Aluminium metal extraction	M.T.	Rs. 200 (Rupees Two Hundred)
	ii. For use other than Alumina and Aluminium metal extraction and export	M.T.	Rs. 100 (Rupees One Hundred)
26.	Lime Kankar / Lime stone	M.T.	Rs. 90 (Rupees Ninety)
27.	Lime Shell	M.T.	Rs. 120 (Rupees One Hundred and Twenty)
28.	Limestone Slabs:		
	i. Color	Sq.M t / M.T.	Rs. 10 (Rupees Ten) per Sq. Mt
	ii. White	Sq.M t / M.T.	Rs.120 (Rupees One Hundred and Twenty) per MT whichever is higher
	iii. Black	Sq.M t / M.T.	Rs. 6 (Rupees Six) per Sq. Mt or Rs. 110 (Rupees One Hundred and Ten) per MT whichever is higher.
29.	Manufactured Sand	M ³ /M.T.	Rs. 90/60 (Rupees Ninety / Sixty)
30.	Marble	M ³ /M.T.	Rs. 300/120 (Rupees Three Hundred / One Hundred and Twenty)
31.	Mica		
	i. Crude	M.T.	Rs.2000 (Rupees Two Thousand)
	ii. Scrap	M.T.	Rs. 750 (Rupees Seven Hundred and Fifty)
32.	Morrum / Gravel & Ordinary Earth	M ³ /M.T.	Rs.45 / 30 (Rupees Fourty Five / Thirty)
33.	Mosaic Chips	M.T.	Rs. 90 (Rupees Ninety)
34.	Ochre	M.T.	Rs. 60 (Rupees Sixty)
35.	Ordinary Clay, Silt and Brick Earth used in the Manufacture of Bricks including Mangalore Tiles		Rs. 8000 (Rupees Eight Thousand Per Kiln per Annum for Bricks and Tiles)
36.	Ordinary Sand	M ³ /M.T.	Rs. 100 / Rs. 66 (Rupees One Hundred / Rs. Sixty Six)
37.	Pyrophyllite	M.T.	Rs. 200 (Rupees Two Hundred)
38.	Quartz	M.T.	Rs. 90 (Rupees Ninety)
39.	Quartzite	M.T.	Rs. 90 (Rupees Ninety)
40.	Rehmati	M ³ /M.T.	Rs. 35 / 25 (Rupees Thirty Five / Twenty Five)
41.	Road Metal / Ballast	M ³ /M.T.	Rs. 90 / 60 (Rupees Ninety / Sixty)
42.	Rough Stone / Boulders	M ³ /M.T.	Rs. 90 / 60 (Rupees Ninety / Sixty)
43.	Sand (Others)	M.T.	Rs. 100 (Rupees One Hundred)
44.	Shale	M.T.	Rs. 180 (Rupees One Hundred and Eighty)
45.	Shingle	M ³ /M.T.	Rs. 90 / 60 (Rupees Ninety / Sixty)
46.	Silica Sand	M.T.	Rs. 100 (Rupees One Hundred)
Sl. No.	Name of the Minor Mineral	Units	Rate of Seignorage Fee (in Rupees)

47.	Slate	M.T.	Rs. 175 (Rupees One Hundred and Seventy Five)
48.	Steatite or Talc or Soapstone		
	i. Filler Grade	M.T.	Rs. 100 (Rupees One Hundred)
	ii. Other Grade	M.T.	Rs. 550 (Rupees Five Hundred and Fifty)

SCHEDULE-II
RATES OF DEAD RENT

S. No.	Name of the Minor Mineral	Rate of Dead Rent per hectare per annum (In Rupees)
1	Black Galaxy Granite and Black Granite	Rs. 1,30,000/- (Rs. One Lakh Thirty thousand)
2	All Colour Granite varieties	Rs. 1,30,000/- (Rs. One Lakh Thirty Thousand)
3	Limestone other than classified as major minerals used for lime burning for Building construction purpose, marble, boulders, building stone including stone used for Road Metal, Ballast, Manufactured sand, concrete & other construction purpose, Shale, Slate & phyllites, Mosaic Chips, Fullers Earth/ Bentonite & Dimensional Stone Used for Cubes and kerbs	Rs. 65,000/- (Rs. Sixty Five Thousand)
4	Gravel, Morrums, Ordinary Earth, shingle, Limestone Slabs used for flooring purpose Limekankar, Chalcedony pebbles used in the building purpose Limeshell for burning used for building purpose and Rehmati.	Rs. 52,000/- (Rs. Fifty Two Thousand)
5	Barytes and Laterite	Rs. 26,000/- (Rs. Twenty Six Thousand)
6	Agate, Corundum, Diaspore and fluorite	Rs. 20,000/- (Rs. Twenty Thousand)
7	Mica	Rs. 15,000/- (Rs. Fifteen Thousand)
8	All minor minerals which are not covered under Serial number 1 to 7 above.	Rs. 20,000/- (Rs. Twenty Thousand)

3. This order shall come in to force with immediate effect.

4. This order issues with the concurrence of Finance Department vide their U.O No. FMUOASD(IC)/. 2019-FMU-IIEIC, dt. 09.01.2020 (computer No 1063684)

[BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH]

K. RAMGOPAL
PRINCIPAL SECRETARY TO GOVERNMENT
(MINES)

To

1. The Commissioner of Printing , Stationary & Store purchase (Ptg. Wing), Vijayawada. (He is requested to publish the above notification in the Extra-ordinary issue of Andhra Pradesh, and arrange to send 1000 copies of the same to Govt. Ind. & Com. (M.II) Department).
2. The Director of Mines & Geology, Andhra Pradesh, Ibrahimpatnam.
3. The Chief Executive Officer, SERP, Vijayawada.

4. All the Joint Director/ Deputy Director / Asst. Director of Mines & Geology through the Director of Mines & Geology, Ibrahimpatnam.

Copy to:

1. The Secretary to Govt. Ministry of Mines, Govt. of India, Shastry Bhawan, New Delhi.
2. The Law Department / The Finance Department.
3. The P.S to Minister for Mines & Geology. / The PS to Prl. Secretary to Govt, (Mines).
4. SF/SC (e-file NO. INC04-17021(34)/1/2019-PLANING SEC-DMG, Comp. No. 1052464).

Note:

Rates of Seigniorage fee mentioned above in Schedule I & II is for guidance only and Royalty / Seigniorage fee, DMF, MERIT etc., shall be deducted from the running / final bills of Contractor as per the updated Seigniorage fee intimated by the Industries and commerce (M.I) department, Government of Andhra Pradesh, from time to time and nothing extra shall be payable in this regard and no claim in this regard shall be entertained.

**GOVERNMENT OF ANDHRAPRADESH
DEPARTMENT OF MINES AND GEOLOGY**

From
Sri B. Ashok Kumar, M.Sc.,
Asst. Director of Mines and Geology,
Chittoor
e-mail No.admgctr@gmail.com
Cell No.9100688839

To
The Executive Engineer & SM(C),
Central Public Works Department,
Ministry of Housing & Urban Affairs,
Tirupati Project Division - I,
III Permanent Campus,
Venkatagiri Road,
Yerupadu Mandal,
Chittoor District.

Lr. No. 7105/OD/2013, Dt.09-02-2021

Sir,

Sub:- Mines and Minerals - O/o. Assistant Director of Mines and Geology, Chittoor -
Furnish Seigniorage Fee deduction from work bills / ongoing work details -
Requested - Regarding.

Ref:- 1. Government Memo. No. 12326/M I (1)/2015, Dt. 26.09.2015 from Industries &
Commerce (M-II) Department.
2. Memo. No. 21684/MR.ODC/2015, Dt. 07.10.2015.
3. G.O.Ms.No.18, Ind. & Com. (M-II) Dept., Dt: 13-01-2016.
4. G.O.Ms.No.36, Ind. & Com. (M-II) Dept., Dt: 14-03-2016.
5. G.O.Ms.No.11, Ind. & Com. (M-II) Dept., Dt: 11-02-2020.
6. Lr.No.23(8)/2021-1/21(H), Dt.28-01-2021 of the Executive Engineer & SM (C)
-oOo-

With reference to your letter reference 6th cited, it is to inform that it is not possible to furnish Bank account particulars as the same is zero based Account.

Further, it is to inform that, the Director of Mines and Geology while enclosing copy of the Government Memo vide ref. 2nd cited directed this office to obtain Seigniorage Fee deductions by other departments against the Minor minerals consumed in their civil works and also to make a comprehensive survey & document the process being followed for the collection and accounting of Seigniorage fee.

Further, you are requested to remit the deducted Seigniorage fee, DMF & MERIT etc., payments under the following head of accounts as detailed below as per G.O's mentioned at reference 3rd to 5th and send the original challans/Demand Drafts to this office for reconciliation and taking further necessary action.

Mineral	Revenue Head	Amount (Rs.Per Cubic Meter / Metric Tonns)	Head of Account	DDO Code	CFMS Service Code
Road Metal	S.Fee	90 / 60	0853-00-102-00-02	1102-1307-001	4008
	DMF (30% of S.Fee)	27 / 18	8448-00-101-01-13-001-001 (Consider for 98%)	1101-1307-001	1102
			8342-00-120-00-13-001-000 (Consider for 2%)	2703-1307-002	8093
	MERIT (2 % of S.Fee)	1.8 / 1.2	8443-00-111-01-27-003-003	2703-1307-002	8213
IT (2% of S.Fee)	1.8 / 1.2	0021-200-6CH	TAN No.HYDO00636G		
Gravel	S.Fee	45 / 30	0853-102-02	1102-1307-001	4008
	DMF (30% of S.Fee)	13.5 / 9	8448-00-101-01-13-001-001 (Consider for 98%)	1101-1307-001	1102
			8342-00-120-00-13-001-000 (Consider for 2%)	2703-1307-002	8093
	MERIT (2 % of S.Fee)	0.9 / 0.6	8443-00-111-01-27-003-003	2703-1307-002	8213
IT (2% of S.Fee)	0.9 / 0.6	0021-200-6CH	TAN No.HYDO00636G		

-2-

In view of the circumstances stated above, I request the Executive Engineer & SM (C), Central Public Works Department, Ministry of Housing & Urban Affairs, Tirupati Project Division - I, Yerpedu Mandal, Chittoor District to furnish the Seigniorage Fee payments particulars recovered from the contractor work bills to this office as per the above mentioned head of accounts immediately.

The earnest action in this regard may be highly appreciated.

Yours faithfully,

B. Ashok Kumar
Asst. Director of Mines and Geology,
CHITTOOR.

Copy Submitted to the:

- The Director of Mines & Geology, Ibrahimpatnam for favour of kind information.
- The District Collector, Chittoor District for favour of kind information.
- The Deputy Director of Mines and Geology, Chittoor for favour of kind information.

*Copy to All
10/2/21
Come to all the AS's
for information
S.H. [Signature]*

GOVERNMENT OF ANDHRA PRADESH

ABSTRACT

Mines&Minerals-
LevyofConsiderationamountonallMinorMineralsinAdditiontotheSeigniorageFee,DMF
andMERIT-Orders-Issued.

INDUSTRIES&COMMERCE(M.III)DEPARTMENT

G.O.MS.No.42

Dated: 07-06-2021

Read the following;

1. G.O.Ms.No.29,Ind.&Com.(Mines-II)Dept.dated15.02.2017
2. G.O.Ms.No.21,Ind.&Com.(Mines-III)Dept.dated25.03.2021
3. FromtheDirectorofMines&Geology,singlefileNo:4072/P/2021

ORDER:

Government, vide G.O.1st read above, have included a pre-emption clause to direct the lessees to sell minerals to the processing industries duly paying the Consideration Amount in addition to Seigniorage Fee, Contribution to DMF and MERIT to the State Government.

2. In the G.O., 2nd read above, Government have ordered that the Silica Sand lease holders shall also pay Consideration Amount of Rs.212/- per ton to the State Government in addition to the Seigniorage Fee, DMF and MERIT and to use the collected fund for the purposes as specified therein.

