



**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT**



**Office of the Chief Engineer-Bhubaneswar
Nirman Bhawan, CPWD, Pokhariput, Bhubaneswar.**

NOTICE INVITING TENDER

NIT No: 17/NIT/CE/CPWD/BBSR/2026-27

Name of the Work: Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur, Mayurbhanja district ,Odisha.

Estimated Cost:	Civil	: Rs.	21,83,63,033/-
	E&M	: Rs.	7,77,02,780/-
	Total	: Rs.	29,60,65,813/-

Earnest Money: Rs.39,60,658/- (to be refunded after receiving the Performance Guarantee).

**Last date and time
of Online submission of bid :** **07.08.2026 upto 15:00 Hrs.**

*** To be filled by EE-II, CPWD, Bhubaneswar**

NOTICE INVITING TENDER
NIT No.: 17/NIT/CE/CPWD/BBSR/2026-27

Name of Work: Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur, Mayurbhanja district ,Odisha.

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Certified that this N.I.T. amounting to Rs. 29,60,65,813/- (Civil Rs. 21,83,63,033/- + Electrical Rs.7,77,02,780/-), contains 321 pages only in chronological order.

Assistant Engineer (P)(C)
O/o CE,CPWD, BBSR

Assistant Engineer (P)(E)
O/o CE,CPWD, BBSR

Executive Engineer (C)
O/o CE, CPWD, BBSR

Approved by:

Chief Engineer-Bhubaneswar

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

NOTICE INVITING e-TENDER

The Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar (Odisha) (E-mail: eebcd2bhubaneswar@gmail.com, eebcd2.od@nic.in, Landline No.0674-2352941) on behalf of the President of India invites online **percentage rate bids** from CPWD enlisted contractors of appropriate **Class or above** in **Buildings & Roads** category for the following work:

Name of Work: Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur, Mayurbhanja district ,Odisha.

NIT No.: **17/NIT/CE/CPWD/BBSR/2026-27.**

EstimatedCost put to Tender	Rs. 29,60,65,813/- (Civil Rs. 21,83,63,033/- + Electrical Rs. 7,77,02,780/-)
Earnest Money	Rs.39,60,658/- (to be refunded after receiving the Performance Guarantee).
Period of Completion	08 Months
Last date & time of uploading/submission of Bid, EMD, copy of receipt for deposition of original EMD and other documents as specified in Notice Inviting e-Tender.	07.08.2026 upto 03.00 P.M.

The tender forms and other details can be obtained from the website <https://etender.cpwd.gov.in>. Further modification of change of dates, if any, can be seen in the above stated tender web site.

Executive Engineer Bhubaneswar-II,
CPWD, Bhubaneswar (Odisha)

*** To be filled by EE-II, CPWD, Bhubaneswar**

Correction – Nil, Insertion – Nil, Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)
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PART A

GENERAL INFORMATION

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

INFORMATION & INSTRUCTIONS FOR BIDDERS FOR e-TENDERING

The **Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar (Odisha)** (E-mail: eebcd2bhubaneswar@gmail.com, eebcd2.od@nic.in, Landline No.0674-2352941) behalf of the President of India invites online **percentage rate bids** from CPWD enlisted contractors of appropriate **class or above** in **Buildings & Roads category** for the following work:

NIT No	17/NIT/CE/CPWD/BBSR/2026-27
Name of Work	Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur, Mayurbhanja district ,Odisha.
Location	IGNOU Regional Centre at Rairangpur, Odisha.
Estimated cost put to bid	Rs. 29,60,65,813/- (Civil Rs. 21,83,63,033/- + Electrical Rs.7,77,02,780/-)
Earnest Money	Rs.39,60,658/- (to be refunded after receiving the Performance Guarantee)
Period of Completion	08 Months
Last date & time of uploading/submission of Bid, EMD, copy of receipt for deposition of original EMD and other documents as specified in Notice Inviting e-Tender.	03:00 PM on 07.08.2026
Time and date of opening of financial bid	03:30 PM on 07.08.2026
Submission of hard copies of EMD.	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 (including NIT issuing EE/AE). The EMD receiving Executive Engineer shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (as per CPWD-6 for e-tendering) uploaded by tender inviting EE in the NIT. Scanned copy of EMD including the receipt of deposition of EMD to also be uploaded to the e-tendering website by the intending bidder up to the specified bid submission date and time.
Enlistment order, Affidavit, Undertaking and other Documents to Division Office by the Lowest Tenderer.	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.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

*** To be filled by EE-II, CPWD, Bhubaneswar**

1. Intending bidders are eligible to submit the bid provided they have definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below: (This is not applicable for CPWD enlisted contractors of appropriate **Class** or above in Buildings & Roads category).
2. Should have enlistment in CPWD in appropriate **Class** or above Buildings & Roads category.
3. 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.
4. This information and instructions for bidders posted on website shall form part of bid document.
5. The bid document consisting of indicative architectural plans, specifications, schedule of quantities of items to be executed, schedule of stages for payment and the set of terms & conditions of the contract to be complied with and other necessary documents can be seen and downloaded free of cost from website <https://etender.cpwd.gov.in> or <https://eauction.cpwd.gov.in> as applicable.
6. The bid can only be submitted after deposition of original EMD either in the office of Executive Engineer & Senior Manager 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, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribe) issued by a Commercial Bank towards EMD in favour of Executive Engineer as mentioned in NIT, receipt for deposition of original EMD to division office of any Executive Engineer (**including NIT issuing EE/AE**), CPWD and other documents as specified.
7. Those contractors not registered on the website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.
8. The intending bidder must have valid **class-III** digital signature to submit the bid.
9. On opening date, the contractor can login and see the bid opening process. After opening of bids, he will receive the competitor bid sheets.
10. Contractor can upload documents in the form of **JPG** format and **PDF** format.
11. Contractor must ensure to quote rate of each item. The column meant for quoting rate in figures appears in pink colour and the moment rate is entered, it turns skyblue. In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "**0**". Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such item shall be treated as "**0**" (**Zero**).
However, if a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section/sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
12. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion.
13. The contractor submitting the bid should read the schedule of quantities, Special conditions, additional conditions, particular specifications and other terms and conditions given in the NIT and drawings. The bidder should also read the General Conditions of Contract for CPWD Works 2023 Construction work with all correction slips issued up to the last date for submission of bid, which is available as Government of India Publication. However, provisions included in the bid document shall prevail over the provisions contained in the standard form. The set of drawings and NIT will be available with the **Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar**. The contractor should also visit the site of work and acquaint himself with the site conditions before tendering. The following conditions, which already form part of the tender conditions, are specially brought to his notice for compliance while filling the tender. They are requested to comply with the following instructions.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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EE(C)

14. Tenders with any condition including that of conditional rebates shall be rejected. Such tenders shall not be entered in the tender opening register at the time of opening of tender.
15. The successful tenderer shall be required to submit a **Performance Guarantee of 5% (Five Percent)** of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher), 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 of the tendered amount within 7 days of issue of letter of intent. This period can be further extended by Engineer-in-Charge upto a maximum period of 7 days on the written request of the contractor subject to payment of late fee @ 0.1% per day of Performance Guarantee amount.
16. GST on all materials as well as GST on Work Contract etc., or any other taxes applicable in respect of this contract shall be payable by the Contractor. Percentage rate quoted by him shall be inclusive of such taxes, levies etc and Government will not entertain any claim for reimbursement whatsoever in respect of the same. The percentage rates of the contract shall be inclusive of all taxes and levies and nothing extra shall be paid. Further the percentage rate quoted by the contractor shall be inclusive of labour welfare cess and the same shall be recovered from the contractors' bills and will be remitted by the department.
17. Applicants are advised to keep visiting the <https://etender.cpwd.gov.in> or <https://eauction.cpwd.gov.in> web-sites as applicable 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.
18. The Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribe) issued by a Commercial Bank drawn in favour of **Executive Engineer, BCD-II, CPWD, Bhubaneswar** shall be scanned and uploaded to the e-tendering website within the period of bid submission.

The original EMD should be deposited either in the office of Executive Engineer inviting bids or Division office of any Executive Engineer, 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.
19. 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'.
20. The document to be physically submitted shall be page numbered and each page shall be signed by authorized signatory.
21. 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 of resources in terms of materials, labour, plant & machinery needed for required pace of progress for timely completion of work.
22. If any information furnished by the applicant is found to be incorrect at a later stage, he shall be liable to be debarred from tendering/taking up of works in CPWD. The department reserves the right to verify the particulars furnished by the applicant independently.
23. **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 at Bhubaneswar only.**

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

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

- (i) Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (as prescribe) issued by a Commercial Bank against **EMD in favour of Executive Engineer, BCD-II, CPWD, Bhubaneswar.**
- (ii) Copy of receipt for deposition of original EMD issued from division office of any Executive Engineer, (including NIT issuing EE/AE), CPWD.
- (iii) Enlistment Order of the Contractor.
- (iv) Valid GST Registration for work contract, if already obtained by the bidder.

If the bidder has not obtained GST registration as applicable, then he shall scan and uploaded following undertaking along with bid documents as given below:

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 of 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.

- (v) Undertaking on structural stability and soundness as per prescribed format **Form 'F'**.
- (vi) Certificate of **ERP** Training.
- (vii) Contractor Contact Details.

Note: The Postal address of Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar may be noted as below for correspondence and submission of Physical documents.

**O/o The Executive Engineer Bhubaneswar-II,
CPWD, Nayapali, Bhubaneswar .**

**Executive Engineer Bhubaneswar-II
CPWD, Bhubaneswar**

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

SECTION – I**BRIEF PARTICULARS OF THE WORK**

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

Sr. No.	Name of Work	Estimated Cost	Period of completion
1.	“Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur , Mayurbhanja district ,Odisha.”	Rs.29,60,65,813.00	08 Months

2. The work is situated at **under jurisdiction of EE-II, CPWD, Bhubaneswar (Odisha).**

3. **Features:**

- 3.1 **The following provisions have been considered in this estimate:**

CIVIL WORK**A OFFICE REGION CENTER BUILDING:****a) FOUNDATION****(Office Building) :**

1. Provision of RCC isolated foundation of grade M-30 has been considered for the REGION CENTER Building. The building shall be constructed for G+3 floor with floor height is 3.6 m on Ground Floor and all other floors are 4.2 meter

b) SUPER STRUCTURE**(Office Building) :**

1. Structure: R.C.C framed G+3 of grade M-30 with floor height 4.2 mtr . The total plinth area of the school building is 4870.00 Sqm. Filler walls will be with fly Ash bricks in cement mortar 1:6.
2. Internal partitions: Half Brick work with fly ash bricks in cement mortar 1:4.

c) DOORS & WINDOWS (Building) :

1. Door Frames and Shutters: 35 mm thick flush doors shutters
2. FRP door Frame and shutter for toilet doors
3. Window: - UPVC windows with M.S grill.
4. Fittings: SS fittings.

d) FLOORING (Building) :

1. Double charged Vitrified tile flooring of size 600X600 mm:-Office and classrooms 600*1200 mm tiles considered in the wall cladding of dining& class rooms.
2. 18 mm granite flooring in corridors with 1000 mm dado
3. Ceramic glazed wall/ floor tiles in toilets
4. Polished Granite stone slab in window sills.
5. Chequerred precast cement concrete tile flooring in parking area
6. Granite flooring considered in the stair area and all floors of corridors

e) RAILING :

Stainless Steel Railing of SS-304 grade in office building staircase and ramp.

f) ROOFING :

1. Roof treatment: - The roof treatment shall be of integral water proofing with necessary rain water drainage system.
Grading considered on top of intergral waterproofing.

g) FINISHING :

1. External: premium acrylic smooth exterior paint.
2. Internal: Premium acrylic emulsion paint over putty.
3. Painting: Doors & windows grill– synthetic enamel paint of approved shade.

h) ROAD WORK :

1. C.C. pavement of mix M-25 with vacuum dewatering concrete of thickness 150mm shall be provided with factory made M-25 grade of cement concrete for the road works.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

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EE(C)

i) **SANITARY & WATER SUPPLY :**

1. Hubless pipes of 100mm dia for sanitary lines.
2. CPVC pipes for water supply.
3. Fittings: CP brass fittings.
4. White vitreous china W.C pans, basins etc. shall be provided at toilets.

j) **DRAINAGE :**

1. 150mm Dia. HDPE of grade SN4 pipes with intermediate manholes and Septic tank of RCC grade M-30.

k) **Development of site & Bulk Services (Civil):**

1. Provision of 1 no deep tube well.
2. 1 no. septic tank of 200 users with soak pit.
3. Under Ground Sump 50,000 liter capacity & pump house.
4. Site development for building- filling with available earth.
5. Storm water drainage system with P.C.C. and R.C.C of grade M-25.

l) **Boundary Wall and retaining wall: -**

1. Boundary wall of length 350.00 mtr is taken with 0.60 mm MS grill on its top at three sides excluding front side. With 2 (two) nos entry & exist MS gates.

m) AUDITORIUM

1. Wall Paneling with grooved wood panels considered in conference hall & in the auditorium walls
2. Wall Paneling with calcium/magnesium oxide wood fiber board in Auditorium.
3. Acoustically treated fire doors considered Auditorium And Green Room.
4. Teak wood stage flooring considered on stage
5. Fully/Semi-Perforated acoustic GRG (Glass Fiber Reinforced Gypsum) ceiling considered in the Auditorium.

ELECTRICAL WORK

1. Wiring will be carried out by FRLS PVC insulated copper wire in PVC conduit of suitable size etc. as reqd.
2. Provision has been kept for power points, light point, fan point etc.
3. Provision for LED fittings, ceiling fan, exhaust fan has been kept in this estimate.
4. Provision for MCB DB with suitable MCB, rising main & various type panel has been kept in this estimate.
5. Provision of GI plate, Copper plate & GI pipe earthing and lightening arrester has been kept in this estimate.
6. Provision for supply and laying of various cable for service connection has been kept in this estimate.
7. Provision of SITC of 400 KVA Sub-station & 125 KVA DG Set with AMF panel has been kept in this estimate.
8. Provision for SITC CCTV, Networking, Conference System & AV system has been kept in this estimate.
9. Provision of VRF type AC System & Fire alarm system & PA system has been kept in this estimate.
10. Provision for Wet riser with Sprinkler system has been kept in this estimate.
11. Provision for SITC of 20 Passenger Bed Lift has been kept in this estimate.
12. Provision of emergency light & illumination signage system has been kept in this estimate.
13. Provision of street lighting system also has been kept in this estimate.
14. Provision of Solar PV power generation has been kept in this estimate.

Work shall be executed according to General Conditions of Contract 2023 Construction Work Form 7 for Central P.W.D. Works as amended/corrected up to the last date of submission of bids

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT
NOTICE INVITING e-TENDER**

The Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar (Odisha) (E-mail: eebcd2bhubaneswar@gmail.com, eebcd2.od@nic.in, Landline No.0674-2352941) behalf of the President of India invites online **Percentage Rate bids** from CPWD enlisted contractors of appropriate **Class or above in Buildings & Roads category** for the following work:“ **Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur , Mayurbhanja district ,Odisha.**”

- 1.0 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. 29,60,65,813/-** (Civil Rs. 21,83,63,033/- + Electrical Rs. 7,77,02,780/-). This estimated cost, however, is given merely as a rough guide.
- 1.2 The authority competent to approve NIT for the combined cost and belonging to the major discipline will consolidate NITs for calling the bids. He will also nominate Division which will deal with all matters relating to the invitation of bids.
2. Agreement shall be drawn with the successful Tenderer on prescribed Form No. CPWD 7 which is available at Govt. of India Publication and also available on website www.cpwd.gov.in. Tenderer shall quote his Percentage rate 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 **08 Months** from the date of start as defined in schedule ‘F’ or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
4. The site for the work will be made available in phased manner.
5. The tender document consisting of 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 free of cost from website <https://etender.cpwd.gov.in> or <https://eauction.cpwd.gov.in> as applicable.
6. After submission of the tender the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.
7. While submitting the revised bid, contractor can revise the percentage rate any number of times but before last time and date of submission of tender as notified.
8. Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker’s Cheque or Bank Guarantee (as prescribe) issued by a Commercial Bank (**drawn in favour of Executive Engineer, BCD-II, CPWD, Bhubaneswar**) shall be scanned and uploaded to the e-Tendering website within the period of bid submission. The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, 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) uploaded by tender inviting EE in the NIT.

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

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

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

9. Copy of Enlistment Order 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 physically by the lowest bidder only within a week in the office of tender opening authority.

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

10. The bid submitted shall become invalid if:
- The bidder is found ineligible.
 - The bidder does not upload all the documents (**including GST registration**) as stipulated in the bid document.
 - If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest tenderer in the office of tender opening authority.
 - If a tenderer does not quote any percentage above/ below on the total amount of the tender, the tender shall be treated as invalid and will not be considered as lowest.
 - Bids on which any of the prescribed conditions is not fulfilled or any condition including that of conditional rebate is put forth by the bidders.
 - The lowest bidder does not deposit all the original documents (except those original documents already submitted) within a week **opening of tender**.
 - The Bidder does not furnish the Performance Guarantee of work as per NIT condition.
11. **Performance Guarantee**
- The Contractor whose tender is accepted, will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in Schedule 'E' and within the period specified in Schedule F. This guarantee shall be in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee of any Commercial Bank.
 - 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 the 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.
12. 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 PFO, 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 the period specified in Schedule F.
13. 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,

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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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 local conditions and other factors having a bearing on the execution of the work.

14. 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.
15. 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 reject.
16. **In case of Non submission of Hard copies within stipulated time by the lowest bidder and or 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.**
17. 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.
18. 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 Chief 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.
19. 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 at 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.
20. **The bids for the work shall remain open for acceptance for a period of **Thirty days (30)** from the date of opening of bids, Further**
 - a. If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department within 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - b. If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.

- c. In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.
21. This notice inviting Bid shall form a part of the contract document. The successful bidder/contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:-
 - (a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of submission of bid and acceptance thereof together with any correspondence leading thereto.
 - (b) Standard C.P.W.D. Form 7 or other Standard C.P.W.D. Form as applicable.
 22. **For Composite Bids.**
 - a. The Executive Engineer in charge of the major component will call bids for the composite work. The cost of bid document and Earnest Money will be fixed with respect to the combined estimated cost put to tender for the composite bid.
 - b. The bid document will include following three components:

Part A:- CPWD-6, CPWD-7/8 including schedule A to F for the major component of the work, Standard General Conditions of Contract for CPWD 2023 Construction work as amended/ modified up to

Part B:- General / specific conditions, specifications and schedule of quantities applicable to major component of the work.

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

- c. The bidders must associate himself, with agencies as per NIT conditions.
- d. The eligible bidders shall quote rates for all items of major component as well as for all items of minor components of work.
- e. After acceptance of the bid by competent authority, the EE in charge of major component of the work shall issue letter of award on behalf of the President of India. After the work is awarded, the main contractor will have to enter into one agreement with EE incharge of major component and has also to sign two or more copies of agreement depending upon number of EE's/DDH incharge of minor components. One such signed set of agreement.

Shall be handed over to EE/DDH incharge of minor component(s). EE of major component will operate **Part A** and **Part B** of the agreement. EE/DDH incharge of minor component(s) shall operate **Part C** alongwith **Part A** of the agreement.

- f. Entire work under the scope of composite bid including major and all minor components shall be executed under one agreement.
- g. Security Deposit will be worked out separately for each component corresponding to the estimated cost of the respective component of works.
- h. The main contractor has to associate agencies for specialized components (s) conforming to eligibility criteria as defined in the bid document and has to submit detail of such agency(s) to Engineer-in-charge of relevant component(s).within prescribed time. Name of the agency(s) to be associated shall be approved by Engineer-in-charge of relevant component(s).

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

- i. In case the main contractor intends to change any of the above agency/agencies during the operation of the contract, he shall obtain prior approval of Engineer-in-charge of relevant specialized component(s).
- j. The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.
- k. The main contractor has to enter into MoU with agencies contractor(s) associated by him. Copy of such MoU shall be submitted to EE/ DDH in charge of each relevant component as well as to EE incharge of major component. In case of change of associate contractor, the main contractor has to enter into agreement with the new contractor associated by him.
- l. Running payment for the major component shall be made by EE of major discipline to the main contractor. Running payment for minor components shall be made by the Engineer- in-charge of the discipline of minor component directly to the main contractor.
- m. The composite work shall be treated as complete when all the components of the work are complete. The completion certificate of the composite work shall be recorded by Engineer-in-charge of major component after record of completion certificate of all other components.
- n. Final bill of whole work shall be finalized and paid by the EE of major component.
- o. Engineer(s) in charge of minor component(s) will prepare and pass the final bill for their component of work and pass on the same to the EE of major component for including in the final bill for composite contract

**Executive Engineer Bhubaneswar-II,
CPWD, Bhubaneswar
For & on behalf of President of India**

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Information and instructions for Executive Engineer for e-tendering.

- (i) The Executive Engineer of all divisions **including NIT issuing division/sub division** of CPWD should receive the original EMD for tender of other division.
- (ii) The NIT approving authority /EE at the time of issue of NIT shall also fill and upload the following prescribed format of receipt of deposition of original EMD along with NIT.
- (iii) The Executive Engineer receiving EMD in original form shall examine the EMD deposited by the bidder and shall issue a receipt of deposition of earnest money to the agency in a given format uploaded by tender inviting EE. The receipt can also may be issued by the AE(P)/AE/AAO.
- (iv) The Executive Engineer receiving original EMD shall also intimate tender inviting Executive Engineer about deposition of EMD by the agency by email/fax/telephonically.
- (v) The original EMD receiving Executive Engineer shall release the EMD after verification from the e-tendering portal website (Error! Hyperlink reference not valid. free view> advance search>awarded tenders) that the particular contractor is not L-1 tenderer and work is awarded.
- (vi) The tender inviting Executive Engineer will call for original EMD of the L-1 tender from EMD receiving Executive Engineer immediately.
- (vii) The earnest money given by all the tenders except the lowest tenderer should be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier.

RECEIPT OF DEPOSITION OF ORIGINAL EMD

(Receipt No.date.....)

Name of Work: Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur , Mayurbhanja district ,Odisha.