3. The DM&G, AP., in the single file 3rd read above, while referring to the recommendations of the State Level Core Committee and keeping in view the suggestions made during review meetings on Mineral Revenue receipts and Policy aspects of Department of Mines & Geology, has requested the Government to issue of necessary orders for levy of consideration amount, on the similar lines of Silica Sand orders issued vide G.O.2nd read above, on the lease holders in addition to the Seigniorage Fee, DMF and MERIT, duly fixing it as one time of Seigniorage fee for all minor minerals other than granite and 0.5 time of Seigniorage fee for granite, since it is high value mineral (Seigniorage fee ranges from Rs.3,452 to Rs.4,600 per cum) irrespective of the mode of grant of leases.

4. Government, after careful examination of the proposal of the DM&G, AP, in terms of orders issued vide GO 1st read above, and on the similar lines of the orders issued vide GO 2nd read above, hereby levy consideration amount, on the lease holders, in addition to the Seign. Fee, DMF and MERIT, @ one time of Seigniorage fee for all minor minerals except granite and @ 0.5 time of Seigniorage fee for granite, irrespective of the mode of grant of leases. The funds collected shall be used for the following purposes:

- i. To mitigate the impact of disaster and epidemic;
- ii. To provide the rehabilitation/employment of informal workforce;
- iii. to create all such infrastructures in the field of Cottage / village Industries, MSME generating employment and mitigating the hardships caused due to loss of jobs due to the pandemic;

- iv. to augment the existing health infrastructures;
- v. to establish the community shelters/dormitories/kitchens/food securities etc;
- vi. to provide all such necessary help/logistic support for proper cultivation to the Agriculturist;
- vii. to provide necessary logistics support for marketability of Agriculture produces;
- viii. to provide all necessary assistance/support to all such informal workforce, casual/migrant workforce, persons, who suffered loss of employment or suffered pecuniary losses during the epidemic;
- ix. to augment other welfare schemes in the State or and for all such other purposes as the Government may specify, from time to time in the State.

5. The Director of Mines & Geology, A.P., shall take necessary action accordingly in the matter.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)

GOPAL KRISHNA
DWIVEDIPRINCIPAL SECRETARY
TO GOVERNMENT (M)

To
The Director of Mines & Geology, AP, Ibrahimpatnam, Vijayawada. (w.e.file) All the District Collectors in the State.
The VC&MD, M/s APMDCLtd, Kanur, Vijayawada. Copy to:
The OSD to Hon'ble Minister (Mines & Geology) The PStoPr. Secy. To Hon'ble CM
The PS to Secretary to Govt (Mines) The Finance Department SF /SC(CompNo:1420114)

//FORWARDED BY ORDER//

SECTION OFFICER

**Standard Operating Procedures (SOPs) and Guidelines for Construction Sites for
COVID-19 Outbreak**

The agency shall follow the below mentioned standard operating procedures and guidelines scrupulously at the construction site to contain the outbreak of COVID-19, failure to adhere to the SoPs issued by CPWD and other orders & Guidelines issued by Various Governments (Govt. of India and/or Govt. of AP and/or Dist. Administration or Local Govt.) from Time to Time will result in levy of nonrefundable penalty of Rs.5000/- per day on the agency by Engineer-in-charge which shall be final and binding on the contractor. The quoted rates shall inclusive of all such required measures and materials like Soaps, Detergents, Sanitizers, Disinfectants, Masks, Gloves and other personal protection equipment's to contain COVID-19 and nothing extra shall be paid. All such penalties shall be recovered from the respective Running account bills of the contractor.

In response to COVID-19 outbreak, the following Standard Operating Procedures (SOPs) and guidelines to ensure safety of construction site workers are issued for field units. In addition to trained Supervisor (s), a Site Safety Representative (SSR) will be deployed at every site, to ensure the safety guideline is followed. Necessary trainings will be given in advance to Supervisors and SSRs, so that they can train the workers further.

a. General guidelines - Applicable to All

1. The workers coming from outside will be required to self-declare their health profile as per Annexure 1 and shall be quarantined for a period of at least 15 days. Mandatory
2. Thermal Scanning of everyone entering and exiting a construction site will be done for fever with thermal scanners. if anyone leaves and re-enters the site during the shift, re-screening of the individual will be done prior to re-entry into the work site.
3. PPE and Other material requirement shall be documented as per Annexure 2.
4. Provision for hand wash & sanitizer (touch free recommended) will be made at all entry and exit points and common areas (including at distant locations like higher floors). Everyone will be required to wash & sanitize his/her hands before entering the site and using PPEs. Same procedure to be followed after removing PPEs and exiting the premise. Sufficient quantities of all the items should be available at the site.
5. All Protocol including Emergency Response will be laid out. Periodic tailgate sessions will be arranged to review site protocols in view of highly dynamic scenario ensuring social distancing norms. During these sessions, everyone including workers will be informed about the safety guidelines and important updates. Necessary arrangements for announcements shall be made at every site.
6. Mandatory use of PPEs (face mask, hand gloves and other as applicable) by everyone entering the premise. Re-usable PPEs should be thoroughly cleaned and should not be shared with others.
7. Entire construction site including site office, labour camp, canteens, pathways, toilets, and entry / exit gates will be disinfected on daily basis. Housekeeping team should be provided with necessary PPEs.
8. There will be total Ban on non-essential visitors at sites (including from Head office staff, consultants etc.).
9. There will be strict ban on Gutka, Tambaku, Paan etc. on site and spitting shall be strictly prohibited.
10. Food should be consumed at designated areas only ensuring social distancing.
11. Common sitting arrangements should be removed.
12. Post lunch, waste should be disposed by individual in designated bins and area should remain clean.
13. Areas with a probability of bigger gathering, for e.g., cleaning area, toilets etc. should be identified and all arrangements should be made to ensure social distancing.

14. A doctor will be present periodically (at least once a week) at site on allotted time for any medical assistance.
 15. Appropriate signage at construction site spelling out safety practices in the language which is understood by all.
 16. Hospital/clinics in the nearby area, which are authorized to treat COVID-'19 patients, should be identified and list should be available at Site all the time.
 17. For any confusion, clarification and update, everyone should approach designated authority or rely on authentic source.
 18. Rumors shall be discouraged and offenders be warned.
 19. An isolation room shall be created at site.
- b. Guidelines for workers:**
1. On day 0, before resuming the work on site post lockdown period, mandatory medical check-up will be arranged for all workers. The workers coming from outside will be quarantined for a period of at least 15 days. Only medically fit workers will be deployed at site and medical assistance will be arranged for unfit workers. Medical checkup camp should be arranged every month.
 2. The labours staying at site will not be allowed to go outside. All the essential items will be made available to labours at site only. If necessary, the workers can go out wearing PPEs, after informing supervisor. Similarly, no outside labour will be allowed at site without following proper procedure and instructions.
 3. Start time on site will be staggered to avoid congestion at the entry gates. Number of workers working at a particular time / place will be reduced by making arrangements for different shifts / areas. Accordingly, additional staff such as security guards, supervisors etc. will be deployed.
 4. As in most cases, workers reside at the Sites, hence there is no need for any travel. For Workers staying outside, (which are always nearby) special transportation facility will be arranged without any dependency on the public transport system.
 5. During attendance, training and other sessions, social distancing guidelines will be followed along with provision of no touch attendance.
 6. Workers should not shake hands when greeting others and while working on the site.
 7. Workers shall avoid contact with sick people and avoid going to site if they are feeling sick, have fever, cough or shortness of breath. In such case, supervisor should be informed immediately.
 8. Workers with such symptoms should not come to site and should be placed in isolation and medical assistance will be provided on immediate basis.
 9. Mandatorily wear face masks while working on site. While not wearing masks, worker shall cover his mouth and nose with tissues.
 10. Cough/sneeze should be done in the crook of one's arm and your elbow.
 11. Avoid large gatherings or meetings of 10 people or more. Stay at least 6 feet away from others on job sites and in gatherings, meetings, and training sessions.
 12. Not more than 214 persons (depending on size) will be allowed to travel in lifts or hoists. Use of staircase for climbing should be encouraged.
 13. Workers should clean hands frequently by washing them with soap and water for at least 20 seconds. When hand washing isn't possible, alcohol based hand sanitizer with greater than 60% ethanol or 70% isopropanol should be used.
 14. Workers should not share their belongings like food, water bottles, utensils, mobile phones etc. with others.
 15. The utensils should be washed properly post use at designated place.
 16. Post work, workers should change their clothes before leaving the site and clothing should not be shook out.
 17. Avoid touching eyes, nose, or mouth with unwashed hands.
- c. Guidelines for Material, Tools, Machinery, Vehicles etc.**
1. Wipe down interiors and door handle of machines or construction vehicles, the handles of equipment and tools that are shared, with disinfectant prior to using.
 2. Non-ouch waste bin with disposable garbage bag should be installed for waste collection at all common access areas.

3. Proper disposal of garbage should be ensured.
4. At all point of time, easy access to parking should be ensured since public transit is limited.
5. All construction material arriving at site should be left idle for 3 days before use to ensure safe usage.
6. All vehicles and machinery entering the premise should be disinfected by spray mandatorily.
- d. Emergency protocol in case of detection of symptoms of COVID 19 to be observed by Project Manager of Contractor**
 1. immediate shift worker to isolation room. inform the Engineer-in charge CPWD or his Nodal officer.
 2. Call for a doctor.
 3. Keep worker under observation for a few days in isolation room. In case of doubt act per advice of local doctor.
 4. Covid testing shall be arranges as per instruction of doctor and if so, advised by doctor move worker to Hospital.
 5. Prevent rumors and take strict action against those who spread it.
- e. Responsibility of various stakeholder**

Responsibility of various stakeholders shall be as below

Sl. No.	Designation	Responsibility
1	CPWD Nodal officer as Designated by Engineer in Charge	To coordinate efforts on behalf of Engineer in Charge and ensure compliance of these SOPs. He shall send a daily confirmation of compliance of SOPs.
2	Project Manager of Contractor	Overall responsibility of ensuring compliance of procedure and precautions in SOP. To submit daily compliance report to CPWD Nodal officer To designate a senior person as COVID Marshal and form a team under him
3	COVID Marshal (Nodal Officer)	To exclusively look after the implementation of all the precautions and procedure at work site and labour camps To intimate daily requirement of PPEs, sanitizers, disinfectants etc in their respective sections Regular attendance of workers to ensure no one leaves the site Permission from local authorities Ensuring Timely payment to workers/ staff

Annexure 1

COVID-19 (Coronavirus) Exposure Questionnaire for New workmen

Name:	Native (State, District/City, Village)
Age :	
Gender :	

Please answer the following questions with as much detail as possible:

1. Location/Travel Declaration

- a. Please provide your locations/travel patterns over the past 14 days in Table below:

Country	City/Village	Date Arrived/Since when you have been in the location	Date departed

2. Any cases of COVID-19 in your in the locations where you have been for last 14 days?

YES

NO

3. Are you, or have you been in close contact with anyone who has been quarantined or who has been diagnosed with novel coronavirus (SARS-CoV-2/COVID-19)? If yes, please provide details.

YES

NO

4. Have you ever been quarantined due to a possible exposure to novel coronavirus (SARS-CoV-2/COVID-19)? If yes, please provide dates and locations.

YES

NO

5. Have you experienced any of the following symptoms within the last 14 days?

- . Any fever
- . Cough
- . Shortness of breath
- . Malaise (flu-like tiredness)
- . Rhinorrhoea (mucus discharge from the nose)
- . Sore throat
- . Gastro-intestinal symptoms such as nausea, vomiting and/or diarrhoea

If yes, to any of these, please indicate which and provide full information.

6. Are you currently in good health?

YES

NO

Declaration

I confirm that the answers I have given are, to the best of my knowledge, true, and that I have not withheld any material information that may influence the assessment or acceptance of this application.

I agree that this form will constitute part of my application for insurance(s) and that failure to disclose any material fact known to me may invalidate my insurance(s).

Signature

Date

Time

Witness

Annexure 2

PPE and Other material requirement

Sl. No.	List of Items (Personal Sanitization)	At Stores	At office	At workmen camp
1	Hand Sanitizer (min 60% alcohol)	1 bottle (500ml) at all entrances and to be refilled on regular basis	1 bottle (500ml) at all entrances and to be refilled on regular basis	2 bottle (500ml) at all entrances and to be refilled on regular basis
2	Alcohol based Soap Solution	To be made available on demand	To be made available on demand	2 bottle (500ml) at the front side of each camps visible & easy to access along with water availability for washing. Need to be refilled on regular basis
	Soap (100 gm)		1 No in each toilets and wash basins	1 No. to be distributed to each Contractor workman once in a week.

Sl. No.	List of Personal Protective Equipment (PPEs)	Scope
1	Nose Mask & Paper Tissues	For all workmen (daily one for at least one month)
2	Face mask/Face shield/Goggles	For workmen involved in disinfection/sanitization activity (new one to be issued for each day activity and COVID Marshal)
3	Gloves (Nitrite)	For workmen involved in disinfection/sanitization activity (new one to be issued for each day activity)
4	Coverall/Gowns (Nitrite)	For COVID Marshals and workmen involved in disinfection/sanitization activity (new one to be issued for each day activity)

LIST SHOWING PREFERRED BRANDS/ MANUFACTURERS/MAKES

NOTE: - 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 Engineer-In-charge. However, in case, the equivalent model so approved, is cheaper than the model already mentioned in item/approved makes list, the price adjustment will be made based on the difference in market rate. In case, the rate of subsequently approved model is more, no extra payment will be made on this account.

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, proper check on the quality of the product, actually to be used, should be exercised.

4) The Chief Engineer, CPWD, Vijayawada reserves the right to add or delete any materials and brands in the list of approved makes. However, in case, the equivalent model so approved, is cheaper than the model already mentioned in item/approved makes list, the price adjustment will be made based on the difference in market rate. In case, the rate of subsequently approved model is more, no extra payment will be made on this account.

Sl. No.	Material Description	Brand	Makes *
1	AAC Blocks	A B Dinesh	A B Dinesh
		Areocon	HIL
		Bilt	Bilt
		Ecorex	Ecorex
		Fastbuilt	Fastbuilt
		Kncrete	Koncrete
		NCL	NCL VEKA Ltd.
		Nucon	Green Way building materials India Pvt. Ltd.
		Renacon	Renaatus Procon Pvt. Ltd.
		Siporex	SIPOREX
		Xtralite	Ultra Tech Cement Ltd
SMART BRIX	M/s Smart Brix Infra Technology Pvt. Ltd., Jaggaiahpet Mandal, Krishna District, A.P. - 521175		

Sl. No.	Material Description	Brand	Makes *
2	Acoustic Insulation	Anutone	Anutone Acoustics Ltd.
		Himalyan Accoustics	Himalyan Accoustics
		Kanuf	Knauf Gypsum India Pvt. Ltd.
		Lloyd Insulation	Lloyd Insulation (India) Ltd.
		Saint Gobain Gyproc	Saint Gobain Gyproc India
		Twingerinsul	U.P. Twiga fiber glass ltd.
3	Actativ polypropylene (APP) Modified water proof membrane	Ardex endure	Ardex endure
		Bitumat Co Ltd	Bitumat Co Ltd
		Ferrous crete	Ferrous Crete (India) Pvt Ltd
		Hydrotech ltd	Hydrotech ltd
		Pidilite	Pidilite industries
		STP	Shalimar tar products
4	Acrylic emulsion	Asian Tractor Premium emulsion	Asian paint
		Berger (BISM)	Berger Paints
		Dulux (Super Cover)	ICI Dulux
		Nerolac (Beauty Gold)	Nerolac
		SURFA	M/s Surfa Coats (India) Pvt., Ltd., Bangalore
5	Acrylic smooth exterior paint	Apex (ACE)	Asian Paints
		Berger	Berger
		Dulux	ICI duLux
		Nerolac	Nerolac
		Nippon	Nippon
		SURFA	M/s Surfa Coats (India) Pvt., Ltd., Bangalore
6	Acrylic textured plaster	Apex Duracast	Asian Paints
		Asian paints	Asian Paints
		Heritage	Heritage Rajkamal Group
		Nerolac	Nerolac
		Spectrum paints	Spectrum paints Ltd.
7	Acrylic exterior Texture	Akzonobel	Akzonobel
		Asian paints	Asian paints
		Berger	Berger paints India ltd
		Ebco	Ebco
		Nerolac	Nerolac paints Ltd.
8	Adhesive	Asian Paints	Asian Paints
		CICO	CICO Industries
		Dunlop	India Tyre & Rubber Co (India) Ltd.
		Finical	Pidilite Industries
		Proofex of Adhesive	FOSROC India
		Sika	Sika India Pvt. Ltd
		Vamorganic	Vamorqanic Ltd.

Sl. No.	Material Description	Brand	Makes *
		AC-Tile Bond-N	Apple Chemie(l) Pvt. Ltd
9	Adhesive for AAC Block/Tiles	Ardex Endura/Gold star	Ardex Endura
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd
		Tile Adhesive Plus	Berger Paints
		Ultra tech	Ultra tech cement ltd
10	Air transfer grills	Cool grills	Cool grills, Pune
		Systemair India	Systemair India Pvt Ltd.
11	Air release valve	Kartar	Kartar valves private Ltd.
		Kirloskar	Kirloskar brothers Ltd.,
		RBM	AFS Ltd
12	Aluminium doors/windows sections	Bhoruka	Bhoruka Aluminium Ltd.,
		Hindalco	Hindalco Industries Ltd..
		Hydro	Hydro Extrusion
		INDAL	Indian Aluminium Ltd.,
		Jindal	Jindal Aluminium Ltd ,
		Omalco Extrusion	Omalco Extrusion Pvt Ltd.
13	Aluminium system/ Anodised Aluminium fittings for doors/windows	Padmavati Exrusion	Padmavath Extrusion Private Ltd.
		Bhoruka	Bhoruka Aluminium Ltd.,
		Define	Define Overseas Pvt. Ltd.
		Everite	Everite Agencies
		Hardima	Hardima sales corporation
		Jyothi	Jyothi industries
		Kawneer	Kawnear India
		Schueco	Schueco India Pvt. Ltd.,
		Sigma	Sigma Corporation
		CROWN	M/s Crown Industries
14	Aluminium composite panels	Global	M/s Aluminium Udyog, New Delhi (for non ferrous metal hardware)
		Alpolic	Alpolic
		Alstone	Alstone
		Alstrong	Alstrong
		Alex panel	M/s Alex Panels
		Alucobond	3A composites India Pvt Ltd.
		Aludecor	M/S Aludecor lamination Pvt ltd.
		Eurobond	M/S Euro panel products Pvt ltd.
		Eurobond	Eurobond pvt Ltd.
		Hynadecor	Hynadecor
		Reynobond	Reynobond
		ALUTECH	M/s Alutech Industries, New Delhi
15	Aluminium framework	VIRGO	M/s VIRGO Laminates Ltd., Chandigarh
		MFE (MIVAN)	(MIVAN)
		MFS	MFS

Sl. No.	Material Description	Brand	Makes *
		S-form	S-form
16	Anchor/ SS Stone Cladding Clamps/ Dash fasteners	Anchor	Anchor Ltd.
		BOSCH	BOSCH Ltd.
		Canon	Canon
		Fischer	Fischer India
		Helfen	Helfen Gmbh
		Hilti	Hilti India Pvt. Ltd.
		Nutech	Nutech Concrete Products Pvt. Ltd.
		Trixel	Axel India Pvt. Ltd.
17	Anti corrosive bit mastic paint	Wurth	Wuerth India Pvt. Ltd.
		Bergar	Berger paints India Ltd
		Bituminous black	Asian Paints
18	Butt Hinges openable window shutters	Shalimar	Shalimar paints India Ltd.
		Alu Alpha	Alu Alpha India
		Dorma	Dorma India Pvt. Ltd.
		Dorset	Dorset Industries Pvt. Ltd.
		Earit Bihari	Earit Bihari India Pvt. Ltd.
		Hafele	Hafele India Pvt. Ltd.
19	Bamboo Wood Flooring and wall paneling.	Helix	Helix India
		AMITEX	AMITEX Enterprises, Delhi.
		Eco green Flooring	Jupiter Traders Bangalore.
		Floor India	Flooring India Company, Panipat, Haryana.
		FLOSTO Tanks	Devi Polymer Pvt.,Ltd., Chennai.
		VIVANTA	VIVANTA Enterprises, Mumbai.
20	Cement OPC / PPC	EPITOME	M/s Mutha Industries Pvt. Ltd., Mumbai
		Ambuja Cement	Ambuja Cements Ltd.
		ACC	ACC Cements Ltd
		Bharathi	Bharathi Cement Corporation Ltd.
		Birla	Birla Corporation Ltd
		Century Cement	Birla Gold Cement
		Chettinad	Chettinad Cements Corporation Ltd
		Coromandal	India Cements Ltd.
		Dalmia	Dalmia Cement Bharat Ltd.
		Jaypee Cement	Jaypee Cement Ltd
		J.K. Cement	J.K. Cement Pvt. Ltd.
		Konark Cement	Konark Cement
		Maha Cement	Myhome Industries Pvt. Ltd.
		Penna Cement	Penna Cement Industries Ltd.
		Ramco Cement	M/s Ramco Cement ltd.
Shree Cement	Shree Cement		
Ultra Tech	Ultra Tech Cement Ltd		

Sl. No.	Material Description	Brand	Makes *
		Zuari	Zuari Cement Limited
		Nagarjuna Cement	M/s NCL Industries Ltd., Secunderabad
		NU VISTA / INFRACEM	M/s NU Vista Ltd. (Formerly M/s Emami Cements Limited)
		SAGAR CEMENTS	M/s SAGAR Cements Ltd., Hyderabad
		Anjani	M/s Anjani port land Cement Ltd., Hyderabad
		JSW	M/s JSW Cement Ltd., Mumbai
21	Cement Concrete Parking Tiles	Dazzle	Dazzle Designer tiles Pvt Ltd
		Eurocon	Eurocon tiles india
		Hindustan tiles	Hindustan tiles, Ranchi Pune
		NTC	NTC Parking tiles
		NITCO	NITCO Ltd
		Poddar	Poddar Udyog
		Ultra	Ultra tile private Ltd
		CEMTECH	M/s Cemtech Tiles, Uppal, Hyderabad
		DEC	M/s DEC Industries (P), Ltd.
22	Cement based wall putty	Altek	NCL Alltek & seccold Ltd.
		Ardex Endura	Ardex Endura India Pvt. Ltd.
		Asian paints	Asian paints Ltd
		Berger	Berger
		Birla Wall Care	Birla Cements Ltd.,
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd
		J.K wall putty	J.K. Cement Ltd
		DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
23	Cement Board	Bison	Bison Group
		Everest	Everest Techno polis
24	Cement Primer	Asian paints	Asian Paints
		Berger	Berger paints India Ltd.
		JK Primaxx	JK Cement Ltd
		SURFA	M/s Surfa Coats (India) Pvt., Ltd., Bangalore
25	Centrifugal Hubless Cast Iron Pipe & Fittings	Kapilansh	Kapilansh Dhattu Udyog (P) Ltd.
		NECO	Jayaswal NECO Ltd.
		Raj (RPMF)	Raj Pattern Makers and Founders Pvt.,Ltd.
		SKF	Singhaliorn Foundary Pvt.,Ltd.
		BIC	M/s Bengal Iron Corporation, Kolkata
26	Centrifugally (Spun) cast Iran	Electrosteel	Electrosteel castings Ltd.
		Jindal	Jindal saw Ltd.
		Kesoram	Kesoram Industries Ltd.
		Lanco / Sripipes	Electrosteel castings Ltd.