1.	NIT No.:	17/NIT/CE/CPWD/BBSR/2026-27
2.	Estimated Cost:	Rs. 29,60,65,813/-
3.	Amount of Earnest Money Deposit:	Rs.39,60,658/-
4.	Last date of submissionof bid	03:00 PM on 07.08.2026

1.	Name of the 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/AE(P)/AE/AAO)
along with office stamp**

(# To be filled by EMD receiving EE or NIT issuing EE/AE as the case may be)

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

**GOVERNMENT OF INDIA
CENTRAL PUBLIC WORKS DEPARTMENT**

State: Odisha

Zone: SDG-Kolkata

Branch: B & R

Division: Executive Engineer BBSR -II,

COMPOSITE PERCENTAGE RATE TENDER & CONTRACT FOR WORKS

Percentage Rate Tender for the work of “**Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur, Mayurbhanja district ,Odisha.**”

- (i) To be uploaded upto **03:00 PM** on **07.08.2026** at <https://etender.cpwd.gov.in> or <https://eauction.cpwd.gov.in> as applicable.
- (ii) Financial bid to be opened in presence of tenderers who may be present at **03:30 PM** on **07.08.2026** in the office of Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar (Odisha).

TENDER

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

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

We agree to keep the tender open for **Thirty (30) days** from the due date of its opening and not to make any modification in terms & conditions.

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

A copy of earnest money deposit receipt prescribed amount deposited in the form Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker’s Cheque or Bank Guarantee (as prescribe) issued by a Commercial Bank is scanned and uploaded. 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, be at liberty to forfeit the said earnest money absolutely. Further, if I/We fail to commence work as specified, I/We agree that President of India or the successors 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 of the tender form.

Further, I/We agree that in case of forfeiture of performance guarantee as aforesaid I/We shall be debarred for participation in the retendering process of the work.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

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 start of work, the Engineer-in- Charge shall be free to forfeit entire amount of Performance Guarantee.

I/We hereby declare that I/We shall treat the tender documents drawings and other records connected with the work as secret/confidential documents and shall not communicate information/ derived there from to any person other than a person to whom I/We, am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the state.

Dated.....**

Signature of the Contractor

Witness:-----**

Postal Address-----**

Address:-----

E-MAIL-----

Occupation:-----

FAX-----

TelephoneNo -----**

** To be filled by contractor/witness.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

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 of the President of India for a sum of Rs. ----- (Rs. -----
-----).

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

- a)
- b)
- c)

For & on behalf of President of India

Signature.....

Designation.....

Date.....

Correction – Nil, Insertion – Nil, Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)
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PROFORMA OF SCHEDULES

SCHEDULE 'A'

Schedule of quantities

Schedule of Quantities for **Civil and Electrical** Page No **147 to 275**

SCHEDULE 'D' Extra schedule for specific requirements/ document for the work, if any.	Not Applicable
SCHEDULE 'E' Reference to General Conditions of Contract	General Conditions of Contract-2023 Construction Work as modified & corrected upto the last date of submission of the tender.
Name of Work	Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur , Mayurbhanja district ,Odisha.
Estimated cost of work	Rs. 29,60,65,813/- (Civil Rs. 21,83,63,033/- + Electrical Rs. 7,77,02,780/-)
Earnest money	Rs.39,60,658/- (to be returned after receiving Performance Guarantee)
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.
Security deposit	2.5% of Tendered Value
SCHEDULE 'F'	
GENERAL RULES & DIRECTIONS: Officer inviting tender	Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar (Odisha) or successor thereof.
Definitions:	
Engineer-in-Charge (Major Component)	Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar (Odisha) or successor thereof.
Engineer-in-Charge (Minor Component)	Executive Engineer Electrical Bhubaneswar, CPWD, Bhubaneswar (Odisha) or successor thereof.
Accepting Authority	Chief Engineer, CPWD, Bhubaneswar or successor thereof.
Percentage on cost of materials and labour to cover all overheads and profits:	15%
Standard Schedule of Rates	1.DSR-2023 (Civil works) plus cost index and correction slip(s) issued upto the last date of submission of Bid. 2.DSR- 2025 (E&M) plus cost index with correction slip(s) issued upto the last date of submission of Bid. 3.Market Rates for Non DSR Items.
Department	Central Public Works Department.
Standard CPWD Contract Form	General Conditions of Contract-2023 Construction Work, CPWD Form 7 as modified & corrected upto the last date of submission of the tender.
Clause 1	

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

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(i)Time allowed for submission of Performance Guarantee, Programme chart (time and progress) and applicable labour licenses, registration with EPFO, ESIC, action Plan for Green Rating Certification, 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 provided in (i) above	7 days		
Clause 2			
Authority for fixing compensation under clause 2	Chief Engineer, CPWD, Bhubaneswar or successor thereof.		
Clause 5			
Number of days from the date of issue of letter of acceptance for reckoning date of start	10 days		
Table of Milestones			
No.	Description	Time allowed in days (From stipulated date of start)	Amount to be withheld in case of non-achievement of milestone % of tendered Amount
	Glossary Floor Zero means ground floor Floor 1 means roof slab of ground floor Floor 2 means roof slab of first floor Floor 3 means roof slab of second floor		
1	Civil Work: a. Approval of Design Mix. b. Settingup of Batchmix/RMCplant, Godown, other site Infrastructure, site office, Site Laboratory setup. c. Submission of documents for approval of specialized agency. d. Submission of structural glazing drawing duly approved by NIT /IIT etc as per NIT e. Getting approval of false ceiling, wall panelling& flooring material and order placement. Electrical Works: a. Submission of documents for approval of specialized agency. b. Submission ofmake and models of E&M fittings &equipment such as Lifts, HVAC, Firefighting, Audio Video system, LAN, CCTV & Solar Power etc. for approval. c. Construction and handing over of CPWD Office.	1.0 Months	0.20%
2	Civil Work: a. Structural work up to plinth level of building and boundary walli/c guard room including plinth beam& plinth filling. E & M Works:	2.0 Months	0.50%

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Submission of electrical conduits drawings complete in all respect.		
3	Civil Work: - Completion of RCC work up to & including Floor 1 level slab. - Completion of RCC work above plinth level for boundary wall, guard room. - Submission of site drainage plan for approval. E & M Works: - Order placement of Lift, HVAC, Firefighting, LT Panel, Transformer, DG Set, Rising mains, Audio Visual, Solar plant, light fittings etc.	3.0 Months	0.50%
4	Civil Work: - Completion of RCC work up to & including Floor 2 level slab. - Completion of brick work & internal plaster upto Floor 1. - Completion of brick work & plaster of boundary wall, guard room. - Completion of RCC works of UG Sump, Septic tanks. - Order placement of windows, doors etc.	4.0 Months	0.75%
5	Civil Work: - Completion of RCC work up to & including Floor 3 level slab. - Completion of brick work & internal plaster upto Floor 2. - Completion of flooring on floor 01. - Completion of installation of window grills, Windows, doors on floor 01. - Completion of installation of false ceiling, wall panelling etc. upto floor 01. - Waterproofing of UG Sump & Septic tank. E & M Works: - Conduiting work i/c Db boxes in slabs and walls which are completed. - Installation of firefighting at floor 01. - Installation of all works above false ceiling on floor 01.	5.0 Months	0.75%
6	Civil Work: - Completion of RCC work up to & including Terrace level slab - Completion of brick work & internal plaster upto Floor 03. - Completion of flooring on floor 02. - Completion of installation of window grills, Windows, doors on floor 02. - Completion of installation of false ceiling, wall panelling etc. upto floor 02. - Completion of installation of sanitary ware, cp fittings and all other fixtures upto floor 01. E & M Works: - Conduiting work i/c Db boxes in slabs and walls which are completed. - Installation of firefighting at floor 02. - Installation of all works above false ceiling on floor 02.	6.0 Months	0.75%
7	Civil Work: - Completion of all RCC works of the entire project except road - Completion of brick work & internal plaster upto Terrace floor	7.0 Months	0.75%

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	c. Completion of External plaster of all buildings. d. Completion of flooring on floor 03. e. Completion of installation of window grills, Windows, doors on floor 03. f. Completion of installation of false ceiling, wall panelling etc. up to floor 03. g. Completion of installation of sanitary ware, cp fittings and all other fixtures up to floor 02. h. Completion of frame of structural glazing & glass. i. Completion of construction of sewer lines and stormwater. j. Completion of terrace waterproofing. E & M Works: a. Conduiting work in slabs and walls which are completed. b. Completion of Electrical external works i/c laying all electrical/LAN/ other networks. Order placement of street lighting.		
8	Civil Work: a. Completion of all brick work & internal plaster in all buildings b. Completion of External putty and paint of all buildings c. Completion of flooring i/c waterproofing in sunken on floor 04 d. Completion of installation of sanitary ware, cp fittings and all other fixtures upto floor 03 e. Completion of installation of SS Railing f. Completion of construction of sewer lines and stormwater. g. Completion of all Roads & parking Footpath including paver block. h. Completion of water tanks installation and vertical plumbing. i. Cleaning of entire building and site premises, removal of all debris, waste materials from site. j. Handing over of all infrastructure at site in fully functional condition.	9.0 Months	0.80%
		Total	5%
Time allowed for execution of work:		08 Months	
Authority to decide:			
(i) Authority to convey the decision of shifting of milestone and Extension of time		Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar or successor thereof.	
(ii) Authority to decide rescheduling of milestone and extension of time.		Chief Engineer, CPWD, Bhubaneswar or successor thereof.	
(ii) Shifting of date of start in case of delay in handing over of site		Chief Engineer, CPWD, Bhubaneswar or successor thereof.	
Clause 5 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	*	
Part B	Portions with encumbrances	*	
Part C	Portions dependent on work of other agencies	*	

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Clause 5 Schedule of issue of designs			
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	*	
Part B	Portions with encumbrances	*	
Part C	Portions dependent on work of other agencies	*	
	* To be filled by EE-II, CPWD, Bhubaneswar		
5.4	Recovery per day basis in case of delay in submission of the revised programme	Rs.2500/-	
Clause 6		Electronic Measure Book (EMB) through ERP Portal	
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.272.95 lakh for Civil work and Rs. 97.12 lakh for Electrical works or part thereof as decided by Engineer-in-Charge.	
Clause 7A Whether Clause 7A shall be applicable		Yes Applicable	
Clause 8A Authority to decide compensation on account if contractor fails to submit completion plans.		Engineer-in-Charge	
Clause 10A List of testing equipments to be provided by the contractor at site		Applicable as per Annexure -IV.	
Clause 10 B (ii) Whether clauses 10 B (ii) shall be applicable		Applicable	
Clause 10C (Applicable in only those contracts where clause 10CC is not applicable) Components of labour expressed as percent of value of work		Applicable 25%	
Clause 10CC		Not Applicable	
A. For construction Period			
Relevant component of Material/Labour for price escalation		Percentage of total value of work	
Component of Cement			
Component of Labour			
Civil component of other Construction Materials			
E&M component of construction materials			
Component of POL (Disel)			
Reinforcement steel bars/TMT bars/Structural steels (including strands and cables) component			
Component of Bitumen			
TOTAL			
B. For maintenance period		Not Applicable	
Clause 11			

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Specifications to be followed for execution of work	1. CPWD specification 2019 (Vol-I & Vol.II) with upto date correction slips will be followed in general and where CPWD specification is silent, relevant BIS codes shall be followed. 2. CPWD General Specification for Electrical Works with correction slips issued upto last day of receipt of Bids. a) Part I Internal & Part-II External- 2023. b) Part-III-Lift & Escalators - 2003 . c) Part-IV Sub Station – 2013 d) Part V Wet Riser & Sprinkler Systems – 2020 e) Part VI Fire Detection and Alarm System – 2018 f) Part VII D.G. Sets - 2013 g) Part VIII Gas Based Fire Extinguishing System 2013. h) HVAC - 2024.
Building information model (BIM) is applicable and BIM professional to be deployed by contractor	NO
Clause 12	
Type of work	Construction Work
12.2(c) Deviation limit beyond which clauses 12.2(c) shall apply for building work. (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). (ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items.	100%
Clause 16 Competent authority for deciding reduced rates.	Chief Engineer, CPWD, Bhubaneswar or successor thereof.
Clause 18 List of mandatory machinery, tools & plants to be deployed by the contractor at site.	Applicable as per Annexure -V.
Clause 19	
Clause 19 C	Engineer -in- Charge
Clause 19 D	Engineer -in- Charge
Clause 19 G	Engineer -in- Charge
Clause 19 K	Engineer -in- Charge
Clause 25	
(i) Conciliator	SDG (Kolkata).
(ii) Arbitrator Appointing Authority	Chief Engineer, CPWD, Bhubaneswar.
(iii) Place of Arbitration	To be decided by Arbitrator in consultation with both the parties.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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Clause 32						
Requirement of technical representative(s) and recovery rate (Civil & Electrical)						
Sl. No.	Minimum Qualification of Technical Representative	Designation of Technical Staff	Minimum experience (Years)	Number (of major + minor component)	Rate at which recovery shall be made from the contractor in the event of not fulfilling provision of clause 32	
					Figures	Words
1.	Graduate Engineer	Project Manager	20 (and having experience of one similar nature of work)	1	Rs.60,000/- per month	Rupees Sixty Thousand per month.
2.	Graduate Engineer	Deputy Project Manager	12 (and having experience of one similar nature of work)	1	Rs.40,000/- per month	Rupees Forty Thousand per month.
3.	Graduate Engineer Or Diploma Engineer	Project/ Site Engineer	5 Years or 10 Years Respectively	1 + 1	Rs.25,000/- per month	Rupees Twenty Five Thousand per month.
4.	Graduate Engineer Or Diploma Engineer	Project Planning/quality/billing Engineer	2 Years or 5 Years Respectively	1 + 1	Rs.15,000/- per month	Rupees Fifteen Thousand per month.

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

Diploma holder with minimum 10 years relevant experience with a reputed construction company 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.

Minimum recovery for not deploying Building Information Model (BIM) professional shall be Rs. Two lac per month or as mentioned above, whichever is higher – (applicable for this work).

Clause 38			
(i)	(a)	Schedule/statement for determining theoretical quantity of cement & bitumen on the basis of “Delhi Schedule of Rates 2021 with upto date correction slips issued upto previous day of last date of submission of tender.	
(ii)		Variations permissible on theoretical quantities:	
	(a)	Cement for works with estimated cost put to tender more than Rs.25 lakh.	2% plus/ minus
	(b)	Bitumen all works	2.5% plus only and nil on minus side
	(c)	Steel reinforcement and structural steel sections for each diameter, section and category	2% plus/ minus
	(d)	All other materials.	Nil

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

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EE(C)

Sl. No	Description of item	Rates in figure and words at which recovery shall be made from the Contractor	
		Excess beyond permissible variation	Less use beyond the permissible variation
1	Cement (PPC)	Not Applicable	Not Permitted
2	Reinforcement bars(TMT) (a)Primary Producer	Not Applicable	Not Permitted
3	Structural steel	Not Applicable	Not Permitted

**Executive Engineer Bhubaneswar- II,
CPWD, Bhubaneswar**

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

ANNEXURE -I

On non judicial stamp paper of minimum Rs. 100.

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

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

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

OR**

Whereas the Executive Engineer (name of division)CPWD on behalf of the President of India (hereinafter called "The Government") has entered into an agreement bearing number with(name and address of the contractor) (hereinafter called "the Contractor") for execution of work (name of work) The Government has further agreed to accept an irrevocable Bank Guarantee for Rs. (Rupees only) valid upto (date)..... as **Performance Guarantee/Security Deposit/Mobilization Advance** from the said Contractor for compliance of his obligations in accordance with the terms and conditions of the agreement.

- We, (indicate the name of the bank) (herein after referred to as "the Bank"), hereby undertake to pay to the Government an amount not exceeding Rs (Rupees only) on demand by the Government within 10 days of the demand.
- We, (indicate the name of the Bank), do here by undertake to pay the amount due and payable under this guarantee without any demur, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs (Rupeesonly).
- We, (indicate the name of the Bank) , further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor in any suit or proceeding pending before any Court or Tribunal, our liability under this Bank Guarantee being absolute and unequivocal. The payment so made by us under this Bank Guarantee shall be a valid discharge of our liability for payment there under and the contractor shall have no claim against us for making such payment.
- We, (indicate the name of the Bank), further agree that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation here under to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor and to

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said contractor or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. We, (indicate the name of the Bank), further agree that the Government at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor at the first instance without proceeding against the contractor and notwithstanding any security or other guarantee the Government may have in relation to the Contractor's liabilities.
7. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.
8. We, (indicate the name of the Bank), undertake not to revoke this guarantee except with the consent of the Government in writing.
9. This Bank Guarantee shall be valid up to unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs (Rupees..... only) and unless a claim in writing is lodged with us within the date of expiry or extended date of expiry of this guarantee, all our liabilities under this guarantee shall stand discharged.

Date:

Witnesses:

Signature.....
Name and address

Authorized signatory
Name:
Designation:
Staff code no:
Bank seal:

Signature.....
Name and address

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

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

Sample letter for Acceptance of tender**By REGISTERED POST**

No.

Dated,

To

(Name and Address of the contractor)

Subject: (Name of work as appearing in the tender for the work).

Dear Sir(s)

Your tender for the work mentioned above has been accepted on behalf of the President of India at your tendered / negotiated tender amount of Rs.....(Rupees.....) which is% below / above the estimated cost of Rs.....(Rupees.....)

1. You are requested to submit the performance guarantee of Rs.(Rupees.....) within 7 days of issue of this letter. The Performance Guarantee shall be in any of the prescribed form as provided in Clause – I of the General Condition of Contracts for CPWD Works and shall be valid upto On receipt of prescribed performance guarantee necessary letter to commence the work shall be issued and site of work shall be handed over to you thereafter.

2. Please note that the time allowed for carrying out the work as entered in the tender..... days, will be reckoned from **10 days** subject to maximum allowable extension under Clause

1(ii), from the date of issue of this letter.

Yours faithfully,

Executive Engineer

For & on behalf of President of India

.....Division, CPWD

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Annexure-III**Sample letter for Commencement of works****By Registered Post**

No.

Date:

To

(Name and Address of the contractor)

Subject: (Name of work as appearing in the tender for the work).

Ref: 1. Performance guarantee submitted by you vide your letter No Dated for above work.

2. This office letter of intent/ acceptance of tender No.....dt.....

Dear Sir(s)

1. In continuation to the letters referred above, you are requested to attend this office to complete formal agreement within 7 days from stipulated date of start.

2. You are requested to contact the Assistant Engineer (complete address) for taking possession of site and starting the work on or before days from the date of letter of acceptance of tender. Please note, that the time allowed for carrying out the work as entered in the tender () days, will be reckoned from to days subject to maximum allowable extension under Clause 1(ii), from the date of issue of acceptance letter

Yours faithfully,

Executive Engineer

For & on behalf of President of India

.....Division, CPWD

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Annexure-IV**FIELD TESTING EQUIPMENT AND INSTRUMENTS TO BE PROVIDED BY THE CONTRACTOR AT HIS OWN COST****A. Testing Equipment at Field Laboratories (Minimum numbers specified against each of them)****Balances**

Kg to 10 kg capacity, semi-self indicating type- Accuracy 10 gm

500 gm capacities, semi-self indicating type- Accuracy 1 gm

Pan balance- 5kg capacity- Accuracy 10 gms

Sieves as per IS 460-1962.

IS sieves - 450mm internal dia, of sizes 100mm, 80mm, 63mm, 50mm, 40mm, 25mm, 20mm, 12.5mm, 10mm, 6.3mm and 4.75mm complete with lid and pan.

IS sieves - 200mm internal dia (brass frame), consisting of 2.36mm, 1.18mm, 600 microns, 425 microns, 300 microns, 212 microns, 150 microns, 90 microns, 75 microns with lid and pan.

Equipment for slump test-slump cone, steel plate, tamping rod, steel scale, scoop.

Dial gauges, 25mm travel- 0.01mm/division least count - 1 nos.

Graduated measuring cylinders 200 ml capacity – 2 Nos.

Enamel trays (for efflorescence test for bricks)

(i) 300 mm x 250 mm x 40 mm - 1 Nos.

(ii) Circular plates of 250mm dia - 2 Nos.

Concrete cube moulds 15 x 15 x 15cm - 30 Nos.

(B) FIELD TESTING INSTRUMENTS

1. Steel tapes-3m

2. Vernier calipers

3. Micrometer screw 25mm gauge.

4. A good quality plumb bob.

5. Spirit level, minimum 30cms long with 3 bubbles for horizontal vertical.

6. Wire gauge (circular type) disc.

7. Foot rule

8. Long Nylon thread

9. Magnifying glass.

10. Screw driver 30cms long

11. Ball pin hammer, 100 gms

12. Plastic bags for taking samples.

13. Universal Testing Machines - 1 Nos (Properly calibrated)

Field testing equipment shall be arranged by the contractor as per the requirement of work.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Annexure-V**LIST OF MACHINERY, TOOLS & PLANTS TO BE DEPLOYED BY THE CONTRACTOR AT SITE**

Sl. No.	Equipment	Numbers (Tentative)
1.	Excavator cum loader (JCB 3D model or equivalent).	1 No
2.	Needle Vibrators.	6 Nos
3.	Reinforcement bending machine.	3 Nos
4.	Reinforcement cutting machine.	3 Nos
5.	Total station with distance meter.	1 No
6.	Tractor with trolley.	2 Nos
7.	Water tanker (minimum capacity 5000 ltrs).	2 Nos
8.	Welding machine 400 Ampere	3 Nos
9.	Screener for coarse sand and fine sand	1 No
10.	Centrifugal mono block water pump suitable for minimum 30 m head.	2 Nos
11.	Building hoist with winch machine (750kg gross load and height upto 60ft.)	1 No
12.	DG sets of adequate capacity.	As per Actual requirement
13.	Reversal drum mixer machine with hopper	1 No
14.	Semi Automatic Cement Concrete Batch Mixing Plant 8-12 Cum/Hour capacity with printing facilities	1 No
15.	Dumper	2 Nos
16.	Power driven earth rammer.	As per Actual requirement
17.	Auto level & staff.	1 No
18.	Pile rigs or equivalent equipment for pile work as per design parameter	2 Nos
19.	Iron Boxes of size 25x35x40 cm	6 Nos
20.	Shuttering Plate	1500 Sqm
21.	Steel Props	2500 Nos.
22.	Column shuttering sets	Complete set of One floor
23.	Any other machinery required for completion of the work as per decision of Engineer-in-Charge.	As per Actual requirement

Note: The above list is only indicative and not exhaustive.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Annexure-VI**GUARANTEE FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF
WATER PROOFING WORKS.**

The agreement made this _____ day of _____ two thousand and _____ between _____ son of _____ of _____ (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 (here in after called the contract), dated _____ and made between the GUARANTOR of the ONE part and the GOVERNMENT of the other part, whereby the contractor, interalia, undertook to render the buildings 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 and leak-proof FOR TEN years to be reckoned from the date after the maintenance period prescribed in the contract.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely leak- proof and the minimum life of such water proofing treatment shall be TEN years to be reckoned from the date after the maintenance period prescribed in the contract:

Provided that the Guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose:

(I) Misuse of roof shall mean any operation which will damage proofing treatment like chopping of firewood and the things of same nature which might cause damage to the roof

(II) Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby proofing treatment is removed in parts.

(III) The decision of the Engineer-in-charge with regard to cause of leakage shall be final.

During this period of guarantee the Guarantor shall make good all the defects and in case of any defect being found render the building water proof to the satisfaction of the 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 execute the waterproofing or commits breach there under, then the Guarantor will indemnify the principal and his successors against all loss, damage, cost, expense or otherwise which may be incurred by him by reason of any default on the part of the GUARANTOR in performance and observance of this supplementary agreement. As to the amount of loss and/or damage and/or cost incurred by the Government, the decision of the Engineer-in-charge will be final and binding on the parties.

IN WITNESS WHERE-OF these presents have been executed by the obligor _____ and by _____ and for and on behalf of the PRESIDENT OF INDIA on the month and year first above written.

SIGNED, sealed and delivered by (OBLIGOR) in the presence of.

1.

2.

Signed for and on behalf of the PRESIDENT OF INDIA by _____ in presence of:

1.

2.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR
FOR REMOVAL OF DEFECTS AFTER COMPLETION
IN RESPECT OF ALUMINIUM DOORS, WINDOWS VENTILATOR WORK/FIRE RATED DOOR.

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 from the date of completion of work or N.O.C. issued by the Fire Services Department which ever is later.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable and guaranteed against faulty material and workmanship, defective anodizing/ powder coating for five years to be reckoned from the date of completion of the work.

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

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

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

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

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

1. 2.

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

1. 2.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

**GUARANTEE BOND TO BE EXECUTED BY THE CONTRACTOR
FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF
ACOUSTICAL TREATMENT 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, colour, workmanship and its properties for FIVE years from the date of completion of work.

NOW THE GUARANTOR hereby guarantee that work executed by him will remain structurally stable and guaranteed against faulty material, colour, workmanship and its properties for FIVE years to be reckoned from the date of completion of the work.

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

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

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

IN WITNESS WHEREOF these presents have been executed by the obligator

.....and by for and on behalf of the PRESIDENT OF INDIA on the day, month and year first above written.

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

1.
2.

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

1.
2.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

Form 'F'

Undertaking on structural stability and soundness of already completed buildings and infrastructure Projects.

I/we undertake and confirm that any building / infrastructure constructed by our firm /partnership firm/company has not suffered any failure, making it unfit for intended use, either due to structural design and defects or due to use of sub-standard materials or execution of sub-standard work, poor workmanship or any other reason during the last 25 (twenty five) years.

I/we, further, undertake that if such information comes to the notice of CPWD, then Engineer-in-Charge shall be free to terminate the bid/agreement and to forfeit the entire amount of earnest money deposit, performance guarantee and security deposits.

I/we, also undertake that in addition to above, the Engineer-in-Charge shall be free to debar us forever from tendering in CPWD.

The decision of Engineer-in-Charge or any higher authority shall be final and binding.

Signature of notary with seal

Signature of bidder or an authorized person of the firm with stamp.

Note: Affidavit to be furnished on a 'Non-judicial' stamp paper of Rs. 200/-(scanned copy of the notarized affidavit to be uploaded at the time of submission of bid).

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

PART-B

CIVIL WORKS

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

SPECIAL CONDITIONS CIVIL WORKS

- 1) The work shall be carried out as per CPWD Specifications 2019 Vol. I & II with upto date correction slips, particular specifications, structural drawings and as per instruction of Engineer-in-charge.
- 2) 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 nothing extra over and above the schedule of quantity shall be payable on this account.
- 3) 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.
- 4) The Contractors are advised to inspect and examine the site and its surroundings and satisfy themselves with the nature of site, the means of access to the site, the constraints of space for stacking material / machinery, labour etc., constraints put by local regulations, if any, weather conditions at site, general ground / subsoil conditions etc. or any other circumstances which may affect or influence submission of their bids. The site is available for work. The contractor shall carry out survey of the work area, at his own cost, setting out the layout and fixing of alignment of the building as per architectural and structural drawings in consultation with the Engineer-in-charge and proceed further ensuring full structural continuity and integrated and monolithic construction. Any discrepancy between the architectural drawings and actual layout at site shall be brought to the notice of the Engineer-in-charge.
- 5) The Contractor shall, if required by him, before submission of the bid, inspect the drawings in the Office of the **Executive Engineer Bhubaneswar-II, CPWD, Bhubaneswar**. The department shall not bear any responsibility for the lack of knowledge and also the consequences, thereof to the Contractor. The information and data shown in the drawings and mentioned in the bid documents have been furnished, in good faith, for general information and guidance only. The Engineer-in-Charge, in no case, shall be held responsible for the accuracy thereof and/or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor. No claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in bid document is different or in-correct otherwise or actual working drawings are at variance with the drawings available for inspection or attached to the bid document. It is presumed that the Contractor shall satisfy himself for all possible contingencies, incidental charges, wastages, bottlenecks etc. likely during execution of work and acts of coordination, which may be required between different agencies. Nothing extra shall be payable on this account.
- 6) The nomenclature of the item given in the schedule of quantities gives in general the work content but is not exhaustive i.e. does not mention all the incidental works required to be carried out for complete execution of the item of work. The work shall be carried out, all in accordance with true intent and meaning of the specifications and the drawings taken together, regardless of whether the same may or may not be particularly shown on the drawings and/or described in the specifications, provided that the same can be reasonably inferred there from may be several incidental works, which are not mentioned in the nomenclature of each item but will be necessary to complete the item in all respect. All these incidental works / costs which are not mentioned in item nomenclature but are necessary to complete the item shall be deemed to have been included in the rates quoted by the contractor for various items in the schedule of quantities. No adjustment of rates shall be made for any variation in quantum of incidental works due to variation / change in actual working drawings. Also, no adjustment of rates shall be made due to any change in incidental works or any other deviation in such element of work (which is incidental to the items of work and are necessary to complete such items in all respects) on account of the directions of Engineer-in-Charge. Nothing extra shall be payable on this account.

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

- 7) The contractor shall give to the local body, 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 fees, taxes and charges which may be leviable on account of these operations in executing the contract. Proper temporary barricading by fencing with G.I. sheets, shall be carried out by the contractor at the start of work as per direction of Engineer-in-charge in order to physically define the boundaries of the plot for restricted entry to only those involved in the work and also to prevent any accidents, at the same time without causing any inconvenience to the traffic and the users of the handed over buildings in the adjacent plots. It shall be done by providing, erecting, maintaining temporary protective barricading of minimum 3.0 meters in height, made in panels, with each panel having MS frames / MS scaffolding pipes of suitable size and stiffness, with 24 gauge thick GI corrugated sheet or suitably stiffened plain GI sheet fixed on frames. Such panels shall be suitably connected to each other for stability with nuts and bolts, hooks, clamps etc. and fixed firmly to the ground at about 2 metres spacing, for the entire duration till completion of the work. He shall also provide and erect temporary protective barricades within the plot, if required, to prevent any accident. It shall be dismantled and taken away by the Contractor after the completion of work at his own cost with the approval of the Engineer-in-charge. Nothing extra shall be payable on this account.
- 8) The contractor shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night. In case of any accident to labours/ contractual staff the entire responsibility will rest on the part of the contractor and any compensation under such circumstances, if becomes payable, shall be entirely borne by the contractor.
- 9) The work shall generally be carried out in accordance with the “CPWD Specifications 2019 Vol.I & II with up to date Correction clips, additional/ Particular Specifications, Architectural/ Structural drawings and as per instructions of Engineer-in charge. Any additional item of the work, if taken up subsequently, shall also conform to the relevant CPWD Specifications as mentioned above. Working (both Architectural and Structural) drawings will be released progressively to the contractor commensurate to the construction schedule approved by Engineer-in-charge.
- 10) 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 scale dimensions.
- 11) In case of 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.
- Description of items as given in Schedule of quantities
 - Particular specifications
 - Special conditions
 - Tender drawings attached
 - CPWD Specifications including correction slips issued up to the last date of uploading/ submission of tender.
 - General Conditions of Contract for CPWD work including correction slips issued up to the last date of uploading/submission of tender.
 - Indian Standards Specifications of B.I.S.
 - ASTM, BS, or other foreign origin codes mentioned in tender document.
 - Manufacturer’s specifications and as decided by the Engineer-in-Charge.
 - Sound Engineering practices or well established local construction practices.
12. The works to be governed by this contract shall cover delivery and transportation up to destination, safe custody at site, insurance, erection and commissioning of the E&M services of the entire work.
- 13 The work shall be carried out in accordance with the approved Architectural structural drawings & service drawings to be issued from time to time by the Engineer-in- charge.

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Before commencement of any item of work the contractor shall correlate all the relevant structural drawings, Specifications etc. issued for the work and satisfy himself that the information available from there is complete and unambiguous. The figure and written dimension of the drawings shall be superseding the measurement by scale. The discrepancy, if any, shall be brought to the notice of the Engineer-in-charge 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 by the department on this account.

14. 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.
15. Unless otherwise provided in the Schedule of quantities, the rates tendered by the contractor shall be all inclusive and shall apply to all heights, lifts, leads and depths of the building and nothing extra shall be payable to him on this account. Payment for centering, shuttering, however, if required to be done for floor heights greater than 3.5m shall be admissible at rates arrived in accordance with clause 12 of the agreement if not already specified.
16. The contractor shall take instructions from the Engineer-in-Charge regarding collection and stacking of materials at suitable place. No stacking of materials or excavated earth or building rubbish shall be stacked on areas where other buildings, roads, services and compound walls are to be constructed. The stacking shall take place as per stacking plan. However, if any change is required, the same shall be done with the approval of Engineer- in-Charge.
17. The Contractor shall bear all incidental charges for Cartage, storage and safe custody of materials, if any, issued by department as well as to those materials also arranged by the contractor.
18. Any cement slurry added over base surface (or) for continuation of concreting for better bond is deemed to have been built in the execution of work and nothing extra shall be payable or extra cement considered in consumption on this account.
19. The contractor shall make his own arrangements for water and for obtaining electric connections if required and make necessary payments directly to the State Govt. departments concerned. 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 etc. shall be borne by the contractor. Work shall normally be done in a single shift/day. However if the work is required to be executed in more than one shift in a day for meeting the time lines, the Contractor with prior approval of the Engineer-in-charge, shall have to make necessary arrangements for the same and all costs towards the same shall be deemed to have been included in the quoted rates.

PREVENTION OF NUISANCE AND POLLUTION:

20. The Contractor shall take all necessary precautions to prevent any nuisance or inconvenience to the owners, tenants or occupants in the campus or other client Department campuses and to the public in general and to prevent any damage to such properties and any pollution. 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 what so ever caused due to the execution of the work or by traffic brought thereon by the contractor. All waste or superfluous materials shall be cleaned away by the contractor without any reservations entirely to the satisfaction of the Engineer in charge.
21. 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

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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- first hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.
22. No inflammable materials including P.O.L shall be allowed to be stored in huge quantity at site. However, reasonable quantity may be permitted for storage, 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.
 23. No Waiving of Legal Rights and Powers : The Engineer-in-Charge shall not be precluded or stopped from taking any measurements, and framing of estimates or detaining any certificates made either before or after the completion and acceptance of the work and payment, from showing the true amount and character of the works performed and materials furnished by the contractor and from showing that any such measurements, estimates or certificates untrue or incorrectly made and that Engineer-in-charge shall not be precluded or stopped from recovering from the contractor such damages as it may be sustained by reasons of his failure to comply with the terms and conditions of the contract.
 24. The contractor shall take into account the element of wastage/wastages those are likely to be there in all elements of the work and quote his price, taking that into account. The contractor shall study all the items from the point of view of wastage / wastages, which are likely to take place.
 25. The contractor shall ensure that at no point of time there should be any hindrance to the other construction activities giving on in the Campus. Therefore, he shall sequence his construction activity in different stretches accordingly. Nothing extra shall be payable on this account.

26. SECURITY AND TRAFFIC ARRANGEMENTS

In the event of any restrictions being imposed by the Security agency of Client Department / CPWD or any other local 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 him on such accounts. The loss of time on these accounts, if any, shall have to be made up by augmenting additional resources whatever required.

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

- | | | |
|------|-----------------|---|
| i. | IS 3696 Part I | Safety Code for scaffolds and ladders. |
| ii. | IS 3696 Part II | Safety Code for scaffolds and ladders Part II ladders. |
| iii. | IS 764 | Safety Code for excavation work. |
| iv. | IS 4138 | Safety Code for working in compressed air. |
| v. | IS 7293 | Safety Code for working with construction machinery. |
| vi. | IS 7969 | Safety Code for storage and handling of building materials. |
| vii. | IS 4130 | Safety code for demolition of buildings. |

27. The contractor is required to make his own arrangements to provide huts for labourers as is acceptable to local bodies /client and nothing extra shall be paid on this account. He shall make his own arrangements for stores, field office etc. Before bidding, he shall visit the site and assess the manner in which he is able to arrange the above facilities. The Engineer-in-charge shall in no way be responsible for any delay on this account and no claim, whatsoever, on this account shall be entertained.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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- 28.No payment shall be made for any damage caused by 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.
- 29.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.
30. All materials obtained from contractor shall be got checked by the representative of Engineer-in-Charge on receipt of the same at site before use.
31. The contractor shall be responsible for the watch and ward/guard of the buildings, safety of all fittings and fixtures including all equipments, services 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 and no claim shall be admissible on this account.
- 32.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 / Odisha State Govt. 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. All statutory taxes, levies, charges (including water and sewerage charges, charges for temporary service connections and / or any other charges) payable to such authorities for carrying out the work, shall be borne by the Contractor. The 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. The clause 30A of the General conditions of contract for CPWD works is not applicable to the tender. The Contractor shall arrange to give all notices as required by any statutory / regulatory authority and shall pay to such authority all the fees that is required to be paid for the execution of work. He shall protect and indemnify the Department and its officials & employees against any claim and /or liability arising out of violations of any such laws, ordinances, orders, decrees, by himself or by his employees or his authorized representatives. Nothing extra shall be payable on these accounts.
- 33.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.
- 34.The contractor shall make all necessary arrangements for protecting works already executed from rains, fog or likewise extreme weather conditions 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.
- 35.The contractor will take reasonable precautions to prevent his workman and employees from removing and damaging any flora (plant/vegetation) from the project area.

36.SETTING OUT

- (i) The contractor shall carry out survey of the work area, at his own cost, setting out the layout of

Correction – Nil,			
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building in consultation with the Engineer-in-charge & proceed further. Any discrepancy between in the drawings and actual layout at site shall be immediately 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 centre lines, etc., Nothing extra shall be payable on this account.

- (ii) The contractor shall establish, maintain and assume responsibility for grades, lines, levels and benchmarks. He shall report any errors or inconsistencies regarding grades, lines, levels, dimensions etc 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.
- (iii) If at any time, any error appears due to grades, lines, levels and benchmarks 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. Nothing extra shall be payable on this account.
- (iv) Though the site levels are indicated in the drawings the Contractor shall ascertain and confirm the site levels with respect to benchmark from the concerned authorities. The Contractor shall protect and maintain temporary/ permanent benchmarks at the site of work throughout the execution of work. These benchmarks 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.
- (v) 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.
- (vi) 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 entire satisfaction of the Engineer-in-charge.

37. TOOLS AND PLANTS

The contractor should deploy constructions equipment required for the proper and timely execution of the work. Nothing extra shall be paid on this account.

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.

38. SCAFFOLDING

Wherever required for the execution of work, all the scaffolding shall be provided and suitably fixed, by the contractor. It 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.

39. The contractor shall do proper sequencing of the various activities by suitably staggering the activities so as to achieve early completion. The contractor is to deploy adequate equipment, machinery and labour as required for the completion of the entire work within the stipulated period as specified. Also ancillary facilities shall be provided by contractor commensurate with requirement to complete the entire work within the stipulated period. Nothing extra shall be payable on this

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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 condition 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 workshop 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.

40. ROYALTY

Royalty/Seigniorage Fee at the prevalent rates shall be deducted from the Bills payable to the Contractor, as per Gazette Notification No. 2280 dated 14.12.2016 issued by Steel & Mines Department, (Copy enclosed), on all materials such as boulders, metals, all sizes stone aggregates, brick aggregates, coarse and fine sand, moorum, river sand/ Manufactured sand, gravels and bajri etc. collected by him for the execution of the work. The rates quoted by the contractor shall be inclusive of such Royalty and taxes etc. And nothing extra shall be payable on this account.

41 PRESERVATION AND CONSERVATION MEASURES

(i) Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services, if any, encountered in the course of the execution of work shall be protected against the damage by the contractor at his own expense. In case the same are to be removed and diverted, expenditure incurred in doing so shall be payable to the contractor. The contractor shall work out the cost, get the same approved by Engineer-in-charge before taking up actual execution. 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.

(ii) 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 Act. 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.

42. RESPONSIBILITY OF CONTRACTOR

- (i) He shall protect and indemnify the CPWD 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.
- (ii) The fee payable to statutory authorities for obtaining the various permanent service connections and Building Use Certificate for the building shall be borne by the Client.
- (iii) The Contractor shall assume all liability, financial or otherwise in connection with this contract and shall protect and indemnify the CPWD from any and all damages and claims that may arise on any account. The Contractor shall indemnify the Department CPWD 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.

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43. CO-OPERATION WITH OTHER CONTRACTORS/SPECIALIZED AGENCIES/ SUB-CONTRACTORS

- (i) The contractor shall take all precautions to adhere by the environmental related restrictions imposed by any statutory body having jurisdiction over work site as well as prevent any pollution of streams, ravines, river bed and waterways. All waste or superfluous materials shall be transported by the contractor, entirely to the satisfaction of the Engineer-in-charge and disposed at designated places only. 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 claims whatsoever on account of site constraints mentioned above or any other site constraints, lack of public transport, inadequate availability of skilled, semi-skilled or unskilled workers in the near vicinity, non-availability of construction machinery spare parts and any other constraints not specifically stated herein, shall be entertained from the contractor. Therefore, the tenderers are advised to visit site and get first-hand information of site constraints. Accordingly, they should quote their tenders. Nothing extra shall be payable on this account.
- (ii) The contractor shall cooperate with and provide the facilities to the sub-contractors and other agencies working at site for smooth execution of the work. The contractor shall indemnify the CPWD against any claim(s) arising out of any disputes. The contractor shall:
- Allow use of scaffolding, toilets, sheds etc.
 - Properly co-ordinate their work with the work of other contractors.
 - Provide control lines and benchmarks to his sub-contractors and the other contractors.
 - Provide electricity and water at mutually agreed rates.
 - Provide hoist and crane facilities for lifting material at mutually agreed rates.
 - Co-ordinate with other contractors for leaving inserts, making chases, alignment of services etc. at site.
 - Adjust work schedule and site activities in consultation with the Engineer-in-charge and other Contractors to suit the overall scheduled completion.
 - Resolve the disputes with other contractors/ sub-contractors amicably and the Engineer-in-charge shall not be made an intermediary or an arbitrator.
- (iii) The work should be planned in a systematic manner so as to ensure proper co-ordination of various disciplines viz. water supply, drainage, rain water harvesting, electrical, fire fighting, information technology, communication & electronics and any other services.
- (iv) Other Associated agencies may also simultaneously execute and install the works of sub-station / generating sets, air-conditioning, lifts, etc. for the work 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 at the time of casting of concrete, stone work and brick work, if required, and nothing extra shall be payable on this account.
- (v) The contractor shall conduct his work, so as not to interfere with or hinder the progress or completion of the work being performed by other contractor(s) or by the Engineer-In-Charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other contractor or he shall arrange his work with that of the others in an acceptable and in a proper coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.

44. SUPERVISION OF WORK

The contractor shall depute Site Engineer & skilled workers as required for the work. He shall

Correction – Nil,
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Deletion – Nil

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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 work 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 as mentioned in the bid document to complete the work with quality and within stipulated time limit.

45 SPECIALIZED AGENCIES

Any specialized component of work in the project, for which expertise is lacking with the main contractor the same, shall be carried out in association with a specialized agency to be approved by the Engineer-in-charge.

46. RATES

- (i) The amount quoted by the Contractor are deemed to be inclusive of site clearance, setting outwork, profile, setting lay out on ground, establishment of reference bench mark(s), installing various signage, taking spot levels, with total station, construction of all safety and protection devices, compulsory use of helmet and safety shoes, and other appropriate safety gadgets by workers, imparting continuous training for all the workers, barriers, preparatory works, construction of clean, hygienic and well ventilated workers housings in sufficient numbers, working during monsoon or odd season, working beyond normal hours, working at all depths heights, lead, lift, levels and location and any other unforeseen but essential incidental works required to complete this work. Nothing extra shall be payable on this account and no extension of time for completion of work shall be granted on these accounts.

(ii) The amount quoted by the tenderer is inclusive of all taxes and levies including GST and nothing extra shall be payable.

- (iii) Ancillary and incidental facilities required for execution of work like labour camp, stores, fabrication yard, offices for Contractor, watch and ward, 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 from local bodies etc., protection works, 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 amount quoted by the Contractor. 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.

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 withstanding 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. 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.

47 SAFETY MEASURES

- (i) WARNING/ CAUTION BOARDS: All temporary warning / caution boards / glow signage

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Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

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.

- (ii) SIGN BOARDS: The Contractor shall provide and erect a display board of size and shape as required and paint over it, in a legible and workman like manner, the details about the salient features of the project, as required by the Engineer-in-Charge. The Contractor shall fabricate and put up a sign board in an approved location and to an approved design indicating name of the project, Client/Owner, Engineer-in-charges, Structural Consultants, Department etc. besides providing space for names of other Contractors, Sub-Contractors and specialized agencies within 15 days from issue of award letter. Nothing extra shall be payable on this account. In case of non compliance/delay in compliance in this, a penalty @ Rs. 500/- per day will be imposed which will be recovered from the immediate next R/A Bill of the Contractor.
- (iii) Necessary protective and safety equipments such as helmet, safety shoes, gloves etc shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and to be used at site.
- (iv) 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.

48 QUALITY ASSURANCE

- i. Contractor shall have to engage well-experienced skilled labour and deploy modern T&P and other equipment to execute the work.
- ii. 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.
- iii. In addition to the supervision of work, CPWD Engineers/Quality Control Unit, Chief Engineer, Bhubaneswar 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 up to 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.