Sl. No.	Material Description	Brand	Makes *
27	Centrifugally Caste (Spun) Iron Soil Pipe	Bengal Iron Corporation	Bengal Iron Corporation
		HEPCO	HEPCO
		Kapilash	Kapilash Dhatu Udyog (P) Ltd.
		Neco	Jayaswal Neco Ltd
		RPMF	Raj Pattern Makers and Founders Pvt. Ltd
		SKF	SKF industries
28	Chemical water proofing system	BASF	BASF India Ltd.
		Dr. Fixit	Pidilite industries
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Fosroc	Fosroc India
		Latex shield 2K/Tank shield PW	Berger Paints Ltd.
		MC- Bauchemie	MC- Bauchemie India Ltd.
		Perma construction Aid	Perma construction Aid Pvt Ltd
		Sika	Sika India
		Smart Care	Asian Paints Ltd.
		Sunanda speciality coating	Sunanda speciality coating Pvt Ltd.
29	Chloropyriphos	DURSBANTCT	DE-NOCIL Ltd.
		HILBAN	Hindustan Insecticides Ltd.
		NOBAN	Chemts Wets & Flows Pvt. Ltd
		PIRAMID	AMVAC AGRI RASAYAN Pvt. Ltd.
		Premise Agenda	Bayer Ltd.
		Sarups Pest Control	Sarups Pest Control Ltd.
30	CI double flange sluice valve	BURN	BURN
		IVS	Indian Valves Private Ltd.
		Kartar	Kartar valves private Ltd.
		Kirloskar	Kirtoskar brothers Ltd.
		Leader	leader valves Ltd
		RBM	AF-S LL
		Zoloto	Zoloto Industries
31	CI double flangad non return valve	Fluidtech	Fluidtech
		Kirloskar	Kirloskar Brothers Ltd.
		Zoloto	Zoloto Industries
32	CI Manhole cover	BIC	Bengal iron corporation
		HEPCO	HEPCO India
		Neco	Jayaswal Neco Ltd..
		RPMF	M/s Raj Pattern Makers & Founders Pvt. Ltd.
		SKF	SKF Industries
33	Clamp, Rebar, Chemical fastener	Fischer	Fischer India
		Hilti	Hilti India Pvt.Ltd.
		Wurth	Wuerth
34	C.P.Brass Fittings	CERA	M/s Cera Sanitaryware Ltd.

Sl. No.	Material Description	Brand	Makes *
		ESS Bathsense & Royal	Asian Paints Ltd.
		Hindware	HSIL Ltd.
		Jaquar	Jaquar Group
		Johnson	Prism Johnson Ltd.
		KEROVIT	M/s Kajaria Ceramic Limited
		Kingston	Kingston Brass India Pvt., Ltd.
		MARC	MARC Sanitation Pvt.Ltd.
		Parryware	Parryware Sanitaryware
35	CPVC pipe and fittings	Ashirwad	Ashirwad PVC Pipes
		Astral	Astral Polytechnik Ltd..
		Birla HIL Pipes	HIL Ltd.
		Finolex	Finolex Industries Ltd.
		Flowgard	Flowgard
		Prince	Prince Pipes and fittings Ltd.,
		Supreme	Supreme Industries Ltd.
		Truflo	HIS Ltd.
		SENTINI	M/s Sentini Flopipes India Pvt. Ltd, Hyderabad
		DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
		SUDHAKAR	M/s Sudhakar Irrigation Systems Pvt., Ltd.
		AKG	M/s AKG Extrusions Pvt Ltd.,
36	Concealed tower bolt	Alu Alpha	Alu Alpha India
		Dorma	Dorma India Pvt. Ltd.
		Dorset	Dorset Industries Pvt. Ltd.
		Ingersolrand	Ingersolrand (India) Ltd.
37	Damp Proof material	ACCO Proof	ACC Cements Ltd
		Asian Paints smart care damp proof	Asian Paints Ltd.
		BASF	BASF India Ltd.
		CICO	CICO Industries
		Dr. Fixit	Pidilite Industries
		Duraseal	Apurva India Pvt. Ltd.
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Fosroc	Fosroc Chemicals India Pvt. Ltd.
		Impermo	Snowcem Paints
		MAPEI	MAPEI Construction Products India P Ltd
		MYK	MYK LATICRETE India Pvt. Ltd.
		PIDILITE	Pidilite Industries
		SIKA	Sika India Pvt. Ltd.
Weather Coat Roof Guard	Berger Paints India Ltd.		
38	DI Fittings	Electro steel	Electro steel
		Jindal	Jindal
		Kapilansh	Kapilansh

Sl. No.	Material Description	Brand	Makes *
		Keshoram	Keshoram
		Tata Ductura	Tata Ductura
39	DI Pipes	Electrosteel	Electrosteel
		Jindal	Jindal
		Keshoram	Keshoram
		Tata Ductura	Tata Ductura
40	Engineered wood floor	Amstrong	Amstrong flooring
		Mikasa Real wood floors	Green Lam Industries
		New wood	Naw Wood India Ltd
		Pergo	Red floor India
		Werner	Dura floor wemer GmbH
41	EPDM Gaskets	Amee Rubber	Amee Rubber industries Pvt Ltd
		Anand	Anand NVI-I products (P) Ltd.,
		Bohra	Bohra rubber Pvt Ltd..
		Hanu	Hanu Industries
		Roop	Roop Polimers Ltd.,
42	EPDM water proofing Membrane	Ferrous Crete	Ferrous Crete (India) Pvt Ltd
		Fosroc	Fosroc India
		Pidilite	Pidilite Industries
		Smart care	Asian paints
		STP	Shalimar tar products
43	Epoxy	Ardex	Ardex Endura Ltd.
		Asian paints	Asian paints
		CICO Poxo	CICO Technologies Ltd.
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Fosroc	Fosroc India
		Shalibons	Shalimar tar products
44	Epoxy Paint	Ardex Endura	Ardex Endura India Pvt. Ltd.
		Asian epoxy	Asian Paints
		Berger	Berger paints India Ltd.
		Nerolac	Nerolac
		Shalimar	Shalimar paints India Ltd.
		STP Ltd.	Shalimar Tar Products
		SUNANDA	M/s Sunanda Specialty coatings Pvt. Ltd., Mumbai
45	Epoxy tile joint cements	Ardex Endura	Ardex Endura India Pvt. Ltd
		BASF	BASF India Ltd.
		Ferrous Crete	Ferrous Grete (India) Pvt. Ltd
		Fosroc	Fosroc indd
		Laticrete	MYK Laticrete India
46	Expansion Joint Bitumen board	Dura Board HD100	Supreme Industries
		DURAFILL	Supreme Industries
		STP	Shalimar Tar Products

Sl. No.	Material Description	Brand	Makes *
47	False Ceiling	Aerolite	Andhra Polymers Pvt. Ltd./Aerolite Industnas Pvt. Ltd.
		Armstrong	Armstrong Wond Indusvies
		Diamond (GRG Ceiling Tiles)	Diamond International Inex Pvt. Ltd.
		Gridsquare	Gridsquare Ceilings
		Gypframe steel	British Gypsum
		Knauf	Knauf Gypsum India Pvt. Ltd.
		Lloyd	Lloyd Insulation (India) Ltd
		Saint Gobain	Saint Gobain Gyproc
		DEC	M/s DEC Industries (P) Ltd., Hyderabad
48	False ceilings Members (Perimeter, Ceiling section, intermediates, angles etc.,)	Aerolite	Andhra Polymers Pvt. Ltd./Aerolite Industries Pvt. Ltd
		Anutone	Anutone Accoustics Ltd.
		Armstrong	Amstrong World Industries
		Gridsquare	Gridsquare Ceilings
		Hunter Dougals	Hunter Dougals
		Knauf	Knauf Gypsum India Pvt. Ltd.
		Saint Gobain Gyproc	Saint Gobain Gyproc India
		USG Boral	USG Boral
		DEC	M/s DEC Industries (P) Ltd., Hyderabad
49	False Floor	Access floor sytem	Access Floor system
		Hewetson	Hewetson India
		Kebao	Inner Space (Distributors)
		PINNACLE	PINNACLE
		Unifloor	Unifloor India Ltd.
		Unitile	Unitile office systems Pvt. Ltd.
50	Fire Rated hardware	Backers FS	Backers FS
		Dorma	Dorma India Pvt. Ltd.
		Dorset	Dorset Industries Pvt. Ltd.
		Geze	Geze GMBH
		Ingersolrand	Ingersolrand (India) Ltd.
51	Fire rated glass	Contra Flam / Pyroswiss of Saint Gobain	Saint Gobain India Pvt. Ltd.
		Pilkinton	Pilkinton India
		Promat	Promat Fire & Insulation (P) Ltd.
		Pyran of Schott	Schott glass India Pvt. Ltd.
52	Fire retardant paint	Akzonobel	Dulex Akzonobel Paints
		Asian paints	Asian Paints
		Htlti	Hilti India Pvt. Ltd.
		Jotun	Jotun paints
		STPL Ltd.	STPL Ltd.
53	Fire Smoke Seal	Atroflame	Atroflame ltd.
		Hilti	Hilti India Pvt. Ltd.

Sl. No.	Material Description	Brand	Makes *
		Promat	Promat Fire & Insulation (P) Ltd.
		Raven	Raven Global
54	Float Glass,	Saint Gobain	Saint Gobain India Pvt. Ltd.
		Asahi	Asahi India Glass Ltd.
		Pilkinton	Pilkinton India
		Modiguard	Gujarat Guardian Ltd.
		Gold Plus	M/s Gold Plus Glass Industry Ltd., New Delhi
55	Float Valve (Ball valve)	Arco	Arco valve Pvt ltd
		IBP	IBP industries
		Leader	Leader valve Ltd
		Prayag	Prayag Polymers Pvt Ltd.
		Zoloto	Zoloto industries
56	Floor spring (For non DSR Items)	Dorma	Donna India Pvt Ltd.
		GEZE	GEZE GmbH
		Ingersolrand	Ingersolrand India Pvt Ltd
		OZONE	Ozone Hardware.
57	Flushing Cistern	Bath sense	Asian Paints
		CERA	CERA Sanitary ware Ltd.,
		Hindware	HSIL Ltd,
		Jaquar	Jaquar Group
		Kohler	Kohler
		Parryware	ROCA Bath Pvt. Ltd.,
		Somany	Somany
58	Fly ash cement bricks	Concerned CE/SE's will approve based on local availability.	
59	FRP Door Frames & shutters	Ambieance	Ambieance
		Cactus	Cactus
		Duroplast	Duroplast Extrusion pvt ltd.
		Jain doors Pvt. Ltd.	Jain doors Pvt. Ltd.
		Jayna	Jain wood industries
		Meena fibre glass	Meena fibre glass
		Polyline	Polyline
		DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
60	Friction stay hinges	Earl Bihari	Earl Bihari Pvt. Ltd.
		KINLONG	Kinlong Industriss
61	FRP covers	Everlast Composites	Everlast Composites Pvt.,Ltd.
		Fibrocast	Fibrocast FRP cover manufacturer
		Thermodrain	Poly products (I) Pvt.,Ltd.
62	Galvolume sheet for roofing, cladding, sandwich panel	Bhushan	Bhushan steel
		Essar	Essar Group
		JSW	JSW
		Llyod metal craft	Llyod Insulation
		Tata Blue Scope	Tata Blue Scope

Sl. No.	Material Description	Brand	Makes *
		BIRLA AEROCON	M/s HIL Ltd.
63	Galvanising	Jenco	Jenco Group
		Karamtara	Karamtara Engineering Pvt.,Ltd.
		Steel liteS	Galvanized Steel Ltd.
64	G I Pipe fittings	HB	HB Industries
		ICS	Sgree samarth Englnears
		Surya	Surya Roshni Ltd.
		TATA	TATA Steel Ltd.,
		Unik	Unik malleable
		Zoloto	Zoloto Industfiea
65	G.I. Pipes	HISSAR	HISSAR
		Jindal	Jindal Pipes Ltd.,
		Surya	Surya Roshni Ltd.
		TATA	TATA Steel Ltd.,
		Zenith	Zenith Birla (India) Ltd.
66	Glass door hardware	Classic	Classic Hardware
		Dorma	Dorma India Pvt. Ltd.
		Dorset	Dorset Industries Pvt. Ltd.
		Geze	Geze GMBH
		Godrej	Godrej
		Hafele	Hafele India Pvt. Ltd.
		Kich	Kich Architectural Products Ltd.
		Ozone	Ozone Hardware
		Squash	Squash glass doors
67	Glass mosaic tiles	Birla White	Birla Corportion Ltd.
		Bisazza	Bisazza Italy
		Coral	Coral tiles
		Italia	Tie italia mosaic Pvt Ltd
		JK White	JK Cement Ltd.
		Mridul	Mridut tiles
		Paljadto	Palladto Mosaics
		PAVIT (Eco Tile)	PAVIT Ceramics Pvt Ltd.
68	Glazed Ceramic tiles (Also wall tiles)	Aparna	Vitero Tiles
		AGL	Asian Granite India Ltd.
		CERA	CERA Sanitaryware Ltd
		Jonson	Prism Jonson Ltd.
		Kajaria	Kajaria Ceramic Ltd.
		NITCO	NITCO Ltd.
		Oasis	M/s Oasis Vitrified Pvt.Ltd.
		Orient Bell	Orient Bell Ltd.
		RAK	RAK Ceramic India Pvt. Ltd.
		Somany	Somany Ceramic Ltd.

Sl. No.	Material Description	Brand	Makes *
		Varmora Granito	Varmora Granite Granite Pvt. Ltd.
		Vitero	Vitero Tiles Floor and Wall Tile Manufactures India
		Ultra	Ultra Ltd.
		NAVEEN	M/s Murudeswar Ceramics Ltd., Bangalore
69	GRC Jali & Tile	Ecovision	Ecovision Industries Pvt Ltd.
		Mahesh GRC	Mahesh Prefab Pvt Ltd.
		Terrafirma	Terrafirma GRC Industries
		Unistone	Unistone Interiors Pvt.,Ltd.
		DEC	M/s DEC Industries (P) Ltd.
70	GRP/SMC Panel Tank (New product in the market performance is yet to be established)	AMITEX	AMITEX Enterprises, Delhi.
		FLOSTO Tanks	Devi Polymer Pvt., Ltd., Chennai.
		PIPECO Tanks	PIPECO Tanks
		VIVANTA	VIVANTA Enterprises, Mumbai.
71	Grout	Asian Paints - Smart casre	Asian Paints Pvt. Ltd.
		Ardex	Ardex Endura Adhesive India Pvt. Ltd.
		BASF	BASF India Ltd.
		CICO	CICO Industries
		Dr. Fixit	Pidilite Industries
		Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Fosroc GP2	FOSROC India
		Fugabella, Porcelana	Kerakoll India Pvt. Ltd.
		Home shield super grout	Berger Paints India Limited.
		LATA POXY	MYK LATICRETE India Pvt. LTd.
		MYK Schomburg	MYK Arments Range of products
		SIKA	Sika India Pvt.Ltd.
		Weber	Saint Gobain India Pvt. Ltd.
		DEC (Non Shrink grout) (Note: Subject to statutory approvals)	M/s DEC Industries Pvt. Ltd., Hyderabad
		AC-Grout-H1/RR	Apple Chemie (I) Pvt. Ltd
72	Gun metal Valves	Audco	L&T Valves
		Leader	leader valves Ltd ,
		Sant	Sant Valaves Pvt. Ltd.
		Zoloto	Zolota Industries
73	Gypsum Board	Armstrong	Armstrong world Industries
		Gyproc Saint Gobain	Saint Gobain Gyprock India Ltd.
		Lafarge	Lafarge Gypsum India Pvt. Ltd.
		USG Boral board	USG Board India (P) Ltd.
74	Gypsum plaster	Ferrous crete (Ferro-500, Gypsum) Plaster)	Ferrous crete manufacturers
		Gyproc Saint Gobain (Elite 90)	The Saint-Gobain group
		Ultra tech	Ultra Tech Cement Ltd.

Sl. No.	Material Description	Brand	Makes *
75	Heat resistant tiles on terrace	ABC Ceramics	ABC Ceramics
		Endura	Johnson India
		Johnson	Johnson India
		Somany	Somany Ceramic Tiles
		Swastik	Swastik Tiles
		Thermatek	Thermatek
76	High Density (HDF) Prelaminated board	Armstrong	Armstrong world industries Ltd.
		Green ply	Green Ply Industries Ltd.
		Pergo	Red Floor India
77	High end exterior Texture	Allura/ Graniza range	Asian paints
		Berger	Berger paints India Ltd
		SKK Brand	SKK Ltd
78	Hydraulic door closers/ Floor springs	Dorma	Dorma India Pvt. Ltd.
		Dorset	Dorset Industries Pvt. Ltd.
		Everite	Everite agencies
		Godrej	Godrej locking solution & systems
		Hardwyn	Hardwyn hardware
		MAGNUM KIT	Mukund Overseas
79	Interlocking Concrete Paver Blocks	Basant Betons	Basant Betons
		BHARAT (NILSON)	Bharat
		Dazzie	Dazzle Designer tiles Pvt Ltd
		Hindustan tiles	Hindustan tiles, Ranchi Pune
		NITCO (ROCKARD)	NITCO
		REGENCY	Regency
		Shree	Shree Bharat Paver blocks
		Ultra	Ultra tile private Ltd
		Vyara Tiles	VYARA Tiles Pvt. Ltd. / Surat
		CEMTECH	M/s Cemtech Tiles, Uppal, Hyderabad
		DEC	M/s DEC Industries (P) Ltd.
		Any alternative tiles as approved by CE/SE based on local availability.	
80	Laminate	Archid ply	Archid ply industries ltd.
		A1 Teak	A1 Teak Products Pvt.,Ltd.
		Century	Centuray laminates
		Decolam	Decolam India Pvt. Ltd.
		Formica	Formica Laminates (India) Pvt. Ltd.
		Green Lam	Green lam Industries Ltd.
		KANCHAN PLY	M/s Vidya Ply & Board Pvt. Ltd
		Kitmica	Kitply Industries Ltd.
		Merino	Merino laminates
		Royal touche	Royal touche laminates
		Sonear	Sonear Laminates

Sl. No.	Material Description	Brand	Makes *
		Sunmica	Sunmica Industries
		DECO-MICA	M/s Deco-Mica Ltd
81	Linoleum sorts flooring	Armstrong	Armstrong flooring India Pvt. Ltd.
		Forbo	Forbo Flooring India Pvt. Ltd.
		Gerflor	Gerflor flooring
82	Locks & Latches	Dorset	Dorset Industries Pvt. Ltd.
		Godrej	Godrej locking solution & systems
		Hafele	Hafele India Pvt. Ltd.
		Harrison	Harrison locks
		Hitech	Globe Locks India
		Helix	Helix India
		Link	Link Locks
		Plaza	Bharat lock House
83	Masking Tapes	Yale	ASSA ABOLOY India (P) Ltd.
		3M	3M
		Roop	Roop Polymer Ltd.
		Sun	Sun
84	Melamine Polish	Wonder polymer	Wonder Tape Industries
		Asian paints	Asian paints
		Melamine Gold Wudfin	Pidilite industries
		Polycure	Polycure Malaysia
85	Mechanical coupler for reinforcement	Dextra	Dextra India Pvt Ltd.
		Sanfield	Sanfield India Ltd.
		Alchemica	Alchemica Ltd.
		Ardex Endura	Ardex Endura Ltd.
		Asian paints	Smart care water proofing products
86	Membrane water proofing system	BASF	BASF India Ltd.
		Dr. Fixit	Pidilite industries
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Hydro tech	Hydro tech Ltd.
		MYK Schomburg	MYK Arments range of products
		STP Ltd	Shalimar tar products
		Texsa	Texsa India Ltd.
		KRYTON	M/s Kryton Buildmat Co. Pvt. Ltd. Gurugram, Haryana
87	Metalic / Steel Fire Door	SUNANDA	M/s Sunanda Specialty coatings Pvt. Ltd., Mumbai
		Godrej	Godrej Security Solutions
		Kenwood	Kenwood Ply & Board
		MPP Schodders	MPP Technology Pvt. Ltd.
		NAVAIR	NAVAIR International Pvt. Ltd.
		Promot	Promot fire & Insulation (P) Ltd.
Shakthi Hormann	Shakthi Hormann Pvt. Ltd.		

Sl. No.	Material Description	Brand	Makes *
		Signumfire Protection	Signumfire Protection pvt. Ltd.
		Sukri	Sukri Fire Doors Pvt. Ltd.
		ASES (Agni suraksha)	M/s ASES Security Pvt. Ltd., Ghaziabad)
		DEC	M/s DEC Industries Pvt. Ltd.
88	Metal Deck Sheet	Essar	Essar Steel Ltd.
		JSW	JSW Structural Metal Decking Ltd
		SAIL	SAIL
		TATA	TATA steel
89	Mild Steel Butt Hinges/ Piano hinges	Amit	Lovely metal Industries Pvt. Ltd.
		Deepak	Deepak
		Garg	D.P. Garg & Company
		Jolly	Jolly Engineering works
		Jyoti	Jyoti Architectural Pvt. Ltd.
		Saswat	Saswat
		Supreme	Supreme Industries
		Swift	Swift screws
90	Mirror	AIS Mirror	Asahi India Glass Ltd.
		Atul	Autl Glass Industries Ltd.
		Modi Guard	Gujarat Guardian Ltd
		Saint Gobain	Saint Gobain Glass India Ltd.,
		Gold Plus	M/s Gold Plus Glass Industry Ltd., New Delhi
91	Modular kitchen/ wardrobes/Hardware and Accessories	Evoke	Evoke
		Godrej	Godrej & Boyce co
		Sleek	Asian Paints
		Spacewood	Spacewood
92	M.S. Pipe, Tubes	Apollo	Appolo Tubes Ltd.
		JINDAL	JSW
		Kalinga	Kalinga Tubes Ltd.
		SAIL	SAIL
		Surya	Surya Roshi Ltd.
		TISCO	TATA STEEL
93	Multy walled polycarbonate roofing sheets	Danapalon	Danapal Light architecture
		Lexan GE	GE lexan
94	Non Asbestos Sheets	Everest	Everest Industries
		HIL	HIL Ltd.
		RAMCO	RAMCO Industries Ltd.
95	Non Metallic Fire door	Godrej	Godrej Security Solutions
		Kenwood	Kenwood Ply & Board
		NAVAIR	NAVAIR International Pvt. Ltd.
		Promot	Promat Fire & Insulation (P) Ltd.
96	Non Metallic floor	BASF	BASF India Ltd

Sl. No.	Material Description	Brand	Makes *
	surface hardness	CICo	CICO Technologies ltd
		Fosroc	Fosroc India
		Hardonite	Hardonite
		Ironite	Ironite
		Pidilite	Pidilite Industries ltd
		Sika	Sika India
97	Oil Bound Distemper	Berger (BISOM)	Berger Paints
		Dulux (Maxilite)	Dulux
		MG Polyplast	Nerolac
		Tractor Aqalock	Asian Paint
		SURFA	M/s Surfa Coats (India) Pvt., Ltd., Bangalore
98	Overdeck insulation with extruded polystyrene board (XPS board)	Dowcorning	Dowcorning
		Owen scorning	Owen scorning
		Supreme Petrochemical Ltd.	Supreme Petrochemical Ltd.
99	Panel Doors/Wire mesh Door shutters /Fire proof doors	Jain doors	Jain Door Pvt. Ltd.
		NCL	Nagarjuna
		ASES (Agni suraksha)	M/s ASES Security Pvt. Ltd., Ghaziabad
		DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
100	PE-AL-PE Composite Pipes	Kitec	Kitec Industries (India) Pvt. Ltd.
101	Pink primer	Berger	Berger Paints
		Dulex	ICI dutax
		Nerolac	Nerolac Kansia Nerolac Pains Ltd.
		Nippon	Nippon
		Wood primer	Asian paint
		SURFA	M/s Surfa Coats (India) Pvt., Ltd., Bangalore
102	Plasticiser & Super Plasticiser	BASF	BASF India Ltd.
		Chryso-HP/ Delta / Optima	Chryso India Pvt. Ltd.
		CICO	CICO Industries
		Contrament, Power flow	MC Bauchemie (India) Pvt. Ltd.
		Conplast SP 430	FOSROC India
		MYK Schomburg	MYK Arments Range of products
		Plastiment, Sikament	Sika India Pvt. Ltd.
		Smart Care Techno Plast/Smart care maximo plast.	Asian Paints Limited
		Sunanda Chemicals	Sunanda Chemicals Ltd.
		DEC (Admixture(PC, SNF))	M/s DEC Industries Pvt. Ltd., Hyderabad
		(Note: Subject to statutory approvals)	