Correction – Nil,

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Deletion – Nil

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- iv. 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 make 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.
- v. The contractor shall at his own cost submit samples of all materials sufficiently in advance and obtain approval of Engineer-in-Charge. The materials to be used in actual execution of the work shall strictly conform to the quality of samples approved by the Engineer-in-Charge and nothing extra shall be paid on this account. The acceptance of any sample or material on inspection shall not be a bar to its subsequent rejection, if found defective.
- vi. 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 suggested list of brand names given in the tender document / particular specifications for approval of Engineer-In-Charge. For all other items, materials and fittings of ISI Marked 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 and use the same only after getting the approval of Engineer-In-Charge.
- vii. 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. All materials whether obtained from Govt. stores or otherwise shall be got checked by the Engineer-in-Charge or his authorized supervisory staff on receipt of the same at site before use.
- viii. The contractor has to establish field laboratory at site including all necessary equipment for field tests as given in Schedule 'F'. All the relevant and applicable standards and specifications shall be made available by the contractor at his cost in the field laboratory. The contractor shall designate one of his technical representatives as Quality Assurance Engineer, who shall be responsible for carrying out all mandatory field/laboratory tests. The contractor shall also provide adequate supporting staff at his cost for carrying out field tests, packaging and forwarding of samples for outside laboratory tests and for maintaining test records.
- ix. The tests, as necessary and where no field laboratory facilities are available, shall be conducted in the laboratory approved by the Engineer-in- Charge. For materials for which field testing equipment is established at site, for those materials 90% of total tests shall be done at the laboratory established at site by contractor and remaining in the reputed laboratories approved by Engineer-in-charge. The samples shall be taken for carrying out all or any of the tests

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stipulated in the particular specifications and as directed by the Engineer-in-Charge or his authorized representative.

- x. All the registers of tests carried out at Construction Site or in outside laboratories and all material at site (MAS) registers including cement register shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-charge. All the entries in the registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by AE/AEE/EE. Contractor shall be responsible for safe custody of all the registers.
- xi. 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.
- xii. 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.
- xiii. The cost of test required for all the materials shall be borne by the Contractor. In case of concrete and reinforced concrete work also the contractor shall be required to make arrangement for carrying out compression strength tests at his own cost. He shall render all assistance for the preparation of cubes, safe custody of the same, proper curing and carriage up to the laboratory where the test is to be performed.
- xiv. 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.
- xv. The contractor shall have to execute guarantee bonds in respect of water proofing works as per Performa VI enclosed.
- xvi. 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 / fire fighting equipments, 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.
- xvii. In addition to the provisions of relevant clauses of the contract, the work shall also be open to inspection by Senior Officers of CPWD/CTE/ TPQA and their representatives. 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.

49 SUBMISSION AND DOCUMENTATION

- i) 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. He should also keep at site at least one set of latest version of BIS Codes and other relevant codes at site and produce the same if asked for by Engineer-In-charge. In case of non-compliance, these codes will be purchased from the market and actual cost of purchase will be recovered from the next RA Bill of the contractor.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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- ii) The contractor shall make available four (04) sets of completed drawings, “As Built Drawings” along with literatures, manuals, warranty certificates etc. of various installed fittings, fixtures and equipment for the completed projects. This shall be the prerequisite for payment of final bill.
- iii) The Contractor shall make available three (03) sets of all drawings of internal and external services i.e. Water Supply, Sanitary line and Drainage lines. This shall be the prerequisite for payment of final bill. These drawings shall have the following information:
 - (a) Run off for all piping and their diameters including soil, waste pipes and vertical stacks.
 - (b) Ground and invert level of all drainage pipes together with locations of all manholes and connections, up to outfall.
 - (c) Run off for all water supply lines with diameters location of control valves, access panels etc.
- iv) The contractor will submit computerized measurement sheet for the work carried out by him for making payment as per the CPWD General Conditions of Contract (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.
- v) To avoid delay, contractor should submit all samples well in advance so as to give timely orders for procurement.

50. PROJECT PROGRAM CHART:

The Contractor shall prepare an integrated program chart (Bar chart) within **7 (Seven)** days as per clause-5 of GCC of issue of award letter including civil as well as E & M activities for the execution of work, Showing clearly all activities from the start of work to completion, with details of manpower, equipment and machinery required for the fulfillment of the program within the stipulated period and submit the same for approval of the Engineer-In-Charge within fifteen days of the award of the work. These shall be submitted by the contractor through electronic media besides forwarding hard copies of the same. The integrated program chart so submitted should not have any discrepancy with the physical milestones attached in the contract agreement.

- i) Apart from the above integrated program chart, the contractor shall be required to submit fortnightly progress report of the work in a computerized form on 1st and 16th of every month. The progress report shall contain the following, apart from whatever else may be required as specified above:
- ii) Construction schedule of the various components of the work through a bar chart for the next two fortnights (or as may be specified), showing the micro- milestone/milestones, targeted tasks (including material and labour requirement) and up to date progress. Digital photographs showing all the parts of construction site along with video of executions of different items whenever required in soft copy have to be submitted in every fortnightly progress report.
- iii) Progress chart of the various components of the work that are planned and achieved, for the fortnight as well as cumulative up to the fortnight under reckoning, with reason for deviations, if any in a tabular format.
- iv) Plant and machinery statement, indicating those deployed in the work.
- v) Man-power statement indicating:
 - Individually the names of all the staff deployed on the work, along with their designations.
 - No. of skilled workers (trade wise) and total no. of unskilled workers deployed on the work and their location of deployment i.e. blocks.
- iv). 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 advance payment received, extra/substituted/deviation items if any, etc.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

51. TEMPORARY WATER/ ELECTRICITY/ TELEPHONE CONNECTION

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.

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

52. CLEANLINESS OF SITE

- (i) The contractor shall not stack building material/ malba/ muck on the land or road of the local development authority or on the land owned by the others, as the case may be. So the muck, rubbish etc. shall be removed periodically as directed by the Engineer-in-charge, from the site of work to the approved dumping grounds as per the local byelaws and regulations of the concerned authorities and all necessary permissions in this regard from the local bodies shall be obtained by the contractor. Nothing extra shall be payable on this account. In case, the Contractor is found stacking the building material / malba as stated above, the Contractor shall be liable to pay the stacking charges/penalty as may be levied by the local body or any other authority and also to face penal action as per the rules, regulations and bye-laws of such body or authority. The Engineer –in- Charge shall be at liberty to recover, such 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 and performance guarantee in respect of this contract agreement.
- (ii) 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, services and compound walls are to be constructed.
- (iii) The site of work shall be always kept clean due to constraints of space and to avoid any nuisance to the users of buildings in the adjacent plots. The Contractor shall take all care to prevent any water- logging at site. The waste water, slush etc. shall not be allowed to be collected at site. It may be directly pumped into the creek with prior approval of the concerned authorities. For discharge into public drainage system, necessary permission shall be obtained from relevant 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.

53. REFUND OF PERFORMANCE GUARANTEE

The performance guarantee for the work shall be refunded to the contractor soon after the completion of the entire works under this agreement and recording of the completion certificate for such agreement and submission of completion plans and subjected to submission of performance guarantee for Schedule items as mentioned above.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

54. DEFECT LIABILITY PERIOD (Refund of Security Deposit)

The defect liability / maintenance period shall be 12 months after the date of completion work for this contract agreement. The Security Deposit shall be released after the defect liability period of 12 months after completion of entire project 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.

55. GENERAL CLARIFICATIONS

- i) 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 previous day of last date of submission of bids.
- ii) Unless otherwise specified in the schedule of quantities, the amount quoted shall be considered, as inclusive of pumping out or bailing out water, if required throughout the construction period for which no extra payment shall be made. This shall also include water encountered from any source such as rains, floods, sub soil water table being high and/or due to any other cause whatsoever.
- iii) All stone aggregate and stone ballast shall be of hard stone variety to be obtained from approved quarries.
- iv) The sand, Coarse sand/Pulverised Stone sand/ crushed stone sand should be obtained from approved sources. The same shall be clean and sharp angular grit type. The sand shall be screened before using, if required. If the sand brought to site is dirty, it must be washed in clean water to bring the sand to the required specifications. Nothing extra shall be payable on this account.
- v) The amount quoted for this work, shall unless clearly specified otherwise, include cost of all operations and all inputs of labour, material, T & P, scaffolding, wastages, watch and ward, other inputs, all incidental charges, all taxes, cess, duties, levies etc. required for execution of the work.

56. DE-WATERING

- vi) 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
- vii) properties and installations on account of such lowering of water table. If needed, suitable precautionary measures shall be taken by the Contractor. Also the scheme of dewatering adopted shall have adequate built in arrangement to serve as stand-bye to attend to repair of pumps etc. and disruption of power / fuel supply. Nothing extra shall be payable on this account.
- viii) 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.

57. 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

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

contract value 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.10 lakh for each accident, 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. Without prejudice to any of its obligations and responsibilities specified above, the Contractor shall within 10 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.

58. Applicable Permits

- i. 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 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.
- ii. 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.

59. Public Procurement (Preference to Make in India) Policy:-

To encourage Make in India and promote manufacturing and production of goods and services in India with a view to enhancing income and employment, the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, pursuant to Rule 153(iii) of the GFR 2017, have issued orders for procurement through local suppliers vide order no. P-45021/2/2017-PP(BE-II) dt:04.06.2020 & latest amendments. As per the provisions of these orders, purchase preference shall be given to locally manufactured goods and locally provided services as applicable in compliance to the NIT. The agency shall submit list of makes of materials proposed to be used on the work from suppliers as per these order for approval of the department out of the approved make kept in the tender.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

PARTICULAR SPECIFICATIONS CIVIL WORK

1.1 Earthwork :

1.1.1 General :

All types of excavation work shall be done in accordance with CPWD specifications Volume - I & II with correction slips up to the last date of submission of tender documents. Any trenching and digging for laying sewer lines / water lines /cables etc. shall be commenced by the contractor only when all men, machinery's and materials have been arranged and closing of the trench(s) thereafter shall be ensured within the least possible time.

1.1.2 Setting Out:

The contractor shall be responsible for accurately setting out the works to the specified positions, dimensions, levels, and building lines and also checking the site survey for dimensional and level accuracy and reporting any discrepancies before any commences. Any errors in position, level, dimension or alignment of any part of the works at any time shall be rectified by the contractor at his own expense. The contractor shall provide the Engineer with all facilities, equipments and labourers to enable him to check the setting out and levels of the works at all times. The checking of any setting out point, line or level by the engineer shall not in any way relieve the contractor of his responsibility. All setting out points, benchmarks, site rails, pegs and other survey points shall be clearly marked and protected from damage or disturbance during the execution of the works as per CPWD specifications.

1.1.3 Applicable Standards:

The contractor shall ensure to follow the applicable BIS and IS standards related to the excavation and local building regulations and statutory regulations.

1.1.4 Labour and Equipments:

The contractor shall provide all labourers, equipments, materials and any incidentals necessary to complete all aspects of work included in the drawings and specifications. The contractor shall submit Earth Management Plan which is to be approved by the Employer or Engineer's representative before commencing the work.

1.1.5 Related Works:

- a) Clearing, grubbing, and removing all vegetation from the site.
- b) Basement mass excavation
- c) Excavation including getting out and necessary dressing to make surface ready to receive blinding.
- d) Filling and back filling and compaction of fills
- e) Removal and disposal of surplus material.
- f) Dewatering, shoring and strutting.
- g) Road and Compound Wall Works
- h) Landscape or Horticulture Works

1.1.6 Disposal of Surplus earth:

All excavated material including excavated earth declared as surplus and not useful, shall be removed from the site by the contractor within the scope of agreement. The removal of surplus Material shall only be undertaken by the contractor when instructions in this regards are obtained from Engineer in charge.

Dumping shall be at designated place identified by the contractor. Contractor shall also obtain necessary permissions / approvals / authorization from the competent authority of local body / traffic / police as the case may be for removal of excavated earth/materials. No payment/fees on this account shall be entertained by the department.

1.2 Concrete work :

1.2.1 Plain Cement Concrete / Lean Concrete:

Plain Cement Concrete / Lean Concrete in required thickness as per design shall be laid below the raft and all type foundation works, below kerb stone, under floors or wherever required as per

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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EE(C)

CPWD Specifications Volume - I & II with correction slips up to the last date of submission of tender documents.

1.2.2 Reinforced Cement Concrete Work:

The work shall be done as per CPWD specifications Volume - I & II with correction slips up to the last date of submission of tender documents. IS:456-2000 Code of Practice for Plain and Reinforced Concrete (as amended up to date) shall be followed in regard to Concrete Mix Proportion and its production as under:

- (i) The Concrete Mix Design shall be done as “Design Mix Concrete” as prescribed under Clause-9 of IS:456-2000 mentioned above.
- (ii) Concrete shall be manufactured in accordance with Clause-10 of above mentioned IS:456-2000 covering all measures for achieving said Quality Assurance parameters. Contractor shall also depute a qualified Concrete Technologist during the manufacturing of concrete for certifying the quality of concrete produced either on site or at RMC plant. Minimum M25 grade or as specified in the structural design of concrete shall be used in all structural elements of RCC, both in load bearing and framed structure.

1.2.3 The mechanical properties such as modulus of elasticity, tensile strength, creep and shrinkage of concrete using fly ash blended cements (PPCs, PSC) are not likely to be significantly different and their values are to be taken same as those used for concrete made with OPC.

1.2.4 To control higher rate of carbonation in early ages of concrete in 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 PPC received from different sources shall be ensured.

1.2.5 In environment subjected to aggressive chloride or sulphate attack in particular, PPC based concrete is recommended. In case, where structural concrete is exposed to excessive magnesium sulphate, fly ash 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.

1.2.6 Wet curing period shall be enhanced to a minimum of 10 days or its equivalent. In hot and arid regions, the minimum curing period shall be 14 days or its equivalent.

1.2.7 Subject to general guidelines detailed out as above, PPC manufactured conforming to IS:1489, PSC:IS 455:2015 (Part-I) shall be treated at par with OPC for manufacture of Design Mix Concrete for structural use in RCC.

1.2.8 Till the time, BIS makes it mandatory to print the percentage of fly ash on each bag of cement, the certificate from the PPC manufacturer indicating the same shall be supplied by the contractor.

1.2.9 While using PPC for structural concrete work, no further admixing of fly ash shall be permitted.

1.2.10 If the quantity of cement actually used in the work is found to be more than the theoretical quantity of cement including authorised variation, nothing extra shall be payable to the contractor on this account. The allowable variation shall be as per clause 38.

1.2.11 For non-scheduled items, the decision of the concerned Chief Engineer or Superintending Engineer (stipulated in station-wise respective Schedule-F) regarding theoretical quantity of the cement which should have been actually used shall be final and binding on the contractor.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

1.2.12 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.

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

1.2.14 REINFORCED CEMENT CONCRETE:

- a) CPWD Specifications and latest IS codes shall be followed.
- b) The RCC work shall be done with RMC of Design Mix Concrete, unless otherwise specified in the nomenclature of items, wherever letter M has been indicated, the same shall imply for the Design Mix Concrete. The Ready Mix Concrete shall be as per IS: 4926 and as per CPWD specification and guide lines. For the nominal mix in RCC, CPWD specification shall be followed. The Design Mix Concrete will be designed based on the principles given in IS:456, 10262 and SP 23. The contractor shall carry out design mixes for each class of concrete indicating that the concrete ingredients and proportions will result in concrete mix meeting requirements specified. **Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.** The cement shall be actually weighed as presumption of each bag having 50 kg shall not be allowed. In case of use of admixture, the mix shall be designed with these ingredients as well. **While using PPC for structural concrete work, no further admixing of fly ash shall be permitted.** The specification mentioned herein below shall be followed for Design Mix Concrete.

Ingredients :

- (i) Coarse Aggregate :As per CPWD specifications
- (ii) Fine Aggregate : As per CPWD specifications
- (iii) Water : As per requirements laid down in IS 456-2000 and CPWD specifications.
- (iv) Cement :Cement arranged by the contractor will be PPC (in bags) conforming to IS: 1489: Part-I.
- c) The concrete mix design with and without admixture shall be got done by contractor at his own cost and will be carried out at IITs/NITs/NABL accredited laboratory as approved by Engineer-In-Charge.
- d) The contractor shall submit the mix design report from any of above approved institutions for approval of Engineer-in-Charge within 30 days from the date of issue of letter of acceptance of the tender. No concreting shall be done until the mix design is approved by the Engineer-in-charge.
- e) In case of change of source or characteristic properties of the ingredients used in the concrete mix during the work, a revised mix design report shall be conducted from approved Government institutions and shall be submitted by the contractor as per the direction of the Engineer-in-Charge.
- f) **Materials Specifications for RCC Works:**
 - Water: -**
 - (i) Water shall be tested in accordance with the relevant IS Code. IS:456-2000 and as per CPWD specifications.
 - (ii) The contractor shall make its own arrangements for storing of water. Care shall be taken to ensure that water is not contaminated anyway.
 - (iii) For RMC concrete, quality of water shall be got tested at concrete producing plant at every 2 months intervals from the reputed approved laboratory/any Government institutions as mentioned in para 3.2.13 or as approved by Engineer in charge.

Cement:

Cement arranged by the contractor will be conforming to IS 456: 2000 as mentioned in the

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

additional condition for cement attached with tender documents.

Admixture:

The admixture shall be as per relevant BIS code and as per CPWD specifications.

The contractor shall not be paid anything extra for admixture required for achieving desired workability without any change in specified water cement ratio for RCC / PCC work.

g) Additional Conditions and Particular Specifications FOR RCC WORK (DESIGN MIX CONCRETE):

(i) Grade of Concrete: -

The characteristic compressive strength of various grades of concrete shall be given as below:

Sr. No	Grade	Compressive Strength on 15cm cubes minimum 7days (N/mm ²)	Specified characteristic compressive strength at 28days (N/mm ²)	Minimum cement content* (Kg per cum)	Maximum Water cement ratio
(i)	M-25	As per Design	25	330	0.4
(ii)	M-30	As per Design	30	350	0.4
(iii)	M-35	As per Design	35	370	0.4
(iv)	M-40	As per Design	40	390	0.4
(iv)	M-45	As per Design	45	410	0.4

The Concrete mix will be designed for minimum workability as specified in para 7 of IS-456-2000. 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.

(ii) Workability of Concrete (Unless otherwise specified elsewhere or as decided by Engineer-in-charge):

Placing Conditions	Degree of Workability	Slump (mm)
(1)	(2)	(3)
Mass concrete, Lightly reinforced sections in slabs, beams, walls, columns, floors, hand placed pavements, canal lining, strip footings	Low	25-75
Heavily reinforced section in slabs, beams, walls, columns	Medium	50-100
Slipform work, pumped concrete	Medium	75-100

The recommended values of slump for various members to confirm IS 456: 2000 with amendments.

(iii) Approval of Design Mix:

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(s) obtained for different grades of concrete shall be as per relevant IS Standards/Codes. Out of the six specimen of

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

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.

(iv) Charges for Design Mix:

All cost of mix designing and testing connected therewith including charges payable to the Government institutions shall be **borne by the contractor**.

(v) Production of Concrete:

The concrete shall be RMC produced in a central batching and mixing plant (either installed at site or procured from outside approved RMC 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 materials and stop automatically, when the designated weight of each materials have been reached. The batching plant shall have automatic arrangements 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.

The batching plant 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. (Refer IS:456-2000 para 10.2.2)

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

(vi) Mixing Concrete:

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, signalling and metering device which will indicate and assure completion of the required mixing period. The mixer shall have all other components as specified in IS: 4925.

(vii) Transportation, Placing and Compaction of Concrete:

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 6 cum concrete. In case the concrete is proposed to be transported by transit mixer, the mixer speed shall not be less than 4 revolution/minute of the drum nor greater than a speed resulting in a peripheral velocity of the drum as 70 meter/minute at its largest diameter. The agitating speed of the agitator shall be not less than 2 revolution/minute nor more than 6 revolution/minute 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 revolution/minute and the number of such rotations shall not exceed 250. The general construction of transit mixer and other requirements shall conform to IS: 5892. Time & transportation of RMC from plant to site (upto placing / laid in position) shall be less than 2 hours. If the RMC is transported from the outside approved RMC plant to the site of works, then nothing extra on this account will be payable and contractor has to quote the rate accordingly.

In case concrete is to be transported by pumping, the conduit shall be primed by pumping a batch of

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

mortar / thick cement slurry through the line to lubricate it. Once the pumping is started, it shall not be interrupted (if at all possible) as concrete standing idle in the line is liable to cause a plug. The operator shall ensure that some concrete is always there in the pump-receiving hopper during operation. The lines shall always be maintained clean and shall be free of dents.

Materials for pumped concrete shall be batched consistently and uniformly. Maximum size of aggregate shall not exceed one-third of the internal diameter of the pipe. Grading of aggregate shall be continuous and shall have sufficient ultra fine materials (materials finer than 0.25mm). Proportion of fine aggregates passing through 0.25mm sieve shall be between 15 and 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.

(viii) Preparation of Mixes as per approved design mix and conducting confirmatory test at field lab:

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:**

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 the 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.

(ix) Work Strength Test:

Test Specimen:

Work strength test shall be conducted in accordance with IS: 516 on random sampling. Each test shall be conducted on six specimens, three of which shall be tested at 7 days and remaining three at 28 days. Additional samples shall be prepared, if required, as per direction of Engineer in charge for testing samples cured by accelerated method as described in IS: 9103.

Test Results of Sample:

The test results of the sample shall be the average of the strength of three specimens. The individual variation shall not be more than $\pm 15\%$ 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 of Government Engineering colleges or in any other approved laboratory as directed by the Engineer-in-charge.

Standard for acceptance criteria:

Standard of acceptance shall be same as specified in clause 16 of IS 456-2000.

In order to keep the floor finish as per direction of Engineer-in-charge and as per Architectural drawings and to provide required thickness of the flooring as per specification, the level of top surface of RCC shall be accordingly adjusted at the time of its centering, shuttering and casting for which nothing extra shall be paid to the contractor.

h) Ultrasonic Pulse Velocity method of Test for RCC:

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

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

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

(iii) **Velocity criterion for Concrete Quality Grading:**

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

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

- (iv) 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.
- (v) 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, in RCC footings and rafts. On RCC rafts a suitable grid can be worked out for determining number of tests. In addition doubtful areas such as honeycombed locations, where continuous seepage is observed, construction joints and visible loose pockets will also be tested.
- (vi) 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 inappropriate 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.
- (vii) **Tolerances:**As per CPWD specifications.
- (a) In case of rejection of concrete on account of unacceptable compressive strength, governed by para ‘Standard of Acceptance’ as above, the work for which samples have failed shall be redone at the cost of contractors. However, the Engineer in charge may order for additional tests (like cutting cores, ultrasonic 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.
- (b) 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. The landing level of mummy / staircase cabin shall be kept one riser level higher than adjoining slab level so as to accommodate water proofing treatment over

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

terrace slab. In case of kitchen slab the portion of floor trap below kitchen platform is kept at lower level as per drawings. Nothing extra is payable on this account.