Sl. No.	Material Description	Brand	Makes *
		VISCOFLUX 2203/2208	Apple Chemie (I) Pvt Ltd
103	Plastic Encapsulated Foot Rest	Accurate Buildcon	Accurate Buildcon company
		KGM	KGM Exports
		KK India	KK Manhole and gratings Co Pvt Ltd.
104	Play Equipments	Koochie Play	Koochie Play systems Pvt Ltd.
		Play world systems	Play world systems India.
105	Post tensioning System	BBR	BBR (India) Pvt. Ltd.
		CRUX	Crux Processing systems Pvt. Ltd.
		Ultracon	Ultracon Structural Systems Pvt. Ltd.
		VSL	VSL India pvt. Ltd.
106	Poly carbonate Sheet	Alcox	Hindeggan Alcox Ltd.
		Danapalan	Danapal Light architecture
		GE Lexon	GE Silicones
		MG Polyplast	MG Polyplast
		DPI – Flux	M/s DPI Day lighting pvt. Ltd. Gurugram, Haryana
107	Polycarbonate Convex mirrors, Rubbarised road hump	Unique safety solutions	Unique safety solutions
108	Poly sulphide sealant	Dr. Fixit	Pidilite industries
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Fosroc	Smart care sealant
		MYK Schomburg	MYK Arments range of products
		Pidilite	Pidilite Industries
		STP Ltd	Shalimar tar products
		Techseal	Choksey chemical Pvt ltd.
		Tuff seal	Bondit construction chemical
AC-Poly seal	Apple Chemie (I) Pvt. Ltd		
109	Polyethylene backer rod	Supreme	Supreme Industries
110	Polyurea Ultra	BASF	BASF
		Ferrous	Ferrous Crete (India) Pvt Ltd
		Pidilite	Pidilite Industries
		SIKA	SIKA India
		Smart care	Asian paints
111	Powder coating	Akzonoble	Akzonoble Coating Ltd.
		Berger	Berger Paints India Ltd.
		Jotun	Jotun Group
112	Powder & PVDF Processer	Aura International	Aura International Pvt.,Ltd.
		MJ coaters	MJ Coaters Pvt.,Ltd.
		SP Coating	SP Architectural Coating Pvt.,Ltd.
113	Prelaminated particle board Exterior Grade	Archid ply	Archid Ply Industries Ltd.
		Associate	Associate Décor Limited

Sl. No.	Material Description	Brand	Makes *
		Centuary	Centuary MDF
		Ecoboard	Ecoboard Industries Ltd.
		Green Lam	Green lam Industries Ltd.
		Kitlam	Kit Ply Industries Ltd.
		Merino	Marino laminates
		Novapan	GVK Novapan Industries Pvt. Ltd.
		TESA Action Co.	TESA Action Co.
		GREEN PANEL	M/s Green Panel Industries Ltd.
		Bison Panel	M/s NCL Industries Ltd., (Board division), Secunderabad
114	Premium Acrylic smooth exterior Paint with silicon additives	Berger	Berger
		Dulux	ICI dulux
		Nerolac	Nerolac
		ULTIMA	Asian paint
		SURFA	M/s Surfa Coats (India) Pvt., Ltd., Bangalore
115	PTMT/PVC water supply sanitary fittings, bibcocks, pillar cock Angle valve,	PEARL	Precision Products
		Prayag	Prayag Polymers (P) Ltd
		Supreme	Supreme industries
116	PT Strands	DP Wires	DP Wires Ltd.
		TATA wiron	TATA STEEL LTD.
		Usha Martin	Usha Martin Ltd.
117	PVC Doors and Frames	Ambieance	Ambieance
		Accucel	Accura Polytech Pvt. Ltd.
		Duroplast	Duroplast extrusion Pvt. Ltd.
		Encraft	Encraft India Pvt. Ltd.
		Plastic Wood	Plastic Wood
		Polyline	Polyline extrusion Pvt. Ltd.
		Rajshri	Rajshri Productions Pvt. Ltd.
		Sintex	Sintex Plastic technology Ltd.
		VEKA	M/s NCL Veka Ltd.
		DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
		RAJSHRI	M/s Rajshri Plastiwood, Pithampur, M.P.
GIZA	M/s Navratan Soociality Chemicals LLT., Ahmedabad – 380051, Gujarat		
118	PVC / HDPE water storage tanks	Sintex	Sintex Plastic technology Ltd.
		Supreme	Supreme Industries Ltd.
		Vectus	Vectus Industries Ltd.
		SUDHAKAR	M/s Sudhakar irrigation system (P) Ltd., Hyderabad
119	PVC Perforated Pipes	Akash Enterprises	Akash Enterprises
		Rex Polyextrusion	Rex Polyextrusion Ltd.
		Supreme	Supreme industries.

Sl. No.	Material Description	Brand	Makes *
		Zenplas Pipes	Zenplas Pipes Pvt Ltd.
120	PVC flooring	Armstrong	Armstrong world Industries
		Ger flor	Ger flor flooring
		LG Hausys	LG Hausys
121	PVDC coating	Akzonoble	Akzonoble Coating Ltd.
		Valspar	Valspar India Coating Corporation Ltd.
122	PU Coating (UV resistant Liquid Applied coating)	BASF	BASF
		Fosroc	Fosroc India
		Pidilite	Pidilite industries
		PU Roof Koat	Berger Paints Ltd
		SIKA	SIKA India
		Smart care	Asian paints
123	PU Enamel Metallic Paints on MS Structure & Epoxy paints (Premium Quality)	Akzonobel	Akzonobel
		Asian paints	Asian paints
		Berger	Berger paints India Ltd.
		MRF	MRF paints
		SKK	SKK ltd
		SUNANDA	M/s Sunanda Specialty coatings Pvt. Ltd., Mumbai
124	Raised / Cavity flooring	Access Floor systems	Access Floor Systems
		Tate	Tate
		Uni floor	Uni floor India
		Unitile	Unitile India
		Zt floor	Zt floor Pvt.,Ltd
125	RCC Pipes	Indian Hume Pipes	Indian Hume Pipe Ltd.,
		Jain & Co	Jain spun pipes Co.,
		Lakahmi Sood & Sood	Lakshmi Sood & Sood Pipa Co.
		Madurai spun pipe	Madura spun pipe company
		Vishnu	Vishnu Spun Pipes.
		DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
126	Ready mix cement plaster	Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Gyproc plasters	Saint Gobain Gyproc India
		Ramco super plaster melamine	Ramco super plaster melamine
		Read Plast	Ultratech cements Ltd
		Ultra tech	Ultra tech Cement Ltd
127	Red Oxide Zinc Chromate primer	Berger	Berger Paints
		Dulex	ICI dulex
		High performance yellow metal primer	Asian Paint
		Nerolac	Nerolac
		Nippon	Nippon
		SURFA	M/s Surfa Coats (India) Pvt., Ltd., Bangalore
128	Reflective glass	Asahi	Asahi India Glass Ltd.
		Glaverbel	Glaverbel India

Sl. No.	Material Description	Brand	Makes *
		Modifloat	Gujarat Guardian Ltd.
		Pilkinton	Pilkinton India
		Saint Gobain	Saint Gobain India Pvt. Ltd.
		Gold Plus	M/s Gold Plus Glass Industry Ltd., New Delhi
		Guardian Sun Guard	M/s Gujarat Guardian Ltd., Gujarat
		GUARDIAN SUNGUARD	M/s Gujarat Guardian Ltd.
129	RMC plants (Ready Mix Concrete)	ACC	ACC Cements Ltd
		A B Dinesh	A B Dinesh Concrete India Pvt., Ltd.
		Aparna	Aparna Ready Mix concrete
		Lafarge	Lafarge India Pvt. Ltd.
		NUVOCO	Nuvoco Vistas Corporation Ltd.
		RB Ready Mix	RB Ready Mix
		RDC	RDC Concrete (India) Pvt.Ltd.
		RMC (India)	RMC (India) Pvt. Ltd.
		Ultra Tech	Ultra Tech Cement Ltd
		Sarvani Industries Pvt. Ltd.,	M/s Sarvani Industries Pvt. Ltd., Guntur Plants at Autonagar, Gajuwaka & Atchutapuram @ Visakhapatnam. Plants at at – Ankireddy Palem, Kolanukonda @ Guntur
		JK Concrete	M/s JK Ready Mix concrete, Visakhapatnam
130	Rockwool/Glass wool insulation	Liyod Insulation	Liyod Insulation ltd.
		Supreme	Supreme Industries ltd.
		Twiga fiber	Twiga fiber glass ltd
131	Sandwich PUF panelled roofing sheets	Advent	Advent concrete vision
		BASF	BASF
		Danapalan	Danapal Light architecture
		Essar	Essar Group.
		Fosroc	Fosroc
		GE Plastic	GE Silicones
		GE Plastic	GE Silicones
		JINDAL MECTEC/ JINDAL	Mectec Pvt Ltd
		LEXAN	LEXAN Ltd
		Liyod Insulation	Liyod Insulation (India) ltd
		Lloyd Insulation	Lloyd insulation (India) Ltd
		Pidilite	Pidilite Industries ltd
		Smart care	Asian paints
Supreme	Supreme ltd		
132	Sensor based Auto flush systems	AOS System	AOS System
		Grohe	Grohe
		Hindware	HSIL Ltd
		Jaquar	Jaquar Group

Sl. No.	Material Description	Brand	Makes *
		Kochier	Kochier
		Parryware	Parryware Sanitary ware
		TOTO	TOTO Ltd.
133	SFRC Cover and grating	Nu-TEC	Nu-Tech concrete products (P) Lld.,
		KK	KK Manhole and gratings Co Pvt Ltd.,
		Kutty	Kutty Industries
134	Shear Stud/ Connector	KOCO	KOSTER & CO
135	Silicon coating	BASF	BASF India Ltd.
		Dow Corning	Dow corning Indd
		GE	GE Silicones
		Wacker	Wacker silicones
136	Silicon Gaskets	Sree Geurev	Sree Gaurav Rubber products
137	Solar studs/ Median markers	3M	3M Science
		Avery Dennison	Avery Donnison India Pvt Ltd.
		Nikkalite	Nippon carbide Industires (USA)
138	Spider patch fittings for structural glazing	Dorma	Dormakaba
		hafele	Hafele Ltd.
		Kich	Kich india
		Ozone	Ozone Ltd.
		Sevax	Saint Gobain Glass India ltd
139	Spray applied Readymade plaster/ Gypsum plaster	Buildon	Buildon
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Gyproc cute 100	Gyproc India.
		Ultratech	Ultratech cement ltd.
140	Spun cast iron fittings	Neco	JayaSwal Neco Ltd
		Kartar	Kartar valves private Ltd. ,
		Electrosteel	Electrosteel
		Kapilansh Centrifugal	Kapilansh Dhatu Udyoo (P)Ltd.
		SKF brand	SINGHALIRON FOUNOARY Pvt. Ltd.
141	Spun cast iron covers & gratings	Jagannath	Sri Jaqannath iron Foundry Pvt. Ltd
		Kapilansh Centrifugal	Kapilansh Dhatu Udyoo{P)Ltd.
		Neco	Jayaswal Neco Ltd
		SKF brand	SINGHALIRON FOUNOARY Pvt. Ltd.,
142	Stainless Steel	Ark Product Pvt. Ltd.	Ark Product Pvt. Ltd.
		Connect	Connect Ltd.
		Jindal	JSW
		KINGSTON	KINGSTON
		Salem	SAIL
		SAIL	SAIL
		DEC (Stainless steel pipes*) *with emboss /mark "RM by JINDAL"	M/s DEC Industries Pvt., Ltd, Hyderabad
143	Stainless Steel screws	Alloy	Alloy Ltd.