- (c) For the execution of centering and shuttering, the contractor shall use propriety “Reebole” chemical mould release agent of FOSROC or equivalent as shuttering oil as approved by Engineer-in-charge.

i) Cover/Spacer Block:

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 equivalent as approved by the Engineer-in-charge at his discretion) of high early strength and same colour as surrounding concrete, pre-cast cement mortar/concrete blocks/blocks of polymer shall not be used as spacer blocks unless specially approved by the Engineer-in-charge, rate of RCC items is inclusive of cost of such cover blocks.

1.3 Form Work:

All the specifications for formwork/shuttering shall be as per CPWD Specifications. Centering and shuttering for all concrete and reinforced concrete wherever required shall be in steel mainly used for concrete purpose to produce a smooth straight level and sharp profiles shall be used for the works for uniform finish on all exposed surfaces. Panels to be in largest practicable sizes to reduce the number of joints, form work material shall have strength adequate to withstand pressure of newly placed concrete. However, all props, bracings, scaffolding etc., shall be in steel. In some restricted places where it is not feasible to use steel formwork, marine ply shall be used with the approval of engineer in charge. The entire responsibility of planning, design, erection and safety of formwork shall lie with the contractor.

Form work shall include all temporary or permanent forms or moulds required for forming the concrete which is cast-in-situ, together with all temporary construction required for their support.

1.4 Seismic/Separation/Expansion Joint Treatment:

1.4.1 General:

Seismic/separation/expansion joints shall be provided where it is shown on the drawings. The contractor shall ensure that no debris is allowed to enter and be lodged in seismic and separation joints. Seismic or separation joints shall be provided with approved system appropriate to the design. Shop drawings to be submitted to Engineer in charge for approvals before executing the work.

Work shall be carried out with specialized contractor as per preferred make list. Cost of expansion Joint accessories both horizontal and vertical is in the scope of this tender. Treatment to be done to all floor to floor joints, Wall to wall joints, and Roof to Roof Joints. Expansion joint treatment to be done as approved by Engineer in Charge as per design requirement.

1.4.2 Horizontal Joints:-

These joints shall be provided as continuous extruded aluminum frame assemblies of suitable profile to receive free floating center plates of design as per shop drawings to be submitted to Engineer-in-charge for approval. The joints system will be of extruded aluminum base members, self-aligning / self-centering arrangement etc. as per ASTM B221-02. Cover plate to be held in place and kept centered throughout movement cycle by spring loaded stainless steel turn-bar. Centre plate design to accommodate floor finish to match décor and withstand during full seismic movement without any damage to cover. Cover assemblies to have design to accommodate +/- ½ thermal movement and 50% horizontal movement during seismic event. Moisture Barrier Membrane shall be provided in the joint system to have complete water tight joint.

1.4.3 Vertical Joints:-

These joints shall be provided with surface-mounted metal wall cover designed to match select metal floor covers with the self-centering aluminum center plate, which spans the joint and slides

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

between the retainer assemblies to allow movement as and when required. Grade of material shall be ASTM B 221-02. Turn shall be of Stainless steel with circular sphere, which allow movement without any deterioration to base assemblies. Moisture Barrier Membrane in the joint system shall be provided to have complete water tight joint.

1.5 Masonry Works:

The Fly ash brick masonry shall be carried out with good quality as per CPWD Specifications.

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

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.

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.

Wherever required RCC Bands of required thickness shall be provided by the contractor in the masonry walls as a part of scope of work. RCC bands shall be properly anchored in columns for stability as directed by Engineer in charge. For low height Masonry Walls in parapets etc, RCC coping of required sizes shall be provided as per approved architectural drawings, if required. The work of masonry walls, coping etc shall be done in accordance with CPWD specifications Volume - I & II with correction slips up to the last date of submission of tender documents.

1.6 Doors:

All doors shall be as per broad schedule of finishes and technical specification given in this document and as per CPWD Specification 2019 Volume-I&II. Contractor shall prepare the detailed architectural drawings, interior drawings, door detail sheets, hardware schedules etc through its consultants. Accessories for fixing of door frame, doors shall be of HILTI or equivalent make and inclusive in scope of work.

Fire Rated Doors:

All the fire Frame and door will be as per item no. 9.161, 9.162 and 9.164 of DSR-2023. The cost of S.S. Ball, Bearing, Hinges etc. is included in the item. Nothing shall be paid on this account extra and any other areas. The Glazing door should be making of SAINT GOBAIN or any other equivalent including fittings with panic bar / latch lock and door closer of. The inactive leaf should be fixed to the frame using tower bolt at meeting edge at top or as per the tested evidence. The system profiles shall offer C4 level of wind resistance when tested as per EN 12210, Class 4 level of air permeability when tested as per EN 12207, Class 5 Impact Resistance when tested as per EN 13049 and shall have 8A class of water tightness when tested as per EN12208. All hardware and fittings such as, door closer, hinges as per fire norms is included in scope of work.

1.6.1 Door Frames:

All doors frames shall be as per broad schedule of finishes and technical specification given in this tender document and as per CPWD Specification 2019 Volume-I&II. Contractor shall prepare the detailed architectural drawings, interior drawings, door detail sheets, hardware schedules etc through its consultants. Door frames shall be fixed with expandable fasteners of HILTI or equivalent make of specified size with necessary plastic sleeves and galvanized M.S. screws including drilling holes complete as per the instruction of Engineer in charge. Size of fastener to be 10mm dia x 140mm long.

1.6.2 Glazed Doors and Flush Doors:

The contractor needs to refer indicative architectural drawings attached with this document and same shall be developed in detail by consultants of contractor as per broad schedule of finishes and specifications attached with tender document.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

All Works will be done in accordance with CPWD specifications Volume - I & II with correction slips up to the last date of submission of tender documents with provision of IS Codes listed in CPWD specifications shall form a part of this document with all latest codes.

1.6.3 TESTING / INSPECTION AND GUARANTEE:

During the process of manufacturing of the door, the contractor shall arrange an inspection of the factory by the Engineer-in-charge or his authorised representative for approval. After installing the door, the specialized agency/sub-contractor shall test the performance of the door frame and shutter in the presence of Engineer-in-charge. The doors shall be smoothly operable under all ambient conditions. All control hardware's and locking devices shall give fault free performance.

Engineer-in charge or his authorized representative shall select the door on random basis from each lot received at site and shall got the required tests conducted at an approved laboratory for testing all required specifications. The contractor shall arrange for such testsof doors (lot wise) with specified hardware. The contractor shall ensure that the door should comply to all the set out criterion and technical specifications stipulated in the tender documents. Contractor shall accordingly quote the rates and nothing extra shall be payable on this account. Contractor shall also provide a Guarantee Certificate and Test certificate for the tested door in an acceptable format on a stamped paper to the Engineer-in-Charge.

1.6.4 GUARANTEE BOND:

All door including Fire door. The works shall be guaranteed for a period of five years from the date of completion of defect liability period mentioned in this NIT document or N.O.C. issued by the Fire Services Department which ever is later.

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 with the specified period, the same shall be got done from another contractor 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.

1.6.5 Door Hardware:

Contractor will submit all samples for hardware proposed of all makes to Engineer in charge for approval of selection of make. Hardware includes fixings, striker plates, shims, and escutcheons for a complete installation, whether indicated or not. All hardware to be Satin Stainless Steel finish. All Hardware's to be installed as per the instruction of manufactures guideline, copy of same to be submitted to be Engineer in charge.

1.6.6 Special condition for Aluminum Doors windows and sliding sections:

- It should be factory made.
- Should be made of Aluminum profile of T5/T6 tempered 6060/6063 alloy.
- Should be mechanically mitered and jointed using casted/ aluminum corner/ connector cleats.
- Sliding Systems should have hardware like 7"/8" concealed lock, single or multi point locking arrangement, single or double wheel fixed or adjustable rollers, nylon anti-rattlers, stand weather strip siliconised brush gasket.
- Casement Systems- Windows having hardware like butt/fiction hinge, single/multi-point lock handles, restrictor arm/stay and casted/aluminum corner /connector cleats.
- Casement Systems - Doors having hardware like butt hinge, mortise lock and casted/ aluminum corner/ connector cleats.

1.7 Structural Steel Work:

The scope include designe and built structural steel frame and trusses frame of covered walkways, entrance gates, compound wall fence, structural steel canopies, trusses for solar roof panels and miscellaneous work using structural steel. The staircase railing, balcony railings, closing of ducts etc shall be of stainless steel. It also include, labour, fabrication, delivery, assembly, erection, lifting, painting / finishing, supervision and Non-destructive testing of welded steelwork. All other

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

incidental works not specified herein mentioned but necessary for the satisfactory completion of the works, shall be deemed to be included. All the specifications for structural steel works shall be as per CPWD Specifications Volume - I & II with correction slips up to the last date of submission of tender documents.

1.8 Plastering work:

The work shall be done in accordance with CPWD specifications Volume - I & II with correction slips up to the last date of submission of tender documents.

Wherever directed by the Engineer in Charge, all joints between concrete frames and masonry in filling shall be expressed by a groove cut in the plaster. Where grooves are not called for, the joints between concrete members and masonry in filling shall be covered by fibre mesh over junctions of concrete and masonry or two dissimilar materials about 200mm wide fixed with GI wire nails etc. which shall be in position before plastering.

1.8.1 Internal/External cement mortar plaster:

Cement mortar plaster 1:4 (1 cement: 4 coarse sand) mixed with water proofing compound on walls which are in contact with water/wet areas shall be provided and finished with wallputty of approved brand and manufacture to make surface smooth as per directions of Engineer-in-charge.

1.8.2 Premixed formulated Gypsum lightweight Plaster:

Internal walls /internal masonry work which are not in contact with water shall be on both sides be plastered with 12mm thick with premixed formulated gypsum lightweight plaster having additives and light weight aggregates as vermiculite/ perlite respectively conforming to IS – 2547 (part I & II) 1976 on hacked / uneven surface such as bare brick/ block / RCC work except the wet areas. Ceiling which is not covered with false ceiling shall be plastered with 6mm thick gypsum plaster of approved makes as per the direction of Engineer-In-Charge.

1.9 Water Proofing Works:

1.9.1 General:

- a) The contractor shall be responsible for the water proofing design, proper installation and performance of waterproofing systems to make the sub grade and superstructure completely watertight.
- b) The contractor shall engage a qualified waterproofing specialist sub-contractor, preferably manufacturer authorized applicator to install or supply & install the waterproofing system, all in accordance with the manufacturer's recommendations & approved water proofing details. For the quality assurance and quality of workmanship, waterproofing specialist applicator should be proficient in handling and installing water proofing membrane and the applicator shall be approved by CPWD qualification criteria.

Waterproofing specialist applicator should have the proven track record, technical reliability, capability and agreement to supply full technical assistance, expert supervision during installation and performance guarantee. The contractor shall submit the name of specialist waterproofing contractor (waterproofing applicator) for approval alongwith work experience certificate of satisfactorily completion of similar nature of three works each costing not less than 40% of estimated cost of water proofing work at that concerned station or two works or one work each costing not less then 60% or 80% respectively of estimated cost of water proofing work at that concerned station. The determination of estimated cost of water proofing work under this item shall be done by the contractor on prevailing market rates and submit it to the respective Engineer-in-charge whose decision shall be final and binding on the contractor.

- c) All basements and sub-structures in contact with earth or water (including foundations, footings, pile caps if required, lift pits, water tanks, fuel tanks, all sunken pits, trenches, etc.) shall be protected by a waterproofing system on all exposed surfaces. Retaining walls forming part of an enclosed usable space and in contact with earth or water shall similarly be waterproofed by an approved membrane system.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

1.9.2 Shop Drawings:

The contractor shall prepare and submit shop drawings to the Engineer-In-Charge. Comprehensive shop drawings showing all the details and procedures for the relevant parts of the works, waterproofing shop drawings shall incorporate all interface details for all drain types. The manufacturer's standard application details shall be used only as a guide for the preparation of shop drawings. The contractor is deemed to have given due consideration to the particular requirements of this contract. Wherever necessary, the contractor is expected to improve upon the manufacturer's standard details to suit the project requirements and such amendments shall be shown in the shop drawings for approval of the Engineer in Charge.

1.9.3 Systems for Waterproofing:

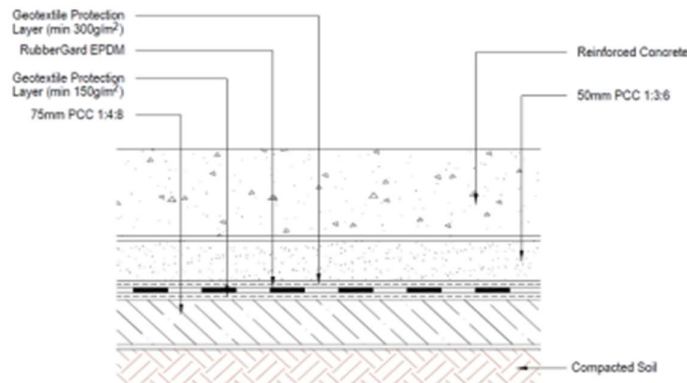
1.9.3.1 Horizontal Waterproofing Below Raft/Footings/Water tanks/Underground Sumps:

Providing and laying waterproofing treatment on compacted, levelled, cleaned lean concrete surface using following materials as per manufacturer specification and as per direction of engineer in charge:

- Providing and laying 150 g/sqm geotextile loose laid over lean concrete surface with 75 mm overlap at joints. The overlapping joint may be secured by stitching or bonding adhesive or hot air gun.
- Providing and laying EPDM membrane 1.5 mm thick loose laid over the geotextile layer. The EPDM sheet should be as large as possible but not less than 6 m unspliced width (no manual joints upto 6 m). Adjacent sheet shall be laid in similar fashion with an overlap of minimum 100 mm. Minimum 75 mm wide rubber polymers butyl splice double sided tape with synthetic rubber polymer prime plus should be used to make watertight quick seam between 2 EPDM membranes. Insertion, corners etc. will be finished using uncured EPDM wherever required.
- Providing and laying a layer of geotextile 300 g/sq.m all over the EPDM membrane. The geotextile membrane must be overlapped for 75 mm (The work shall be carried out from manufacturer approved applicator. The EPDM membrane and its accessories should be from the same manufacturer.)

PROTECTION: Above treatment to be protected by min 50 mm screed all over the treatment. Any civil activity to be carried only after EPDM treatment has been protected by 50mm screed.

METHOD OF LAYING EPDM BELOW RAFT/FOOTINGS



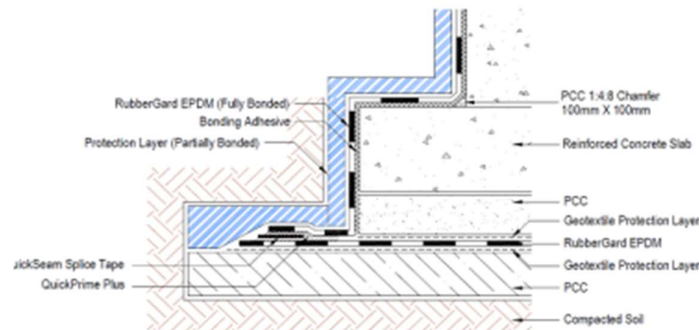
1.9.3.2 Vertical waterproofing in retaining wall/ walls with Raft/Vertical columns/Water tanks/Underground sumps:

Providing and laying waterproofing treatment on smooth, hard, dry and free from dust vertical surface using following materials as per manufacturer specification and as per direction of engineer in charge.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

- a) 1.1mm thick EPDM MEMBRANE is fully bonded to the RCC surface using FM approved neoprene base bonding adhesive. Bonding adhesive is used to adhere the membrane to the retaining wall. The adjacent EPDM membrane should be overlapped for 100 mm. Overlap joints will be sealed using double sided splice tape 75 mm wide and quick prime plus primer. Membrane to have intermediate anchoring after every 3 meters peripherally. All the insertions shall be treated using uncured EPDM. The treatment to be terminated at least at the height of 300 mm above the ground level using termination bar and fasteners. Water block sealant should be used on top edge behind membrane and lap sealant should be applied.
- b) A protective layer of approved make dimpled/studded membrane having weight 500g/sq.m is spot stuck on the EPDM treatment with approved neoprene base bonding adhesive. (The work shall be carried out from manufacturer approved applicator. The EPDM membrane and its accessories should be from the same manufacturer.)

METHOD OF LAYING EPDM in retaining wall/ walls with Raft/Vertical Columns.



1.9.3.3 TERRACE SLAB/PODIUM SLAB WATER PROOFING :

RCC substrate should be hard dry and free from dust, grease and sharp protrusions. This EPDM is to be laid at the top of over deck insulation. Over deck insulation shall be designed for appropriate thickness complying in U-value as per the latest guidelines of ECBC.

Providing and laying waterproofing treatment on smooth, hard, dry and free from dust RCC roof surface with 1.1 mm thick EPDM membrane fully bounded to the RCC surface using factory mutual approved neoprene based bonding adhesive. The sheet should be as large as possible but not less than 6m unspliced width (nominal joints up to 6 m). EPDM membrane to be loose laid over a layer of geotextile 200 g/sqm loose laid with over lap of 100 mm joint spot stuck with bonding adhesive or stitched. Minimum 75 mm wide rubber polymers butyl double sided tape with synthetic rubber polymer quick prime should be used to make water tight quick seam between two EPDM membranes. Insertions & corners etc. to be finished with using quick seam uncured EPDM wherever required. All the insertions shall be treated. The treatment to be terminated as per site situations and as per direction of Engineer-in-charge. For esthetic purpose, the top of EPDM membrane is to be finished with heat resistant tiles as per attached particular specifications. EPDM is to be taken up to the height of 300 mm, which will be fully bonded & terminated with aluminum termination bar using water block sealant and lap sealant and fasteners as per manufacturer. Over the membrane 500 g/sqm to be loose laid joint spot stuck with bonding adhesive. (The work shall be carried out from manufacturer approved applicator. The EPDM membrane and its accessories should be from the same manufacturer). Terrace slab to be protected with heat resistant tiles (300mmx300mm) as per particular specifications given in this document.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Method of Laying EPDM, Insulation and HR Tiles on Terrace Slab (Figure-X)

Heat Resistant Tiles (300x300) as per attached Specifications
Geotextile Protection layer > 500 gsm
EPDM Membrane
Geotextile Protection layer > 200gsm
Over deck Insulation as per attached specifications
RCC Structural Slab/Deck

Standards and Tests (Certificates must be submitted):

The testing shall confirm the manufacturer's specifications and results.

1.9.3.4 Crystalline Waterproofing:

- Water proofing of all water retaining structures such as Underground Tanks / Sumps, STP sumps, overhead tanks etc. shall be done by using crystalline chemical by mixing it in concrete. These structures shall be waterproofed by providing internal waterproofing layer by integral crystalline admix as per DSR 2023. Crystalline admixtures a cementations dry powder to be added minimum @ 0.8% (Dosage) by weight of cement or higher in designed concrete mix of the entire thickness of raft and retaining wall.
- Water proofing of all water bodies / water falls etc. shall also be done by using crystalline waterproofing chemical by mixing it in concrete.
- Crystalline chemical shall be mixed in manufacturer's dosage at the time of production of concrete in plant.
- Controlling specifications shall be of original manufacturer shop drawings (Private Label Supplier Shop Drawings not acceptable) and Original Manufacturer Method Statement (Pvt Label Supplier Method Statement not acceptable) after due approval of Engineer-in-charge.

1.9.3.5 Toilet / Balcony / Kitchen/Canteen/Pantry Area Waterproofing System:

Cement slurry mixed with waterproofing cement compound system as per CPWD specifications and as per direction of Engineer in Charge

1.10 Construction Joint:

Providing and placing in position suitable Synthetic Rubber swelling water stop specially designed for construction joints in concrete with the help of suitable adhesive. It should be capable to swell 1000% of its original volume to seal the construction joint and stop water. It should be trapezoid, flexible rubber strip of size 5x20mm having density of 1.2-1.25gm/cm³ having tensile strength more than 3mpa. It should be capable to withstand water pressure resistance more than 0.8mpa (8bar).

1.11 Pressure-Release Pipes penetrations:

Contractor shall provide pressure-release pipes penetrations in raft, min 50 mm diameters or as per design requirement for water pressure of soil. Pipes shall be sealed all around on the laid membrane with a 2 component liquid membrane as per system requirement and as per instruction of Engineer in charge. All systems to be installed as per system requirement, etc. complete

1.12 Aluminum extrusions (Wherever applicable):

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

Accepted aluminum extrusions and / or sheet of alloy and grades suitable for the structural requirements and project conditions having required strength and durability of the alloy and designated in the relevant standards. Details including proposed alloy types with supporting justification data shall be submitted by the contractor for approval. Minimum wall thickness for the structural members shall be 2.5mm & non-structural member shall be 1.5mm thick. Extruded profiles shall be free from die lines, pressure marks, scratches or graphite lines. Solid Aluminum sheet shall be of Alloy 5005 H14 Series.

1.12.1 Finishes to Aluminum:

Different types of coatings / finishes applicable to Aluminum shall be used as per the approval of consultant appointed by the contractor in consultation with respective Engineer-in-Charge, CPWD.

1.12.2 Welding of Aluminum:

All welding work to be carried out, including detailing of all joints, welding procedures, appearance and quality of welds, and correction of defective work in accordance with approved samples. Finished welds shall be de-scaled, free of any surface & internal cracks and free of porosity.

1.12.3 EPDM Gasket:

All unexposed weather gaskets shall be of EPDM micro wave cured gaskets confirming to CPWD specifications.

1.12.4 Nuts, Bolts, Screws and Fasteners:

All Bolts & Nuts for non-visible area shall be Stainless steel A2 grade (304 Grade).

All Bolts & Nuts for visible area shall be Stainless Steel A4 Grade (316 Grade).

1.12.5 Sealants:

Comply with minimum dimensional requirements for edge clearance, edge cover, front clearance, back clearance as per CPWD specifications/ manufacturer specifications. Sealant manufacture shall be providing testing for adhesion, compatibility & non-staining where sealants are used to seal movement joints, movement capability of sealant shall be appropriate to expected maximum deflection or movement. All required accessories recommended by sealant manufacturer, including backing rods, bond breaker tape details to be submitted for review and acceptance to Engineer in Charge. Deglazing should be used as method of quality inspection for units which are structurally glazed.

1.12.6 Backer Rods:

Backer rods shall be silicone compatible, non-gassing, non-staining and non-combustible. They are to be compressed to limits specified by the manufacturer and shall be located in a manner which prevents them from dislodging from the rebate that is being sealed. Backer rods shall not inhibit movement joints from allowing the designed movement of the joint from occurring.