Sl. No.	Material Description	Brand	Makes *
		Atul	Atul fasteners Ltd.
		GKW	GKW Limited
		Helix	Helix India
		Kundan	Kundan Industries Ltd.
		Nettlefold	Nettlefold Screws
		Pooja	Pooja Steel Corporation
144	Stainless steel Butt hinges	Dorma	Dorma India Pvt. Ltd.
		Helix	Helix India
		Prayag	Prayag Polymers (P) Ltd.
		Ozone	Ozone Hardware
		DEC	M/s DEC Industries (P) Ltd., Hyderabad
		Global	M/s Aluminium Udyog
145	Stainless steel friction hinges	Earl Bihari	Earl Bihari India Pvt. Ltd.
		EBCO	EBCO
		Hetich	Hetich India
		Haffle	Haffle India Pvt. Ltd.
		ROTO	ROTO Frank Asia
		Securistyle	Securityle India Pvt. Ltd.
146	Stainless steel Bolts, washers, nuts	Atul	Atul fasteners Ltd.
		Hilti	Hilti India Pvt. Ltd.
		Kundan	Kundan Industries Ltd.
		Pooja	Pooja Steel Corporation
		DEC	M/s DEC Industries (P) Ltd., Hyderabad
		GIZA	M/s Navratan Specialty, Chemicals LLT., Ahmedabad – 380051, Gujarat
147	Stainless steel pressure plate screws	Atul	Atul fasteners Ltd.
		Dorset	Dorset Industries Pvt.Ltd.
		Kundan	Kundan Industries Ltd.
		Pooja	Pooja Steel Corporation
148	Stainless Steel Kitchen sink	CERA	M/s Cera Sanitaryware Ltd.
		Diamond	Pheonix Appliances Pvt. Ltd.
		Franke	Franke India Ltd.
		Futura	Futura Kichen Sinks India Pvt. Ltd.
		Hindware	HSIL Ltd
		Jhonson	Prision Jhonson Ltd.,
		Jindal	Centuary polytech
		Joyna	Joyna
		Navkar	Shri Navkar Metals Ltd
		Nilkanth	Nilkant
		Nirali	Jyoti (India) Matel Industries Pvt Ltd
		Silver Shine	Blue stone sanitary Industries Pvt. Ltd.
DEC	M/s DEC Industries Pvt. Ltd., Hyderabad		
149	Steel Windows/	Accucel	Accura polytech Pvt ltd.

Sl. No.	Material Description	Brand	Makes *
	Pressed steel frames	Madhu industries	Madhu industries, San Harvic, NCL
		NCL	NCL Industries
		San Harvic	San Harvic
		DEC(CRCA Door Frames)	M/s DEC Industries Pvt. Ltd., Hyderabad
150	Structural Steel	APL	Apollo Tubes Ltd
		JSPL	JSPL
		JSW	JSW
		SAIL	SAIL
		TISCO	TATA STEEL
		VIZAG	RINL
151	Structural sealant	Asian paints	Smart care sealant
		BASF	BASF India Ltd.
		Dow corning	Dow corning india
		Fosroc	Fosroc India
		GE	GE silicones
		STP Ltd.	Shalimar tar products
		Wacker	Wacker silicones
152	Synthetic enamel Paint	Berger	Berger Paints
		Dulex	ICI dulex Ltd
		Premium gloss enamel	Asian paint Ltd
		Nerolac	Nerolac Paints Ltd
		Nippon	Nippon Paint India Ltd.
		SURFA	M/s Surfa Coats (India) Pvt. Ltd., Bangalore
153	Synthetic Carpet tiles	Hollitex	Hoilitex carper tilas
		Standard Carpets	Standard Carpets
		TOLI	TOLI Corporation
155	Synthetic Sports Flooring	Armstrong	Armstrong flooring
		Gerflor	RMG Polyvinyl India Ltd.
		LG Wondorfloor	LG Hausys India
156	SWR PVC Pipes & fittings	Astral	Astral poytechnik Ltd.
		Finolex	Finolex Industries Ltd .
		Flowgard	Ashirwad PVC Pipes
		Nandi	Nandi pipes Pvt., Ltd.
		Prince	Prince Pipes and fittings
		Sudhakar	Sudhakar PVC Pipes
		Supreme	Supreme Industries Ltd
		SENTINI	M/s Sentini Flopipes India Pvt. Ltd., Hyderabad
		Brila HIL Pipes	M/s HIL Ltd.
		AKG	M/s AKG Extrusion Pvt. Ltd.,
157	Tempered reflective/ clear glass	Asahi	Asahi India Glass Ltd.
		FUSO	FUSO Glass India Pvt. Ltd.
		Gurind	Gurind India

Sl. No.	Material Description	Brand	Makes *
		Imapct Safety	Impact Safety glass works Pvt. Ltd.
		Modiguard	Gujarat Guardian Ltd.
		Pilkington	Pilkington India Pvt. Ltd.
		Saint Gobain	Saint Gobain India Pvt. Ltd.
		Gold Plus	M/s Gold Plus Glass Industry Ltd., New Delhi
158	Thermal Insulation treatment	Asian	Asian Paints Ltd.
		Elastospray	BASF
		Pidilite	Pidilite Industries
		Rock India Pvt. Ltd	Rock India Pvt. Ltd
		Weather Kool & Seal	Berger Paints India Ltd.
159	TMT Bars	JSW	JSW Steel Ltd.
		SAIL	Steel Authority of India Ltd.
		TISCO	TATA STEEL LTD.
		VIZAG	Rastriya Inspat Nigam Ltd.
		RADHA TMT	M/s Radha Smelters Pvt., Ltd.
160	UPVC Pipes and fittings	AKG	M/s AKG Extrusions Pvt. Ltd.,
		Astral	Astral polytechnik Ltd.
		Ashirwad	Aahirwad PVC Pipes
		Finolex	Finalex Industries Ltd.
		KSR	KSR
		Prepoly	Premier PVC Industry
		Prince	Pnncce pipes and fittings Ltd.
		Supreme	Supreme industries Ltd.
		SENTINI	M/s Sentini Flopipes India Pvt. Ltd, Hyderabad
		DEC(UGD pipes(IS 15328))	M/s DEC Industries Pvt. Ltd., Hyderabad
		Birla HIL Pipes	M/s HIL Ltd.
		SUDHAKAR	M/s Sudhakar Polymers Pvt. Ltd.
161	UPVC doors, door frames and windows	Aluplast	Alu Alpha India
		Duroplast	Duro Plast Extrusion Pvt. Ltd.
		Encraft	Encraft India Pvt. Ltd.
		Fenesta	Fenesta DCM Shriman
		Komarling	Profile India Window Technology Pvt. Ltd.
		LG	LG India Pvt. Ltd.
		MARCOLINI	M/s Mathura Poly pack Pvt, Ltd.
		Prominace	M/s Prominace Window Systems
		Rehau	Rehau Unlimited Polymer Solutions
		Sintex	Sintex Plastic technology Ltd.
		Venster/ OKOTECH	Aparna Enterprises limited
		VEKA	M/s NCL Veka Ltd.
		Plast One	M/s Plast One UPVC Profiles Pvt., Ltd., Secunderabad

Sl. No.	Material Description	Brand	Makes *
		DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
		RAJSHRI	M/s Rajshri Plastiwood, Pithampur, M.P.
		SIMTA ASTRIX	M/s Simta Clear Coat Pvt. Ltd., Hyderabad
162	UPVC Hardware	COAR	COAR
		DNV	DNV Global Pvt.,Ltd.
		HOPPE	HOPPE
		PULSE	LGF SYSMAC (India) Pvt.,Ltd.
163	Vitreous Commodes/ Washbasin	BATHSENSE	Asian paints(Bath division)
		CERA	CERA Sanitaryware Ltd.,
		Hindware	HSIL Ltd.
		Jaquar	Jaquar Group
		Kerovit	M/s Kajaria Ceramic limited
		Kohler	Kohler world Wide
		Parryware	ROCA Bath Pvt. Ltd.,
		Roca	ROCA Bath room products
		RAK Sanitaryware	RAK Sanitaryware
		Somany	Somany Ceramic Ltd.
164	Vitrified paving tiles	Durostone	Ever stone International
		Johnson	Johnson India
		Kajaria	Kajaria Ceramics
		PAVIT	PAVIT Ceramics Pvt. Ltd.
165	Vitrified Tiles	AGL	Asian Granite India Ltd.
		CERA	M/s CERA sanitary ware Ltd.
		Johnson	Prism Johnson Ltd.
		Kajaria	Kajaria Ceramic Ltd.
		Marbitto	Marito tiles
		NITCO	NITCO Ltd.
		Oasis	M/s Oasis Vitrified Pvt.Ltd.
		RAK	RAK Ceramic India Pvt. Ltd.
		Restile	Restile Ceramic Ltd.
		Somany	Somany Ceramic Ltd.
		Varmora Granito	Varmora Granite Pvt. Ltd.
		Vitero	Aparna Enterprises limited
166	Water Proof Plywood, Commercial ply, Fire retardant ply and Block boards / Shuttering ply	Archidply	Archid Ply Industries Ltd.
		A1 Teak	A1 teak Industries Pvt. Ltd.
		Century ply	Century Flush Doors
		Duroply	Duro Ply Industries Ltd.
		Duroplast	Duroplast
		Dura sleek	Dura sleek

Sl. No.	Material Description	Brand	Makes *
		Grassim ply	Shree Ram Industries
		Green panel	Green panel Industries Lid.
		Green Ply	Green Ply Industries Ltd.
		Jayna ply	Jain Wood Industries
		KANCHAN PLY	M/s Vidya Ply & Board Pvt. Ltd
		Kitply	Kitply Industries Ltd.
		Polyline	Polyline
		AAMODA	M/s Jai Dayal Plywood Pvt. Ltd., Hyderabad
		BLACK COBRA	M/s Punjab Plywood Industries, Yamunanagr, Haryana
167	Water Proof cement paint	Asian exterior wall primer	Asisn paint
		Berger	Bergar Paints
		Cem Colour	Snowcem Paints
		ICI DULUX	ICI DULUX
		Surfa	Surfactoats (India) Pvt. Ltd.
168	Water supply Valves	ARCO	Arco valves Pvt. Ltd ,
		leader	leader valves Ltd ,
		Nanda	Nanda Miller company
		Zoloto	Zoloto Industries
169	Welding rods	Advani	Advani oerlikon Ltd.
		ESAB	ESAB India Pvt. Ltd.
		ESS, BATHSENSE & Premium Range : Royale	Asian Paints (Bath Division)
		HINDWare	HSIL Ltd.
		Jaquar	Jaquar Group
170	Water supply fixtures like bibcock, Shower panels	Johnson	Prism Jhonson Ltd
		Kerovit	M/s Kajaria Ceramic limited
		Kingston	Kingston brass India
		MARC	MARK Showers
		Metro	Metro sanitations Pvt. Ltd.,
		Parryware	ROCO bath roam products Pvt. Ltd,
		Prayag	Prayag polymers Pvt Ltd ,
		Seiko	Seiko Sanitations
		Waterman	Kewal brothers
171	Water proofing Compound	Accoproof	ACC cement Ltd.
		Alchemica	Alchemica Ltd.
		Ardex Endura	Ardex Endura (India) Ltd.
		Asian Paints	Asian Paints
		CICO	CICO Technologies Ltd.
		Cement Mix Plus/Advanced Latex Plus	Berger Paints India Ltd.
		Dr. Fixit	Pidilite industries