1.12.7 Setting Block/ Side Block/ Pads:

Setting blocks shall comply with CPWD specifications/ manufacturer specifications

1.12.8 Hardware for openable vents and windows:

All fasteners shall be MS hot dip galvanized. Facade contractors shall submit technical catalogue including the test results of each hardware for approval to Engineer in charge. Friction / Casement hinges in SS 316 shall be self-balancing type with provision to hold open up to 150mm. It should comply with manufacturer specifications.

1.12.9 Glass for Structural Glazing / Windows / Railings / Canopy:

The glass will comply with ECBC 2017 and CPWD specifications.

1.12.10 Tests for Structural Glazing (If applicable):

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

Testing of structural glazing system shall be as per CPWD specifications/ manufacturer specifications/ECBC 2017 and relevant BIS codes.

1.12.11 Exterior Grade Aluminium Composite Panels and Horizontal Louvers:

The work of Exterior grade Aluminium Composite Panels (Fire Retardant) and Louvers work shall be got executed by a specialized contractor as approved by the Engineer-in-charge. Necessary shop drawings for the exterior aluminium composite panels shall be prepared by the specialized contractor and submitted to Engineer-in-charge for approval. Only after approval from the Engineer-in-charge, the specialized contractor will go ahead with procuring and installing the exterior grade perforated or Aluminium Composite Panels and Louvers works.

- a) The Contractor shall be responsible for the detailed engineering design development of entire work and the provisions of all labourers, materials, fabrication, assembly, packing, installation, coordination with adjacent construction. Exterior grade Aluminium Composite Panels and Louvers shall be as per the Architectural drawings prepared by the architect of the contractor duly approved by Engineer-in-Charge of CPWD.
- b) This work shall be got executed through specialized contractor. The engagement of specialized contractor shall be as per condition number 1.29 for engagement of contractor for specialized works under chapter A. Only specialized contractor approved by Engineer-in-charge in accordance with terms and conditions will be allowed to execute this item/work.

The CPWD specifications shall be followed as per DSR 2023 for this work.

1.12.12 RCC Jali:

RCC Jali shall be 75 mm thick with M30 concrete and shall be smooth finished on both side with texture paint all over. Detailed drawings and design shall be prepared by consultant appointed by the contractor and as approved by Engineer –in-charge.

1.12.13 SS railing :

SS railing shall be of SS 304 grade and top of railing shall be 1200 mm from finished floor level, maximum centre to centre spacing between members shall not exceed 125 mm. Size of members should be not less than 50 mm dia. and thickness of members not less than 3 mm. Detailed drawings, pattern, design and fixing arrangements shall be prepared by consultant appointed by the contractor and as approved by Engineer –in-charge.

1.12.14 Plastered Surface:

The work shall be done in accordance with CPWD Specifications Vol. I to Vol. II with upto date Correction slips and IS Codes listed in CPWD specifications shall form a part of this document with all latest codes. Ceiling plaster shall be completed before commencement of wall plaster. Plastering shall be started from the top and worked down towards the floor. All putlog holes shall be properly filled in advance of the plastering as the scaffolding is being taken down. To ensure even thickness and a true surface, plaster about 15 × 15 cm shall be first applied, horizontally and vertically, at not more than 2 metres intervals over the entire surface to serve as gauges. The surfaces of these gauged areas shall be truly in the plane of the finished plaster surface. The mortar shall then be laid on the wall, between the gauges with trowel. The mortar shall be applied in a uniform surface slightly more than the specified thickness. This shall be brought to a true surface, by working a wooden straight edge reaching across the gauges, with small upward and side ways movements at a time. Finally the surface shall be finished off true with trowel or wooden float according as a smooth or a sandy granular texture is required. Excessive troweling or over working the float shall be avoided. All corners, arrises, angles and junctions shall be truly vertical or horizontal as the case maybe and shall be carefully finished. Rounding or chamfering corners, arrises, provision of grooves at junctions etc. where required shall be done without any extra payment. Such rounding, chamfering or grooving shall be carried out with proper templates or battens to the sizes required. Where the thickness required as per description of the item is 20 mm the average thickness of the plaster shall not be less than 20 mm whether the wall treated is

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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of brick or stone. In the case of brick work, the minimum thickness over any portion of the surface shall be not less than 15 mm while in case of stone work the minimum thickness over the bushings shall be not less than 12 mm. Curing shall be started as soon as the plaster has hardened sufficiently not to be damaged when watered. The plaster shall be kept wet for a period of at least 7 days. During this period, it shall be suitably protected from all damages at the contractor's expense by such means as the Engineer-in-Charge may approve. The dates on which the plastering is done shall be legibly marked on the various sections plastered so that curing for the specified period thereafter can be watched. The plaster shall be finished to a true and plumb surface and to the proper degree of smoothness as required. The work shall be tested frequently as the work proceeds with a true straight edge not less than 2.5 m long and with plumb bobs. All horizontal lines and surfaces shall be tested with a level and all jambs and corners with a plumb bob as the work proceeds. Any cracks which appear in the surface and all portions which sound hollow when tapped, or are found to be soft or otherwise defective, shall be cut out in rectangular shape and redone as directed by the Engineer-in-Charge.

1.13 Flooring Works:

1.13.1 General:

Various types of flooring, skirting, dado and window sill work shall be carried out by the contractor as per broad schedule of finishes attached in this NIT document and as per detailed drawings prepared by the consultant architect of the contractor and approved by Engineer-in-Charge of CPWD. Contractor needs to refer various rooms in each building as per indicative attached architectural drawings in this NIT document.

- 1) Contractor will submit all material or finishing samples to Engineer in charge for approvals before executing the respective jobs.
- 2) Contractor shall need to protect the finished floor surface during execution of other activities using Cello or approved equivalent bubble guard of minimum 500 GSM thick (minimum size 8' x 4'), fixing the same over floor surface with mastic tape or other approved adhesives. Removing protective layer during handing over, disposal of all debris out of site, cleaning the entire covered flooring area as directed by the Engineer-in-charge.
- 3) All flooring, skirting, dado and window sill works will be done in accordance with CPWD specifications Volume I & II with correction slips up to the last date of submission of tender documents. The provision of IS Codes listed in CPWD specifications shall form a part of this document with all latest codes.
- 4) Pattern for any type of flooring / dado shall be as per detailed drawings to be submitted. The cost of flooring work is inclusive of all materials, workmanship, labourers, pattern, colour, style, skirting etc. complete in all respect. No extra payment on this ground shall be entertained. The joints for all flooring to run in a straight line and should follow as mentioned below:
 - a) For Marble stone flooring and dado: 0mm (Zero mm) joint filled with approved adhesive other and else specified.
 - b) For any type of Tile / Granite / Kota Stone floor & dado: 3mm joint shall be maintained with spacer and joint filled with epoxy grout.

Contractor shall need to protect the finished floor surface during execution of other activities using Cello or approved equivalent bubble guard of minimum 500 GSM thick (minimum size 8' x 4'), fixing the same over floor surface with mastic tape or other approved adhesives. Removing protective layer during handing over, disposal of all debris out of site, cleaning the entire covered flooring area as directed by the Engineer in charge.

1.13.2 Window / Glazing Sill:

Stone for window / glazing sill to be in approved premium quality as mentioned in broad finishes details attached in the NIT document. Stone for sill to be minimum 16mm thick and all exposed edges of sills shall be chamfered, half or full bull nosing with mirror polishing should be factory

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

finished and brought to site. All polishing work and laying details for stone work shall be as per CPWD specifications and as directed by Engineer in charge.

1.13.3 Granite Stone Work:

This can be read for Flooring / Skirting / Dado / Cladding works. Machine cut granite stone slabs shall be of thickness not less than 16mm thick. Color of granite shall be uniform and the slabs free from all defects. The granite color shall be proposed by the consultant architect of contractor in consultation with Engineer-in-Charge of CPWD. Stone slabs used at site shall be machine-cut. The slabs shall be made from selected stock, which are hard, sound, homogeneous and dense in texture and free from flaws, angles and edges shall be true, square, and free from chipping and surface shall be plane. The slabs shall preferably to machine cut the required dimensions. In machine-cut slabs, edges shall be protected from any damages in transit. No breakage shall be permitted. All edges shall be sharp, perfectly rectangular. Edges shall be pencil-rounded and polished for exposed corners and faces. Test for stone slabs shall be conducted in accordance of relevant BIS codes / CPWD specifications for stone properties. Stone sealer of approved makes which give excellent repellence against water and oil based stains is to be applied on top surface of the stone. One coat will be applied on the unpolished cut to size before installation and then the cut to size stones are installed. After the final polish the second coat of stone sealer will be applied on top side and a buffing done after about 24-36 hours. Laying of granite stone work shall be carried out as per CPWD specifications.

1.13.4 Glazed Vitrified tiles matt finish and Rectified Glazed Ceramic Tile Work:

The Vitrified tiles shall be matt finish and Ceramic tiles shall be Rectified Glazed Ceramic Tiles of 1st quality. The work shall be carried out in areas as mentioned in broad schedule of finishes attached with the NIT document and as approved by Engineer-in-Charge of CPWD and as per the latest CPWD specifications Volume-I and II with correction slips up to the last date of submission of tender. The tiles shall be confirming to the related BIS codes up to the latest revisions. The testing shall also be got done from approved labs in accordance with the BIS codes for the various parameters and as referred. The contractor has to obtain prior approval of Engineer in charge for tiles makes, sizes, shades and colours as per Architectural drawings before bringing it to site.

1.14 Finishing work:

The finishing work shall be executed as per the drawings prepared by the architect of the contractor and approved by Engineer-in-Charge of CPWD. The contractor shall provide minimum three samples for each finishing items to Engineer in charge for approvals prior to execute the work.

All types of paints, polishes, primers to have low VOC content as per the GHAR–Green Plus rating requirements. The contractor will need to submit all relevant documents to satisfy GHAR–Green Plus rating norms to Engineer in charge pertaining to the finishing work.

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. The paint shall be obtained in smaller packing (around 20 litre). The paint shall be kept in the joint custody of the Department and the Contractor and day-to-day account of receipt and issue shall be maintained. However, the safe custody and watch and ward shall remain to be the responsibility of the Contractor. Nothing extra shall be payable on this account. The name of the manufacturer, manufacturer's product identification, manufacturer's mixing instructions, warnings and instructions for handling and application, toxicity and date of manufacturing and shelf life shall be clearly and legibly mentioned on the labels of each container. These details shall be kept in record. The material shall be consumed in the order of material brought to site, first come first consume basis. The Contractor shall obtain and submit to the Department the manufacturer's certificate for compliance of the various characteristics of the materials as per the manufacturer's specifications and also copy of the manufacturer's test report for the record. Empty containers of the paints shall not be removed from site till the completion of the work unless otherwise permitted and shall be removed only with the permission of the Engineer-in-

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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Charge or his authorized representative at site of work. All arrangements for measuring, dosing etc. at site shall be made by the Contractor. Nothing extra shall be payable on this account. The Contractor shall apply samples of each kind of paint for the approval of shade and colour as per the directions of the Engineer-in-Charge before procuring the paint in mass. All incidental charges of cartage, storage, wastage, safe custody, scaffolding, cost of samples and mock ups etc. shall be borne by the Contractor and no claim, whatsoever, shall be entertained on this account.

1.15 SANITARY WORKS:

1.15.1 Fixture & installation:-

- 1) Work under this section shall consist of providing and fixing and installing all sanitary fixtures, chromium plated fittings and accessories as required as per drawings to be prepared by contractor and approved by E-in-C/Architect of CPWD.
- 2) Without restricting to the generality of the foregoing the sanitary fixtures & fittings shall include the following:
 - a) Sanitary fixtures
 - b) Chromium plated fittings
 - c) Stainless steel sinks
 - d) Accessories e.g. toilet paper holders, coat hook, dispenser etc.
- 3) Whether specifically mentioned or not all fixtures and appliances shall be provided with all fixing devices, nuts, bolts, screws, hangers as required.
- 4) All exposed pipes within toilets and near fixtures shall be chromium plated brass or copper unless otherwise specified.

1.15.2 General:

- 1) All materials, sanitary fixtures and fittings shall be new and of best Premium quality confirming to CPWD specifications and subjected to the approval of Engineer in charge. Wherever particular makes are mentioned, the choice of selection shall remain with the Engineer in charge.
- 2) All appliances, 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 terms of specifications, and drawings. Accessories shall include proper fixing arrangements, brackets, nuts, bolts, screws and required connection pieces.
- 3) Fixing screws shall be half round head chromium plated brass screws with C.P. washers where necessary.
- 4) Porcelain sanitary ware shall be glazed vitreous china of first quality free from warps, cracks and glazing defects confirming to I.S. 2556.
- 5) Sinks for pantry or kitchen shall be stainless steel or as specified in the Drawings.
- 6) Chromium plated fittings shall be cast brass chromium plated of the best quality approved by Engineer in charge.
- 7) All Appliances, fittings and fixtures shall be fixed in a neat workmanlike manner true to level and heights shown on the drawings and in accordance with the manufacturer's recommendations. Care shall be taken to fix all inlet and outlet pipes at correct positions at proper locations and heights. Faulty locations shall be made good and any damages to the finished floor, Filing Plaster, Paint, insulation shall be made good by the Contractor at their own cost.
- 8) Sanitary appliances, subject to the type of appliance and specific requirements, shall be fixed in accordance with the relevant standards and the following :
 - a) Contractor shall, during the entire period of installation and afterwards protect the appliances by providing suitable cover or any other protection so as to absolutely prevent any damages to the appliances until handing over. (The original protective wrapping shall be left in position for as long as possible).
 - b) The appliances shall be fixed in a manner such that these will facilitate subsequent removal if necessary.

- c) All appliances shall be securely fixed. Manufacturers' brackets and fixing methods shall be used wherever possible. Compatible rust- proofed fixings shall be used. Fixing shall be done in a manner that minimizes noise transmission.
 - d) Pipe connections shall be made with demountable unions. Pipe work shall not be fixed in a manner that it supports or partially supports an appliance.
 - e) Appliances shall be fixed so that water falls to the outlet.
 - f) Appliances shall be fixed true to level firmly fixed to anchor or supports provided by the manufacturer and additional anchors or supports where necessary.
- 9 Sizes of Sanitary fixtures given in CPWD specifications or in the Drawings are for identification with reference to the catalogues of makes considered. Dimensions of similar models of other makes if allowed will not vary more than 2% of dimensions and the same shall be provided and no claim for extra payment shall be entertained nor shall any payment be deducted on this account.

1.15.3 Sanitary Fixtures:

- 1) WC, Urinal, partition, was basins, sinks, showers, toilet paper holder, towel rail, hand drier etc. shall be of premium quality of approved makes, as per architectural drawings prepared by the architect of contractor and approved by architect of CPWD, requirement of space, location complete in all respects including accessories, labour, workmanship etc.
- 2) Colour shades, shapes, sizes shall be selected and approved by the architect of the CPWD.
- 3) All appliances, fixtures and fittings shall be tested as per CPWD specifications. The contractor shall block the ends of waste and ventilation pipes and shall conduct an air test.

1.15.4 Fixture and Flow rates:

Supplying, installation testing and commissioning of all fixtures of given flow rates as per GHAR-Green Plus star norms shall be followed including SITC of all accessories, bottle trap, WC pan connector etc. Makes and models shall be got approved by Engineer in charge. Auto/ sensor operated faucets/ traps/ urinals/ WC etc. wherever required shall be adopted as GHAR-Green Plus star norms and drawings prepared by Architectural consultant of the contractor.

1.15.5 Internal Drainage:

- 1) Internal drainage shall be designed by the contractor and got approved by Engineer-in-charge. The shop drawings shall be prepared by the architect of the contractor and got approved by the Engineer-in-charge..
- 2) Work under this section shall consist of providing and fixing all labourers, materials, equipment's and appliances necessary and required to completely install all soil, waste, vent, rain water pipe and fittings as per relevant BIS code and CPWD specifications.
- 3) Without restricting to the generality of the foregoing, the soil, waste, vent, rain water pipe system shall include the following:-
 - a) Soil, waste and vent pipes, Vertical and Horizontal and fittings, joints, clamps and connection to sewer line as shown on the drawings at Ground Floor level.
 - b) Floor and Urinal traps, Cleanout plugs and inlet fittings.
 - c) Waste pipe connection from all fixtures e.g. washes basins, sinks, urinals, kitchen equipments and plant room equipments.
 - d) Rain water pipes & fitting (Terrace Rain Water and Balcony Drain).
 - e) All pipe fittings exposed or on wall shall be painted with two or more coat of desired shade and color. All sanitary fittings, hanger where no sunken floor provided.
 - f) Testing of all pipes as per relevant codes from external labs.
- 4) The scope also include access doors/opening for clean out, accessible for maintenance i/c MS ladder, platform etc. at suitable locations with primer and paints complete.

1.15.6 SOIL, WASTE & VENT PIPE SYSTEM:

The soil, waste system above ground has to be planned as "Two Stack System" [Double Stack System] as defined in IS : 5329 having separate pipes for waste for wash basins, showers, bath

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

tub, kitchen sinks, Floor drains, AHU's, condensate drain and separate pipe for soil discharge. All piping work shall be executed as per CPWD specification and shall be got tested. All soil waste, vent, sanitary pipes of required diameter as per design shall be hubless centrifugally C.I.(Span) pipe epoxy coated inside & out side as per IS-15905.

1.15.7 CCI HUB-LESS PIPE :

- 1) Soil, waste, vent, anti-siphonage and sanitary pipes, fittings and accessories like P-traps, bends, wye's, elbows, Tee's, swept tee's etc. shall be of Hubless Centrifugally cast (spun) iron pipes epoxy coated inside & outside including SS-304 grade coupling with EPDM rubber gasket of appropriate diameter conforming to IS:15905. All pipes shall be straight and smooth and their inside free from irregular bore, blow holes, cracks and other manufacturing defects.
- 2) All vertical stack shall be 100 mm away from the wall by providing adjustable clamps/angle etc whichever required.
- 3) All indirect water pipes inside toilet from wash basin, Sink, Urinal shall be GI heavy class.
- 4) CI Hubless Pipes and Fittings shall be conforming to IS: 15905. All pipes supports and clamps shall be as per specifications and recommendations of the manufacturer.

1.16 WATER SUPPLY:

1.16.1 Work under this section consists of providing and fixing stainless steel pipes and fittings as per DSR 2021 with all labourers, materials, equipments and appliances necessary as required to complete the water supply system (Domestic Water Supply + Dual Flushing Water Supply) as required as per design and water supply system. The contractor shall submit plan of water supply distribution system of the building both internal and external in accordance with relevant BIS Code and duly approved by Engineer in charge.

1.16.2 Without restricting to the generality of the foregoing, the water supply system shall include the following:-

- a) Hydro-pneumatic supply from Domestic / Flushing/ Soft Water/ Irrigation Water UGT to all fixtures/appliances.
- b) Thermal insulation to hot water pipes & valves.
- c) Connections to all fixtures etc.
- d) Ball valve/butterfly valve/Non Return valve/Pressure Reducing Valve/Water Meter.
- e) All supports made of galvanized iron.

1.16.3 All concealed pipes fittings bends for water supply shall be of stainless steel 316 grade of required diameter as per drawing and design. The scope includes smooth flow of water supply pipes with equitable and proper distribution of pressure.

1.16.4 Valves and other appurtenances shall be located as to provide easy accessibility for operations, maintenance and repairs.

Pipe shall be securely fixed to wall and ceiling by suitable and adjustable clamps at intervals specified.

1.16.5 Stainless Steel Pipes: - Domestic, Flushing Water, Soft Water running in shafts, inside toilets, on terrace, in basement and in Pump Room.

1.16.6 Supplying, installing testing and commissioning of Stainless Steel 316 grade pipes including all bends, tee, union, coupling, adaptor, etc. Pipes supplied shall have a smooth outer surface, with external weld bead removed. Pipes to be supplied with ends capped to prevent ingress of deleterious material. Pipes shall be horizontally marked:

- a) Brand
- b) Standard
- c) Size – OD x thickness

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

- d) Pipe Fittings Brand: All pipe fittings shall like bends, tees, union, coupling, adaptors etc. Shall be of stainless steel 316 grade with press ends and shall be made as per relevant code suitable for hot and cold water applications and be capable of withstanding pressures up to 16 bar.

1.16.7 GI Pipes:- Including Fittings and Valves (Sump Risers, Pipes Running in Trenches):

- (i) All pipes inside the buildings and outside the building shall be galvanized steel tubes conforming to IS: 1239.
- (ii) Fittings shall be of malleable galvanized iron of approved make. Each fitting shall have manufacturer's trade mark stamped on it. Fittings for G.I pipes shall include couplings, bends, tees, reducers, nipples, unions, bushes etc. fittings etc. shall conform to IS : 1879. (Part 1 to X) 1987.
- (iii) All excavation, trenching, painting, sand filling, pipe protection and pipe installation shall be as per CPWD specifications and directions of engineer in charge.

1.16.8 Ball Valves:

All ball valves shall be heavy duty of approved make. Valves shall have suitable for test pressure of 25 Kg/Sqcm. Ball valves shall conform to the following specifications.

Size	Construction	Ends
15 to 50 mm	Bronze body S.S. Working Part stainless steel balls, spindle, teflon seating and gland packing, steel handle.	Screwed

1.16.9 Butterfly Valves:

All butterfly valves shall be heavy duty cast iron of approved make. The valves shall be suitable for 15 Kg/Sqcm test pressure & shall conform to the following specifications Butterfly valve shall be of best quality conforming to IS: 13095:

Butterfly Valves shall be cast iron body with following details:-

- a) Disc shall be CI heavy duty electrolyses nickel plated abrasion resistant.
- b) The shaft be EN-8 Carbon Steel with low friction nylon bearings.
- c) The seat shall be drop tight constructed by bonding resilient elastomer inside a rigid backing.
- d) Built in flanged rubber seals.
- e) Actuator to level operated for valves above ground and T Key operated for valves below ground.
- f) Built in flanges for screwed on flanged connections.
- g) Manufacturer's details on fixing and installation will be followed.

1.16.10 Ductile Iron (DI) Pipes: - (For Water Line from Municipal line to UGT):

- a) Pipe laid in ground for water supply from municipal connection shall be laid in trenches/underground shall be of DI class K-9 of required dia and size as per drawing/design including trenching necessary fittings like collar bends and tees with titan joints. The technical specification of ductile iron pipe confirm to indian standard IS : 8329-1994, IS : 2531-1998.
- b) The ductile from pipe shall be strong, both inner and outer surfaces are smooth, free from lumps, cracks blister and scares.
- c) The ductile iron fitting shall confirm to IS: 9523-1980.
- d) The joints for ductile iron pipe shall suitable for rubber gasket conforming to IS :5383
- e) Laying and jointing shall be similar to cast iron pipes.
- f) The test pressure shall be 1.5 times the maximum sustained operating pressure and the test pressure shall be as per IS: 8329-1994.
- g) Slotted angles/ channels shall be measured per linear metre of finished length and shall include support bolts and nuts, length embedded in the cement concrete blocks of 1 : 2 : 4 (1 cement : 2 coarse sand : 4 stone aggregate 20mm nominal size) formed in the masonry

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

walls; nothing extra shall be paid for the cement concrete block and making good the masonry wall, anchor fasteners etc. complete.

1.16.11 Non-Return Valves:

- a) All non-return valves shall be provided as shown in the drawings conforming to relevant Indian Standards and in accordance with the following specifications.

Size	Construction	Ends
Upto 50 mm.	Gun metal	Screwed
65 mm and above	Gun metal/cast iron	Flanged

Non-return valves shall be of approved make.

1.16.12 GI Pipes and Fittings:

Supply, installation, testing & commissioning of garden hydrant main pipe shall be of G.I. Pipes Class 'C' (Heavy grade) conforming to I.S. 1239 with G.I. Fittings conforming to IS: 1879 (Part I to X) such as tees, crosses, plug, socket, elbows, reducers, flange, check nut, flanges & clamps, hanger, structural steel supports as required/directed at Site.

1.17 External Sewer, Storm Water Drainage and Rain Water Harvesting Pits:

- 1) All underground Storm Water Drainage Pipe of the building shall be laid in proper slope and required pipe and material capable to smooth flow of water in accordance with designed system.
- 2) The scope includes all catch basin, storm manholes, gully chambers, gratings.
- 3) All underground Storm Water Drainage work include earth work in excavation for all type of soils, disposal, and compaction, pipe laying, pipe embedment and back filling, testing complete.
- 4) Submit shop drawings details and descriptive literature showing pipe dimension, joint and fitting details, recommended method of cutting pipes and other relevant detail etc. all complete for the approval of engineer incharge.
- 5) Taking approvals and all liaiseing work shall be the responsibility of the contractor.

1.18 SANITARY INSTALLATIONS /WATER SUPPLY / DRAINAGE:-

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. 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.

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.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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The work in general shall be carried out as per CPWD Specifications 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.

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.

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.

1.18.1 General Requirements:

- (i) All materials shall be new and of the best quality conforming to CPWD specifications.
- (ii) Establish and maintain quality control to assure compliance with contract document and local codes (Local municipal bye Laws).
- (iii) All Storm Water Drainage Line/Open Drain Channel shall be laid to the required gradients and profile as per cpwd specifications.
- (iv) All drainage work shall be done in accordance with Local Municipal bye laws.

1.18.2 Manholes and Chambers:

All manholes, chambers and other such works as specified shall be constructed in brick masonry as per CPWD specification or as specified in the drawings.

1.18.3 Engagement of contractor for specialized civil works:

Contractor has to engage specialized associate agencies for specialized items of works separately.

Contractor after executing these specialized works through its associated specialized agencies/specialized firm has to submit the guarantee bonds for 05/10 yrs (Five/Ten years) from date of completion of defect liability period mentioned in this NIT document for removal of any defects cropping up in these specialized works executed by them during the said guarantee period. The various forms of these guarantee bonds to be executed by both contractor and specialized agency are given at Annexure-VI & VII. The various specialized items of works under this agreement in respect of civil construction are as under:-

1. Water proofing treatment works (on roof, basement, UG tanks, toilets etc)
2. Exterior grade Aluminium Composite Panel & Louvers (If applicable)
3. Structural Glazing System (if applicable).
4. Aluminium door, windows, ventilator work & fire rated door.

As mentioned above 05/10 years (Five/Ten years) guarantee bond shall be submitted by the contractor which shall also be signed by both the specialized agencies and the contractor to meet their liability / liabilities under the guarantee bond. However, the sole responsibility about efficiency of above mentioned specialized works shall rest with the contractor.

10% (Ten percent) of amount of the estimated cost of above mentioned specialized works shall also be retained as Security Deposit and the amount so deducted shall be released after completion of guarantee period from date of completion of defect liability period mentioned in this NIT document/ agreement, if the performance of the said executed items are found satisfactory by respective Engineer-in-Charge.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

If any defect is noticed during the guarantee period, the contractor shall rectify it within 07days 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 contractor at the risk and cost of contractor. Further this security deposit can be released in full after expiry of defect liability period, if bank Guarantee of equivalent amount for Full 5/10 (Five/Ten) years after completion of defect liability period mentioned in this NIT document, is produced and deposited with the respective Engineer-in-charge.

- 1.19 Approval of the specialized agencies for each specialized work at shall be obtained from the respective Engineer-in-Charge within one month of award of work. Even if, such specialized items of work shall be executed by the specialized agencies at later date the work shall be deemed to be executed by the tenderer for all purposes and the responsibility of the quality of items of works executed etc. shall continue to be that of the tenderer only.

List of References:

- Hand book of Water Supply and Drainage, Bureau of Indian Standards.
- SP-35 (S&T) 1987.
- Manual of water supply & Treatment–1997, Central Public Health and Environmental Engineering Organization.
- Manual on Sewerage and Sewage Treatment revised upto 1993 (Ministry of Urban Development, New Delhi), (Govt. of India)
- Schedule of specifications of C.P.W.D. revised upto 2019, (Govt. of India) with all latest amendments issued from time to time
- National Building Code -2016 by Bureau of Indian Standards.
- Code of practice for provision and maintenance of water supplies for firefighting IS: 9668:1990
- Other relevant ISI codes.
- Code of basic requirement for water supply, drainage and sanitation IS:1172:1983 by Bureau of Indian Standards.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

ADDITIONAL CONDITIONS

1.0 COMPLIANCE WITH LOCAL BYE-LAWS, RULES AND REGULATIONS

The 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. The contractor shall give due notices to the Municipality, Gram Panchayat, Police and /or other authorities as may be required under the law / rules under force and obtain all requisite licenses / permissions to carry out the work and pay all charges which may be leviable on account of his execution of the work under the agreement. Nothing extra shall be payable on this account.

In the event of any restrictions being imposed by security and traffic agencies 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 this account. The loss of time on this account, if any, shall have to be made up by generating additional resources etc.

2.0 PROTECTION OF EXISTING STRUCTURES / SERVICES AND INTERFERENCE WITH OTHER WORKS

The contractor shall protect existing drains, pipes, cables, overhead wires, sewer lines, water lines and other services encountered in the course of execution of the work, and shall repair any damage caused by him 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.

The contractor shall carry out 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 contractors. 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.

3.0 JURISDICTION OF COURT

Courts at Bhubaneswar, Dist: Khorda alone shall have the jurisdiction to decide any dispute arising out of or in respect of this contract.

4.0 SAFETY PRACTICES AND SUPERVISION

- (i) Necessary protective and safety equipment shall be provided to the Site Engineer, Supervisory staff, labour and technical staff of the contractor by the Contractor at his own cost and to be used at site.
- (ii) 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.
- (iii) In addition to the supervision of work by CPWD engineers, the safety teams deployed by the client if any (Authority), 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.
- (iv) 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 record measurements in computerized measurement book duly checked shall be deposited with Engineer-in-Charge or his authorized representative, prior to hiding these items.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

- (v) The contractor shall follow “Safety, Health and Environment Handbook- 2019” issued by CPWD in 2019.

5.0 Maintenance of Register: Site Order Book shall be kept at site. All test registers, and MAS registers issued by the Engineer-in-Charge shall be maintained by the contractor which will be reviewed by the officers of CPWD at regular intervals.

Maintenance of Register of Tests –

- (i) All the registers of tests carried out at Construction Site or in outside laboratories shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge.
- (ii) All Samples of materials including Cement Concrete Cubes shall be taken jointly with Contractor by JE/AE and out of this at least 50% samples shall be taken in presence of AE in charge. If there is no JE, all Samples of materials including Cement Concrete Cubes shall be taken by AE jointly with Contractor. All the necessary 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 JE/AE. At least 10% of the tests are to be witnessed by the Executive Engineer / Executive Engineer and Senior Manager.
- (iv) Minimum 10% test should be conducted in outside approved lab as directed by Engineer-in-Charge.
- (v) All the entries in the registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by JE/AE/AEE/EE.
- (vi) Contractor shall be responsible for safe custody of all the test registers.
- (vii) Submission of statement of all test conducted at site/lab, material at Site Register along with each alternate Running Account Bill and Final Bill shall be mandatory.

Maintenance of Material at Site (MAS) Register –

- (i) All the MAS Registers including Cement and Steel Registers shall be maintained by Contractor which shall be issued to the contractor by Engineer-in-Charge in the same manner as being issued to CPWD field staff. Authenticated copies of bills / vouchers of materials which has to be entered in the MAS register are to be submitted by the contractor to CPWD before making payments.
- (ii) Each of the entry of receipt of material at site shall be 100% test checked by JE or by AE/AEE if there is no JE.
- (iii) Each MAS Register shall be checked by JE at least twice a week and at least once a week by AE/AEE. If there is no JE then MAS registers will be checked by AE at least twice a week.
- (iv) Cement Register shall be reviewed by EE at least once in a month.
- (v) It will be deemed that work so measured, checked and paid is of the required quality and standard, both in respect of ingredients as well as the intended functions it is supposed to perform. In other words, the work would not only meet the required specifications but also the workmanship as per sound engineering practices.
- (vi) The Superintending Engineer shall also have to check and sign these reports at suitable intervals in token of his ensuring compliance of the ‘Quality Assurance Plan’ for the work.
- (vii) Copies of bills: Agency will provide authenticated copies of itemize bills of materials which has to be entered in the MAS Register viz steel, cement, bitumen, paint, water proofing or any other item suggested by the Engineer-in-Charge.

31.0 Quality Assurance: Quality of work is of paramount importance. Contractor will be required to engage well-experienced supervisors, engineers, skilled labour and deploy modern T&P and other equipments to execute the work in a time bound manner. Many items like exposed finish form work, specialized flooring work, factory made door-window shutters, proper slope maintaining in toilet units, sanitary-water supply installation, textured finishing, aluminium and glass work and water proofing treatment will specially require engagement of skilled workers having experience particularly in execution of such items.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

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.

In addition to the supervision of work by CPWD engineers, the third party quality assurance representatives / Quality Assurance of CPWD and/ or Clients representatives shall also be carrying out regular and periodic inspections of the on-going 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 and up keeping of quality assurance shall be of paramount importance.

Method Statement: The Contractor shall submit within 15 (fifteen) days after the date of award of work, a detailed and complete method statement for the execution, testing and Quality Assurance. 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.

Checklist

- (i) As and when any important item is taken up for execution, the Contractor shall submit the specifications and invariably make a checklist. This checklist should be got approved from the Executive Engineer, and should be shown to the inspecting officers. The important items inter-alia include foundation work, including reinforcement and shuttering, brickwork, cast-in-situ mosaic flooring, doors & windows, plumbing, including water supply pipe lines, roof treatment, earth filling etc. which are a few illustrative items for checklist purpose.
- (ii) Sample checklists for items of concrete for raft, columns/beams/slabs, water supply lines, brick work and plastering are given in CPWD Specification 2019 with correction slip upto last date of submission of bid. In addition to this all other important items such as flooring, door windows, sanitary, painting etc. shall be made on these guidelines in consultation with Engineer-in-Charge.

The tests, as necessary, shall be conducted in the laboratory approved by the Engineer-in-Charge. The samples shall be taken for carrying out all or any of the tests stipulated in the particular specifications and as directed by the Engineer-in-Charge or his authorized representative.

All the registers of tests carried out at Construction Site or in outside laboratories and all material at site (MAS) registers including cement register shall be maintained by the contractor which shall be issued to the contractor by Engineer-in-Charge. All the entries in the relevant registers will be made by the designated Engineering Staff of the contractor and same should be regularly reviewed by JE/AE/AEE/EE/ of CPWD. Contractor shall be responsible for safe custody of all the registers.

The Contractor shall at his own risk and cost make all arrangements and shall provide free of cost all such facilities including material and labour, the Engineer-in-Charge may require for collecting,

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

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.

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 on this account.

TESTING CHARGES:

Samples of all materials required for testing is included in the cost of work. Similarly expenditure for testing in house or through **outside laboratory approved by the Engineer-in-Charge shall be borne by the contractor** Frequency of testing of material will be as per frequency laid down in CPWD Specifications or otherwise specified. No reimbursement of testing charges shall be done.

If any load testing or special testing is to be done for any sample whose strength is doubtful, the cost of the same shall also be **borne by the contractor**. 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.

Water tanks, taps, sanitary, water supply and drainage pipes, fittings and accessories should confirm to bylaws and municipal body / corporation where CPWD Specifications are not available. The contractor should engage 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 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.

The contractor shall have to execute guarantee bonds in respect of specified items mentioned in tender document.

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 / fire fighting equipments, 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.

A third party quality assurance agency from Govt. departments/institutes shall be engaged for this work. If third party is not engaged, Quality Assurance is to be done by CPWD team of SDG-Region Kolkata office. Contractor shall co-operate with the third party / Quality Assurance team of CPWD for quality assurance of the construction work. The third party / Quality Assurance team of CPWD will collect the samples of construction materials/reinforcement for necessary tests. The samples would be collected jointly in the presence of the representatives of contractor and Engineer-in-Charge. The cost of sample materials/reinforcement, packaging, transportation charges shall be borne by contractor. All necessary test records shall be produced and maintained by the quality engineer of contractor.

Rate quoted by contractor is inclusive of GST and Labour Cess, nothing is payable on this account.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

SPECIAL CONDITIONS FOR CEMENT AND STEEL
CONDITIONS FOR CEMENT

- a) Cement required for the work shall be procured by the contractor.
- b) The contractor shall procure PPC conforming to IS: 1489(Part-I) / OPC conforming to IS:8112 as per **List of Preferred Makes for Civil Works.**
- c) The supply of cement shall be taken in 50 kg bags / or in bulk for storage in cement silos for batching plant bearing manufacturer's name and ISI marking. 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. In case the test results indicate that the cement arranged by the contractor does not conform to the relevant BIS codes, the same shall stand rejected, and it shall be removed from the site by the contractor at his own cost within a week's time of written order from the Engineer-in-Charge to do so. Supply of cement shall be taken in 50 kg bags bearing manufacturer's name, or his registered trade marks if any and grade and type of cement as well as ISI marking. The packing of the cement bags shall be as per CPWD specifications 2019 with correction slips upto last date of submission of bid.
- d) The cement shall be brought at site in bulk supply of approximately 50 tonnes or more or as decided by the Engineer-in- Charge.
- e) The cement godowns of the capacity to store a minimum of 2000 bags of cement shall be constructed by the contractor at site for which no extra payment shall be made.
- f) Double lock provision shall be made to the door of the cement godown. The keys of one lock shall remain with the Engineer-in-Charge or his authorized representative and the keys of the other lock shall remain with the contractor. The contractor shall be responsible for the watch and ward and safety of the cement godown. The contractor shall facilitate the inspection of the cement godown by the Engineer-in-Charge at anytime.
- g) The cement shall be got tested by the Engineer-in-Charge and shall be used on the work only after satisfactory test results have been received. The contractor shall supply free of cost the cement required for testing including its transportation cost to testing laboratories. The cost of tests shall be borne by the contractor.
- h) The actual issue and consumption of cement on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of cement shall be worked out as per procedure prescribed in clause 38 of the General Condition of Contract 2023 for Construction work and shall be governed by conditions laid there in.
- i) The cement brought to the site and the cement remaining unused after completion of the work shall not be removed from site without the written permission of the Engineer-in-Charge.
- j) The damaged cement shall be removed from the site immediately by the contractor on receipt of a notice in writing from the Engineer-in-Charge. If he does not do so within 3 days of receipt of such notice, the Engineer-in-Charge shall get it removed at the cost of the contractor.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

CONDITIONS FOR STEEL REINFORCEMENT

- i. The contractor shall procure **ISI marked TMT Bars** of appropriate grade from the steel manufacturer such as **List of Preferred Makes for Civil Works**. Or their authorized dealer having valid BIS License for IS 1786-2008 (latest AMENDMENT). If TMT bars of any dia of above mentioned make is not available in market at any time then the contractor on producing non availability certificate from the manufacturers may procure TMT bars of that dia from Steel manufacture as decided by the Engineer-in-Charge.
- ii. As per CSQ CPWD OM issued by file no. CSQ/SE(TAS)/Steel/2024/262(H) dt:14.08.2024 Steel bars classified as “Bar Set-I” Shall be used in the works. As per Annexure-I(C) of the said OM.
Testing requirement for individual reinforcement bar diameter of Particular Grade of steel:

Tests required for Fe 415D, Fe500D, Fe550D grade of steel and Low alloy steel reinforcement bars:

A. FOR BAR SET-I

1. Tests as per IS 1786 (latest version) and specified therein.

1.1 Chemical Properties

Ladle analysis of steel for above grades for maximum percentage of constituents.

- i. Carbon (C), (ii) Sulphur (S) and (iii) Phosphorous (P) and (iv) Nitrogen and Carbon Equivalent.

1.2 Physical Properties.

- i. 0.2 percent proof stress / yield stress, minimum, N/mm².
- ii. Ratio of Tensile Strength (Ts) to Actual Yield Strength (or 0.2 % of yield stress (Ys)) of the test piece N/mm².
- iii. Elongation, percent, Minimum, on gauge length $5.65\sqrt{A}$, where A is the cross-sectional area of the test piece.
- iv. Total elongation at maximum force, percentage, minimum on gauge length $5.65\sqrt{A}$, where A is the cross-sectional area of the test piece.
- v. Bend test and re-bend test.
- vi. The mean area of ribs (in mm²) per unit length (in mm) above the core of the bar, projected on a plane normal to the axis of the bar.
- vii. Pull-out testing in accordance with IS 2770 (Part 1)

2. Additional requirement

2.1 Permissible limit for Manganese and Copper as follows:

Constituent	Permissible Limit (% of cast metal quantity)		
	Fe 415 D	Fe 500 D	Fe 550 D
Manganese (Mn)			
Maximum	1.60	1.60	1.60
Copper (Cu)			
Maximum	0.80	0.80	0.80
Minimum	0.20	0.20	0.20
Notes: The above composition shall be obtained as per latest version of IS 228 1. Manganese using Periodate Spectrophotometric Method (Part'12), and 2. Copper using Thiosulphate Iodide Method (Part'15) or Spectrophotometric (Diethyl Dithiocarbonate) Method (Part 21)			

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

2.2 Tempered Martensite Ring Test as per Annexure-I (d) of OM no. CSQ/SE(TAS)/Steel/2024/262(H) dt:14.08.2024.

2.3 The process of manufacturing steel shall comply with the provisions of ISO9001: 2015 and ISO14001: 2004.

B. FOR BAR SET-II.

The test requirements given in para 1.1 and 1.2 above.

- iii. 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 or written orders from the Engineer-in-Charge to do so.
- iv. The steel reinforcement bars shall be brought to the site in bulk supply of 10 tonnes or more, or as decided by the Engineer-in-Charge.
- v. The steel reinforcement bars shall be stored by the contractor at site of work in such away 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.
- vi. For checking nominal mass, tensile strength, bend test & re-bend test etc. specimen of sufficient length shall be cut from each size of the bar at random at frequency not less than the specified below:

<i>Size of bar</i>	<i>For consignment below 100 tonnes</i>	<i>For consignment above 100 tonnes</i>
Under 10 mm dia bars	One sample for each 25 tonnes or part thereof	One sample for each 40 tonnes or part thereof
10mm to 16mm dia bars	One sample for each 35 tonnes or part thereof	One sample for each 45 tonnes or part thereof
Over 16mm dia bars	One sample for each 45 tonnes or part thereof	One sample for each 50 tonnes or part thereof

- vii. The contractor shall supply free of charge the required steel bars for testing including its transportation to testing laboratories. **The cost of tests shall be borne by the contractor.**
- viii. The actual issue and consumption of steel on work shall be regulated and proper accounts maintained as provided in clause 10 of the contract. The theoretical consumption of steel shall be worked out as per procedure prescribed in clause 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. In case of excess consumption no adjustment need to be made.
- ix. Steel brought to site and remaining unused shall not be removed from site without the written permission of Engineer- in-Charge.
- x. The standard sectional weights referred to shall be as given in Table 5.4 in para 5.3.4 in CPWD Specification 2019 Vol.-I and will be considered for conversion of length of various sizes of TMT Bars in to standard weight. Record of actual sectional weights shall also be kept dia. 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

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

conversion of length of various sizes of bars based on the actual weighted average sectional weight shall be terms as Derived Actual Weight.

- a) If the derived weight is less than the standard weight, then the Derived Actual Weight shall be accepted if it is within the tolerances specified in IS:1786-2008, otherwise whole lot will be rejected.
- b) If the derived actual weight is found more than the standard weight, then nothing shall be paid extra for the difference in derived actual weight and standard weight.
- c) The contractor shall submit original vouchers from the manufacturer for the total quantity of steel supplied under each consignment to be used 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.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

CEMENT/PAINT REGISTER

NAME OF WORK:
AGREEMENT NO.

DIVISION
SUB-DIVISION

Particulars of Receipt

Date of Receipt	Source of receipt with details if any	Batch No.	Date of manufacture	Date of expiry	Qty. received	Progressive Total	Date of Issue	Qty Issued	Items of work for which Issued	Qty. Returned at the end of day's work
1	2	3	4	5	6	7	8	9	10	11

Particulars of Issue

Net Qty. Issued	Progressive Total	Daily Balance in Hand	Contractor's Initial	J.E.'s Initial		Periodical Check	
						By AE	By EE
12	13	14	15	16		17	18

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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EE(C)

CONDITIONS SPECIFIC TO GREEN BUILDING PRACTICE

The contractor shall get rating of “Green” Qualifying point 55 -70 marks as per green rating manual 2021.

2.3 Ratings

The building shall be rated based on the total marks obtained in the criteria given in clause 2.4. Minimum 50% marks are required in each criterion to be eligible for green rating. The rating once awarded shall be valid for a period of five years. The buildings shall be classified as Super Green, Green Plus, and Green, depending on the total marks scored, as given in Table 1.

Table 1: Ratings

Certification	Qualifying marks
Super Green	86-100
Green Plus	71-85
Green	55-70

2.4 Criteria and marking system

The criteria and maximum marks for rating of buildings are given in Table 2.