Sl. No.	Material Description	Brand	Makes *
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Fosroc	Fosroc India
		Impermo	Snoweem paints
		MYK Schomburg	MYK Schomburg range of products
		Penetron	Penetron India Pvt Ltd.
		Shalplast LW+	STP Ltd
		Sika	Sika India
		KRYTON	M/s Kryton Buildmat Co. Pvt. Ltd. Gurugram, Haryana
		DEC (SBR Latex) (Note: Subject to statutory approvals)	M/s DEC Industries Pvt. Ltd., Hyderabad
		SUNANDA	M/s Sunanda Specialty coatings Pvt. Ltd., Mumbai
172	Water stops	Ardex Endura	Ardex Endura Ltd.
		BASF	BASF India Ltd.
		Dr. Fixit	Pidilite industries
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Hydroswell	Sika India
		Hydrotite	Sika India
		KRYTON	M/s Kryton Buildmat Co. Pvt. Ltd. Gurugram, Haryana
171	Water proofing materials/ GP Grouts	Asian paints	Smart care SC GP grout grey
		BASF	BASF
		Care	Care
		Ferrous crete	Ferrous Crete (India) Pvt Ltd
		Home shield Super grout	Berger Paints Ltd.
		Pidilite	Pidilite Industries
		SIKA	SIKA India
		KRYTON	M/s Kryton Buildmat Co. Pvt. Ltd. Gurugram, Haryana
		DEC (Non Shrink grout) (Note: Subject to statutory approvals)	M/s DEC Industries Pvt. Ltd., Hyderabad
173	Weather silicon make and grade	Down corning	Down corning india
		Momentive (GE)	GE silicones
174	White Cement	Birla	Birla Corporation Ltd.
		J.K.	JK Cement Ltd.
		Travancore	Travancore Cements Ltd.
175	Wood Polymer composite material for door frames and shutters, plain/pre laminated boards for wall linings etc.	Alstone	Alstone Industries Pvt., Ltd., Jaipur, Rajastan.
		Century	M/s Century Ply Boards (I) Limited
		Ecoste	Ecoste wood polymer composite, Delhi.
		Echon	Kumar Arch Tech, Pvt.Ltd., Rajastan.
		Green ply	Greenply Industries Limited

Sl. No.	Material Description	Brand	Makes *
		Qute Rajasree	Qute Extractions Pvt.Ltd., Chennai. Rajeswari Products Pvt.,Ltd., Madya Pradesh.
176	Wooden Flush door shutters	Archiply	Archiply
		A1 Teak	A1 Teak Products Ltd.
		Century	Century Flush Doors
		Duro Flushdoors	Dura Ply industries Ltd.
		Greenlam	Greenlam Ply Industries Ltd.
		Indian Timber Products	Indian Timber Products
		Jain doors Pvt.Ltd.	Jain doors Pvt.Ltd.
		Jayna Flush Doors	Jain Wood Industries
		Kailash	Kailash Hi Tech Timber Industries India pvt. Ltd.
		KANCHAN PLY	M/s Vidya Ply & Board Pvt. Ltd
		Kenwood	Kenwood Ply & Board
		Kitply	Kitply Industries Ltd.
		Mayur	Mayur Ply industries
		MP Ply wood products	MP Wood products
		National plywood	National plywood
		Raavella door	Raavella Industries (P) Ltd.
		Shakthi	Shree Shakthi Modern Flush doors
		Swatic ply	Swatic ply
		Vidya ply	Vidya ply
		AAMODA	M/s Jai Dayal Plywood Pvt. Ltd., Hyderabad
BLACK COBRA	M/s Punjab Plywood Industries, Yamunanagar, Haryana		
DEC	M/s DEC Industries Pvt. Ltd., Hyderabad		
177	Precast Concrete Manhole covers and Frame	DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
178	HD PE pipes for water supply	DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
179	Pre Painted Galvanized iron / Steel Doors & Windows	DEC	M/s DEC Industries Pvt. Ltd., Hyderabad
		APL APOLLO CHAUKHAT	M/s APL Appllo Tubes Ltd.
180	WPC Doors	RAJSHRI	M/s Rajshri Plastiwood, Pithampur, M.P.

Sl. No.	Material Description	Brand	Makes *
		DEC	M/s DEC Industries (P) Ltd., Hyderabad
		GIZA	M/s Navratan Specialty, Chemicals LLT., Ahmedabad – 380051, Gujarat
181	WPC Frames	DEC	M/s DEC Industries (P) Ltd., Hyderabad
		GIZA	M/s Navratan Specialty, Chemicals LLT., Ahmedabad – 380051, Gujarat
182	CP Bath Fittings & Accessories	Ess Ess “ap Royale” and Bathsense	M/s Asian Limited (Bath Division)
		CORONET	M/s Mohan Metal Industries
183	IoT based building Management System (S.T. Open Protocols)	WIS Spaces	M/s Wenalytics IoT Solutions Pvt. Ltd.
184	CC Kerb Stones	CEMTECH	M/s Cemtech Tiles
		DEC	M/s DEC Industries (P) Ltd.
185	HPL Sheets / Laminates	ALUTECH	M/s Alutech Industries, New Delhi
		VIRGO	M/s Virgo Laminates Ltd., Chandigarh
186	Stainless Steel Door Handles	DEC	M/s DEC Industries (P) Ltd., Hyderabad
187	Stainless Steel Aldrop	DEC	M/s DEC Industries (P) Ltd., Hyderabad
188	Tower Bolts	Global	M/s Aluminium Udyog
189	Door Handles	Global	M/s Aluminium Udyog
New Products			
190	Super Plasticizers (Retarders)	AC-MENT -BV 430 A3	Apple Chemie (I) Pvt Ltd.
191	APCP Based High performance Hyper Plasticizers for self compacting concrete with Higher slump Retention	Visco Flux 5507/6073	Apple Chemie (I) Pvt Ltd.
192	Pentratve BI-Polar Corrosion Inhibiting Admixture	AC-Corroguard	Apple Chemie (I) Pvt Ltd.
193	Micro Silica Additives (Pozzolanic Material)	AC- Microsil-Si9+	Apple Chemie (I) Pvt Ltd.
194	Cystal Line water proofing admixture (PRAH Based)	AC- Crystacrete	Apple Chemie (I) Pvt Ltd.
195	Curing compounds	AC- Cure R- (M)	Apple Chemie (I) Pvt Ltd.
196	PU Sealant	AC- Proseal 400	Apple Chemie (I) Pvt Ltd.

Sl. No.	Material Description	Brand	Makes *
197	Coal Tar Epoxy coating	AC- DUR-CT(S)	Apple Chemie (I) Pvt Ltd.
198	Ploy Urethane water proofing	AC-1K-PU	Apple Chemie (I) Pvt Ltd.
199	Wireless Building Management System	Protech	M/s Protech Technologies
200	Rapicon wall panel	Everest	M/s Everest Industries Ltd.

Note:

1. The Makes / Brands for the materials approved at a later date in addition to above list by the competent authority during the progress of work can also be used.
2. If any new brands of material which are in the approved list and not time tested previously shall be got tested by the Engineer-in-charge personally from the approved reputed laboratories before allowing such products using in the work. The testing charges shall be borne by the agencies only.

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PART - C

Schedule of Quantities

SCHEDULE OF QUANTITIES

Name of Work: Construction of New Compound wall for the field office of Directorate General of Mines safety at SPSR Nellore, A.P

SI No.	Description of items	Quantity	Unit	Rate	Amount
1	2	3	4	5	6
1	SH 1: EARTH WORK				
1.1	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
1.1.1	All kinds of soil	756	Cum	283.66	2,14,447
1.1.2	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 m and lift up to 1.5 m.	603	Cum	213.59	1,28,795
2	SH 2: CONCRETE WORK				
2.1	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level -				
2.1.1	1:5:10 (1 cement : 5 coarse sand (zone-III) derived from natural sources : 10 graded stone aggregate 40 mm nominal size derived from natural sources)	37	Cum	7103.7	2,62,837
3	SH 3: RCC WORK				
3.1	Providing and laying in position specified grade of reinforced cement concrete, excluding the cost of centering, shuttering, finishing and reinforcement - All work up to plinth level :				

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3.1.1	1:1.5:3 (1 cement : 1.5 coarse sand (zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	140	Cum	9857.7	13,80,078
3.2	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. above plinth level up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement :				
3.2.1	1:1.5:3 (1 cement : 1.5 coarse sand(zone-III) derived from natural sources : 3 graded stone aggregate 20 mm nominal size derived from natural sources)	44	Cum	11827	5,20,393
3.3	Centering and shuttering including strutting, propping etc. and removal of form for all heights:				
3.3.1	Foundations, footings,bases of columns,etc for mass concrete.	489	Sqm	427.35	2,08,974
3.3.2	Lintels, beams,plinth beams, girders, bressumers and cantilevers.	321	Sqm	802.5	2,57,603
3.3.3	Columns, Pillars, Piers, Abutments, Posts and Struts	462	Sqm	1047.6	4,83,987
3.4	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
3.4.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	13,950	Kg	117.53	16,39,544
3.5	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
3.5.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	3,475	Kg	117.53	4,08,417
4	SH:4 BRICK WORK				
4.1	Brick work with non modular fly ash cement bricks conforming to IS:12894 of class designation 7.5 (7.50 N/mm ² average compressive strength) in foundation and plinth in:				

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4.1.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	125	Cum	7772.4	9,71,555
4.2	Brick work with non modular fly ash cement bricks conforming to IS:12894, class designation 7.5 (7.50 N/mm ² average compressive strength) average compressive strength in super structure above plinth level upto floor V level in :				
4.2.1	Cement mortar 1:6 (1 cement : 6 Coarse sand)	32	Cum	9538.2	3,05,222
5	SH:5 STEEL WORK				
5.1	Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as per required -				
5.1.1	.In stringers, treads, landings etc. of staircase including use of chequered plate wherever required, all complete.	1,163	Kg	134.69	1,56,644
5.1.2	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	3,470	kg	188.09	6,52,672
6	SH:6 FINISHING				
6.1	12 mm cement plaster of mix :				
6.1.1	1:6 (1 cement : 6 fine sand)	628	Sqm	363.27	2,28,134
6.2	15 mm cement plaster on the rough side of single or half brick wall of mix :				
6.2.1	1:6 (1 cement : 6 fine sand)	628	Sqm	417.38	2,62,115
6.3	6mm cement plaster of mix				
6.3.1	1:3 (1 cement : 3 fine sand)	234	Sqm	327.42	76,616
6.4	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade:				
6.4.1	New work (Two or more coats applied @ 1.43 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	1,490	Sqm	186.46	2,77,825
6.5	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
6.5.1	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	540	Sqm	246.56	1,33,142

7	SH 7: DISMANTLING AND DEMOLISHING				
7.1	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.				
7.1.1	In cement mortar	219	Cum	2245.1	4,91,681
7.2	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	219	Cum	287.64	62,993
8	SH 8: ROAD WORK				
8.1	Providing and fixing concertina coil fencing with punched tape concertina coil 600 mm dia 10 metre openable length (total length 90 m), having 50 nos rounds per 6 metre length, upto 3 m height of wall with existing angle iron 'Y' shaped placed 2.4m or 3.00 m apart and with 9 horizontal R.B.T. reinforced barbed wire, stud tied with G.I. staples and G.I. clips to retain horizontal, including necessary bolts or G.I. barbed wire tied to angle iron, all complete as per direction of Engineer-in-charge, with reinforced barbed tape(R.B.T.) / Spring core (2.5mm thick) wire of high tensile strength of 165 kg/ sq.mm with tape (0.52 mm thick) and weight 43.478 gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately)	292	Metre	409.53	1,19,583
	Total				92,43,257

Contractor

Executive Engineer



Central Public Works Department

NIT No. 11/EE/Tirupati/e-Tender/2026-27

Name of Work: Construction of New Compound wall for the field office of Director General of Mines safety at SPSR Nellore, A.P

ABSTRACT OF COST

Name of the Contractor					
Sl. No.	Name of Component	Estimated Cost	Percentage above or below the estimated cost	% in Figures	Total Cost
	Civil component	Rs.92,43,257/-			
	Grand Total	Rs.92,43,257/-			

Important Note:

1. The estimated cost of tender has been worked out by taking into consideration the cost index of **Nellore District** for DSR 2023 (Civil) items and market rates for NSR items; therefore, are adjusted accordingly.
2. The tenderer is to quote a single consolidated percentage only at par/above/below estimated cost to cover all the rates of all the items under the schedule of composite tender.
3. If the percentage quoted is not clear, or if the rate is not quoted in percentage, the tender shall be treated as invalid and will not be considered as lowest tenderer.

Contractor

Executive Engineer