Table 2: Criteria and Marking System for Rating of Buildings

Criterion	Criterion subhead	Criterion name	Maximum marks
1. Architectural Planning and Design Total Marks: 16	1.1	Solar passive architectural design strategy	4
	1.2	Accessibility in built environment	2
	1.3	Availability of integrated architectural drawings	5
	1.4	Layout/site planning	3
	1.5	New and innovative design approach	2

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

2. Quality and Safety Total Marks: 12	2.1	Availability of quality assurance plan	4
	2.2	Availability of safety plan	4
	2.3	Availability of structural drawings	4
3. Sustainable Building Materials Total Marks: 16	3.1	Use of fly ash bricks/AAC blocks/recycled C&D waste products	2
	3.2	Use of alternatives to natural timber	2
	3.3	Use of fly ash in cement or cement concrete	2
	3.4	Use of local materials	2
	3.5	Use of recycled materials	3
	3.6	Adherence to Make in India Policy	2
	3.7	Use of non-toxic and non-hazardous materials	3
4. Green Construction Measures Total Marks: 14	4.1	Use of air pollution and noise control measures	2
	4.2	Use of trenches for integrated services	2
	4.3	Use of new technologies for green construction	3
	4.4	Use of equipment to avoid generation of C&D waste	3
	4.5	Use of new technologies for speedy construction	4
5. Water Conservation Measures Total Marks: 7	5.1	Recycling of water	3
	5.2	Rain water harvesting	2

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	5.3	Use of water efficient fixtures	2
6. Energy efficiency Measures Total Marks: 22	6.1	Energy efficient building envelope	4
	6.2	Energy efficient lighting, fans, ACs, and controls	4
	6.3	Energy efficient pumps, lifts & other equipment	2
	6.4	Integration of controls with IBMS and sensors for light fixtures	3
	6.5	Generation of renewable energy	8
	6.6	Innovation in energy efficiency	1
7. Waste Management Total Marks: 4	7.1	Waste management policy	1
	7.2	Sewage treatment plant or Organic waste converter	2
	7.3	Waste segregation facilities	1
8. Welfare Measures Total Marks: 4	8.1	Toilet and health check-up facilities during construction	2
	8.2	Welfare measures for workers during construction	2
9. Landscape and horticulture Total Marks: 5	9.1	Trees protection and transplantation	3
	9.2	Irrigation features	1
	9.3	Reuse of excavated soil	1

In case any specific criterion is not applicable, the same will not be considered and the marks will be proportioned by excluding the marks of such criteria/criterion from 100 marks. For example, if after excluding a particular criterion, marks obtained are 65 out of maximum marks 95, the same will be proportioned as $65 \times 100 / 95 = 68.42$ rounded off to next full number that is 69.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

PREFERRED MAKE OF MATERIALS (FOR CIVIL WORKS)**NOTE: -**

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 and subject to Approval of the alternate Brand by the Engineer In charge.

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 Chief Engineer shall be obtained before use of such material in their works.

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, and the products shall be used. To achieve this, proper check on the quality of the product, actually to be used, should be exercised.

Sl. No.	Material Description	Material	
		Brand	Makes *
1	AAC Blocks	A B Dinesh	A B Dinesh
		Fastbuilt	Fastbuilt
		ABC Ashpro	ABC Ashpro
2	Acoustic Insulation	Anutone	Anutone Acoustics Ltd.
		Himalyan Accoustics	Himalyan Accoustics
		KNAUF	KNAUF INDIA PVT. LTD.
		Lloyd Insulation	Lloyd Insulation (India) Ltd.
		Aeroceil	Aeroceil Concept Pvt 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
		Asian	Asian Paint Limited
		MYK	MYK Arment
		Berger	Berger paints India ltd
4	Acrylic emulsion	Asian	Asian Paint Limited
		Berger (BISM)	Berger Paints
		Nerolac (Beauty Gold)	Nerolac
5	Acrylic smooth exterior paint	Berger	Berger
		Asian	Asian Paint Limited
		Nerolac	Nerolac
6	Acrylic exterior Texture	Asian	Asian Paint Limited
		Berger	Berger paints India ltd
7	Adhesive	CICO	CICO Industries
		Finical	Pidilite Industries
		Proofex of Adhesive	FOSROC India

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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		Berger	Berger paints India ltd
		NEWCRETE	NEWCRETE Building Solutions Pvt. Ltd
		Asian	Asian Paint Limited
		Sika	Sika India Pvt. Ltd
8	Adhesive for AAC Block/Tiles	NEWCRETE	NEWCRETE Building Solutions Pvt. Ltd
		Ramco Hard Worker	The Ramco Cements Limited
		MYK	MYK Arment
9	Air release valve	Kartar	Kartar valves private Ltd.
		Kirloskar	Kirloskar brothers Ltd.,
		RBM	AFS Ltd
10	Aluminium doors/windows sections	Hindalco	Hindalco Industries Ltd..
		INDAL	Indian Aluminium Ltd.,
		Jindal	Jindal Aluminium Ltd ,
	Aluminum Door & Window Manufacturers	Schuco /Reynaers/ Alvmil / Reklad or equivalent approved by Chief Engineer.	
11	Aluminium system/ Anodised Aluminium fittings for doors/windows	Everite	Everite Agencies
		Kawneer	Kawnear India
		Schueco	Schueco India Pvt. Ltd.,
		Pulse	Pulse
		Sysmac	Sysmac
		Aluaplha	Aluaplha
12	Aluminium composite panels/Sheets/HPL	Alstone	Alstone
		Eurobond	Euro Panel Products Limited
		Virgo	Virgo Aluminium Limited
		Viva	Viva Composite Panel Pvt. Ltd.
13	Anchor/ SS Stone Cladding Clamps/ Dash fasteners	Anchor	Anchor Ltd.
		BOSCH	BOSCH Ltd.
		Fischer	Fischer India
		Hilti	Hilti India Pvt. Ltd.
		Trixel	Axel India Pvt. Ltd.
		Wurth	Wuerth India Pvt. Ltd.
14	Butt Hinges openable window shutters	Alu Alpha	Alu Alpha India
		Dorma	Dorma India Pvt. Ltd.
		Eare Bihari	Eare Bihari India Pvt. Ltd.
		Hafela	Hafele India Pvt. Ltd.
		Helix	Helix India
15	Bamboo Wood Flooring and wall paneling.	AMITEX	AMITEX Enterprises, Delhi.
		Eco green Flooring	Jupiter Traders Bangalore.
		Epitome Bamboo wood Products	Mutha Industries Pvt.,Ltd., Mumbai.
		Floor India	Flooring India Company, Panipat, Haryana.
		FLOSTO Tanks	Devi Polymer Pvt. Ltd. Chennai.
		VIVANTA	VIVANTA Enterprises, Mumbai.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

16	Cement OPC / PPC/PSC/SRPC	ACC	ACC Cements Ltd
		Jindal Panther Cement	Jindal Panther Cement(JSPL)
		Ramco	The Ramco Cements Limited
17	Cement Concrete Parking Tiles/ Paver Bloks/ Cheqqurred	Parmeshwari	M/s Parmeshwari Enterprises
		BHUASUNI PRECAST	BHUASUNI PRECAST PVT LTD.
		Lakshmi Tiles	Lakshmi Tiles
18	Cement based wall putty	Berger	Berger paints India ltd
		JK Wall Putty	JK Wall Putty
		Asian	Asian Paint Limited
		NEWCRETE	NEWCRETE Building Solutions Pvt. Ltd
		Ramco	Ramco Hard Worker
19	Cement Board	Bison	Bison Group
		Everest	Everest Techno polis
20	Cement Primer	Asian	Asian Paint Limited
		Berger	Berger paints India Ltd.
		JK Primaxx	JK Cement Ltd
21	Centrifugal Hubless Cast Iron Pipe & Fittings	Bengal Iron Corporation	M/s. Bengal Iron Corporation ,Kolkata
		NECO	Jayaswal NECO Ltd.
		RPMF	Raj Pattern Makers and Founders Pvt. Ltd.
		SKF	Singhaliorn Foundary Pvt.,Ltd.
22	Centrifugally (Spun) cast Iran	Electrosteel	Electrosteel castings Ltd.
		Jindal	Jindal saw Ltd.
		Kesoram	Kesoram Industries ltd.
23	Centrifugally Caste (Spun) Iron Soil Pipe	Bengal Iron Corporation	Bengal Iron Corporation
		Neco	Jayaswal Neco Ltd
		RPMF	Raj Pattern Makers and Founders Pvt. Ltd.
		SKF	SKF industries
24	Chemical water proofing system	Dr. Fixit	Pidilite industries
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Fosroc	Fosroc India
		Sika	Sika India
		Berger	Berger paints India ltd
		Asian	Asian Paint Limited
		MYK	MYK Arment
25	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.
26	CI double flange sluice valve	Kirloskar	Kirtoskar brothers Ltd. ,
		Leader	Leader
		Zoloto	Zoloto Industries

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

27	CI double flanged non return valve	Fluidtech	Fluidtech
		Kirloskar	Kirloskar Brothers Ltd.
		Leader	Leader
		Zoloto	Zoloto Industries
28	CI Manhole cover	BIC	M/s. Bengal Iron Corporation ,Kolkata
		Neco	Jayaswal Neco Ltd..
		RPMF	Raj Pattern Makers and Founders Pvt. Ltd.
		SKF	SKF Industries
29	Clamp, Rebar, Chemical fastener	Fischer	Fischer India
		Hilti	Hilti India Pvt.Ltd.
		Würth	Würth
30	C.P.Brass Fittings	CERA	M/s Cera Sanitaryware Ltd.
		Hindware	HSIL Ltd.
		Kingston	Kingston Brass India Pvt., Ltd.
		Prayag	Prayag Polymers Private Limited
		Asian (ESSESS Bathsense & Royal)	Asian Paint Limited
		VARMORA	VARMORA Granito Ltd
		Somany	Somany Ceramics Ltd.
31	C.P.Brass Fittings Premium Category	Jaquar	Jaquar Group
		KOHLER	KOHLER
		Asian (Canvas)	Asian Paint Limited
		ROCA	ROCA
32	CPVC pipe and fittings	AKG	M/s. AKG Extrusions Pvt. Ltd.
		Astral	Astral Polytechnik Ltd.
		Prayag	Prayag Polymers Private Limited
		ORI PLAST	ORI PLAST LIMITED
		Sudhakar	Sudhakar PVC Products Private Limited
		JAIN	JAIN IRRIGATION SYSTEMS LIMITED
		APL APOLLO	APL APOLLO TUBES LIMITED
		Flowkem	Flowkem Poly Plast Pvt. Ltd
		Kothari	Kothari Agritech Private Limited
33	Damp Proof material	BASF	BASF India Ltd.
		Dr. Fixit	Pidilite Industries
		PIDILITE	Pidilite Industries
		Berger	Berger paints India ltd
		SC Damp Proof	Asian Paint Limited
34	DI Pipe Fittings	MYK	MYK Arment
		Electro steel	Electro steel
		Jindal	Jindal
		Tata Ductura	Tata Ductura
35	DI Pipes	Kejriwal	Kejriwal
		Electrosteel	Electrosteel
		Jindal	Jindal
		Keshoram	Keshoram
		Tata Ductura	Tata Ductura

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

36	EPDM Gaskets	Anand	Anand NVI-I products (P) Ltd.,
		Hanu	Hanu Industries
		OSAKA	OSAKA
37	EPDM water proofing Membrane	Ferrous Crete	Ferrous Crete (India) Pvt Ltd
		Pidilite	Pidilite Industries
		Berger	Berger paints India ltd
		Asian	Asian Paint Limited
		MYK	MYK Arment
38	Epoxy	Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Fosroc	Fosroc India
		Laticrete	MYK Laticrete India
		Asian	Asian Paint Limited
		NEWCRETE	NEWCRETE Building Solutions Pvt. Ltd
		Ramco Hard Worker	The Ramco Cements Limited
39	Epoxy Paint	Asian	Asian Paint Limited
		MYK	MYK Arment
		Berger	Berger paints India Ltd.
40	Epoxy tile joint cements	Ferrous Crete	Ferrous Grete (India) Pvt. Ltd
		Fosroc	Fosroc indd
		Berger	Berger paints India ltd
		NEWCRETE	NEWCRETE Building Solutions Pvt. Ltd
		Asian	Asian Paint Limited
		Laticrete	MYK Laticrete India
		Ramco Hard Worker	The Ramco Cements Limited
41	False Ceiling / Metal Ceiling	Diamond Ceilings	Diamond International Inex Pvt Ltd
		Armstrong	Armstrong Wond Indusvies
		KNAUF	KNAUF INDIA PVT. LTD.
		Aeroceil	Aeroceil Concept Pvt Ltd.
		Hi-STEEL	M/s. P R Produits
42	False ceilings Members (Perimeter, Ceiling section, intermediates, angles etc.,)	Aerolite	Andhra Polymers Pvt. Ltd./Aerolite Industries Pvt. Ltd
		Armstrong	Amstrong World Industries
		KNAUF	KNAUF INDIA PVT. LTD.
		Aeroceil	Aeroceil Concept Pvt Ltd.
		Hi-STEEL	M/s. P R Produits
43	Fire Rated hardware	Dorma	Dorma India Pvt. Ltd.
		Geze	Geze GMBH
		ASES	ASES SECURITY PVT LTD
44	Fire retardant paint	Akzonobel	Dulex Akzonobel Paints
		Asian paints	Asian Paints
		Jotun	Jotun paints
		STPL Ltd.	STPL Ltd.
		Berger	Berger
45	Float Glass	Saint Gobain	Saint Gobain India Pvt. Ltd.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

		Modiguard	Gujarat Guardian Ltd.
46	Float Valve (Ball valve)	Arco	Arco valve Pvt Ltd
		Leader	Leader valve Ltd
		Zoloto	Zoloto industries
		Somany	Somany
		KSB	KSB
47	Floor spring (For non DSR Items)	Dorma	Donna India Pvt Ltd.
		OZONE	Ozone Hardware.
48	Flushing Cistern	CERA	CERA Sanitary ware Ltd.,
		Hindware	HSIL Ltd,
		Jaquar	Jaquar Group
		Kohler	Kohler
		Somany	Somany
		Basthsense	Asian Paint Limited
		Prayag	Prayag Polymers (P) Ltd
49	Fly ash cement bricks/K.B bricks	Concerned CE will approve based on local availability.	
50	FRP Door Frames shutter	Durasleek	M/s Fibrespace Composites Pvt. Ltd.
		REDMOND	REDMOND DOORS
51	Galvolume sheet for roofing, cladding, sandwich panel	Bhushan	Bhushan steel
		Essar	Essar Group
		JSW	JSW
		APL APOLLO	APL APOLLO TUBES LIMITED
		Tata Blue Scope	Tata Blue Scope
52	G I Pipe fittings	TATA	TATA Steel Ltd.,
		Jindal	Jindal Pipes Ltd.,
53	G.I. Pipes	Jindal	Jindal Pipes Ltd.,
		APL APOLLO	APL APOLLO TUBES LIMITED
		TATA	TATA Steel Ltd.,
54	Glass door hardware	Dorma	Dorma India Pvt. Ltd.
		Godrej	Godrej
		Ozone	Ozone Hardware
55	Glass mosaic tiles	Bisazza	Bisazza Italy
		Mridul	Mridut tiles
		Palladio	Palladio Mosaics
		OPIO	OPIO
56	Glazed Ceramic tiles (Also wall tiles)	Jonson	Prism Jonson Ltd.
		Kajaria	Kajaria Ceramic Ltd.
		RAK	RAK Ceramic India Pvt. Ltd.
		Oasis	M/s Oasis Vitrified Pvt.Ltd.
		VARMORA	VARMORA Granito Ltd
		NITCO	NITCO Limited.
57	GRC Jali & Tile	Concerned CE will approve based on local availability	

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

58	Chemical Grout	Berger	Berger paints India ltd
		CICO	CICO Industries
		SIKA	Sika India Pvt.Ltd.
		Asian	Asian Paint Limited
		NEWCRETE	NEWCRETE Building Solutions Pvt. Ltd
		Ramco Hard Worker	The Ramco Cements Limited
59	Gun metal Valves	Zoloto	Zolota Industries
		Leader	Leader
60	Gypsum Board	Armstrong	Armstrong world Industries
		KNAUF	KNAUF INDIA PVT. LTD.
		Lafarge	Lafarge Gypsum India Pvt. Ltd.
61	Gypsum plaster	Ferrous crete (Ferro-500, Gypsum) Plaster)	Ferrous crete manufacturers
		Gyproc Saint Gobain (Elite 90)	The Saint-Gobain group
62	High Desity (HDF) Prelaminated board	Armstrong	Armstrong world industries Ltd.
		Green ply	Green Ply Industries Ltd.
		Centuray	Centuray
		Pergo	Red Floor India
63	Hydraulic door closers/ Floor springs	Dorma	Dorma India Pvt. Ltd.
		Godrej	Godrej locking solutioin & systems
		Hardwyn	Hardwyn hardware
64	Interlocking Concrete Paver Blocks/Precast Items	Parmeshwari	M/s Parmeshwari Enterprises
		Bhuasuni Precast Pvt Ltd	Bhuasuni Precast Pvt Ltd
		Lakshmi Tiles	Lakshmi Tiles
		Any alternative tiles as approved by CE based on local availability.	
65	Laminate	Archid ply	Archid ply industries ltd.
		Green Ply	Green Ply Industries Ltd.
		Merino	Merino laminates
		Virgo	Virgo Laminate Limited.
		Royal touche	Royal touche laminates
		Greenlam	Greenlam Industries Limited
66	Locks & Latches	Godrej	Godrej locking solution & systems
		Dorma	Dorma
67	Masking Tapes	3M	3M
		Roop	Roop Polymer Ltd.
		Sun	Sun
		Wonder polymer	Wonder Tape Industries
68	Melamine Polish	Asian	Asian Paint Limited
		Melamine Gold Wudfin	Pidilite industries
		Polycure	Polycure Malaysia
		Dulux	
69	Mechanical coupler for reinforcement	Dextra	Dextra India Pvt Ltd.
		Sanfield	Sanfield India Ltd.
		Tata	Tata

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

		G-Tech	G-Tech
70	Membrane water proofing system	MYK	MYK Arments
		STP Ltd	Shalimar tar products
		Berger	Berger paints India ltd
		Asian (Smart Care)	Asian Paint Limited
		Fosroc	Fosroc
71	Non Metallic/Metallic / Glass/Steel Fire Door	4C	4C Fire Protection Pvt. Ltd
		Bhawani Fire	Bhawani Fire Protection Pvt. Ltd.
		ASES	ASES Security Pvt. Ltd.
72	Metal Deck Sheet	Essar	Essar Steel Ltd.
		JSW	JSW Structural Metal Decking Ltd
		SAIL	SAIL
		TATA	TATA steel
		APL APOLLO	APL APOLLO TUBES LIMITED
		Lloyds	Lloyds
73	Mild Steel Butt Hinges/ Piano hinges	Hafle	Hafle
		Geze	Geze
		Dorma	Dorma
74	Mirror	AIS Mirror	Asahi India Glass Ltd.
		Modi Guard	Gujarat Guardian Ltd
75	Modular kitchen/ wardrobes/Hardware and Accessories	REDMOND	REDMOND DOORS
		Godrej	Godrej & Boyce co
		Spacewood	Spacewood
76	M.S. Pipe, Tubes	JINDAL	JSW
		SAIL	SAIL
		APL APOLLO	APL APOLLO TUBES LIMITED
		TISCO	TATA STEEL
77	Multi walled polycarbonate roofing sheets	Danapalon	Danapal Light architecture
		Lexan GE	GE lexan
		Gallina	Gallina
78	Non Asbestos Sheets	Everest	Everest Industries
		HIL	HIL Ltd.
		RAMCO	RAMCO Industries Ltd.
79	Non Metallic floor surface hardness	CICo	CICO Technologies ltd
		Fosroc	Fosroc India
		Pidilite	Pidilite Industries ltd
		MYK	MYK Arment
		Sika	Sika India
80	Oil Bound Distemper	Berger (BISOM)	Berger Paints
		Dulux	Dulux
		Asian	Asian Paint Limited

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

		Tractor Aqalock	Asian Paint
81	Overdeck insulation with extruded polystyrene board (XPS board)	Dowcorning	Dowcorning
		Owen scoring	Owen scoring
		Supreme Petrochemical Ltd.	Supreme Petrochemical Ltd.
82	Pink primer	Berger	Berger Paints
		Asian	Asian Paint Limited
		Wood primer	Asian paint
83	Plasticiser & Super Plasticiser	Berger	Berger paints India ltd
		Asian	Asian Paint Limited
		MYK	MYK Arment
84	Poly carbonate Sheet	Alcox	Hindeggan Alcox Ltd.
		Danapalan	Danapal Light architecture
		GE Lexon	GE Silicones
		Gallina	Gallina
85	Poly sulphide sealant	Dr. Fixit	Pidilite industries
		Pidilite	Pidilite Industries
		STP Ltd	Shalimar tar products
		Sika	Sika
		Berger	Berger paints India ltd
		Asian (Smart Care)	Asian Paint Limited
		MYK	MYK Arment
		Dowcorning	Dowcorning
86	Polyurea Ultra	BASF	BASF
		Ferrous	Ferrous Crete (India) Pvt Ltd
		Pidilite	Pidilite Industries
		Berger	Berger paints India ltd
		Asian (Smart Care)	Asian Paint Limited
		MYK	MYK
87	Powder coating	Akzonoble	Akzonoble Coating Ltd.
		Berger	Berger Paints India Ltd.
		Asian	Asian Paint Limited
		Nerolac	Nerolac
88	Prelaminated particle board Exterior Grade	Archid ply	Archid Ply Industries Ltd.
		Green Ply	Green Ply Industries Ltd.
		Merino	Marino laminates
89	Premium Acrylic smooth exterior Paint with silicon additives	Berger	Berger
		Asian	Asian Paint Limited
90	PTMT/PVC pipes sanitary fittings, bibcocks, pillar cock Angle valve,	Prayag	Prayag Polymers (P) Ltd
		ORI PLAST	ORI PLAST LTD
		Asian (ESSESS Bathscenc Royal)	Asian Paint Limited

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

91	PT Strands	DP Wires	DP Wires Ltd.
		TATA wiron	TATA STEEL LTD.
		Usha Martin	Usha Martin Ltd.
92	PVC Doors and Frames	Rajshri Plastiwood	Rajshri Productions Pvt. Ltd.
		Alstone	Alstone Ltd.
93	PVC / HDPE water storage tanks	MANGALAM	M/s. MOHIT UDYOG
		Prayag	Prayag Polymers Private Limited
		Sudhakar	Sudhakar PVC Products Private Limited
		ORI PLAST	ORI PLAST LIMITED
94	PVC flooring	Armstrong	Armstrong world Industries
		Ger flor	Ger flor flooring
		LG Hausys	LG Hausys
		Tarkett	Tarkett
95	PU Coating (UV resistant Liquid Applied coating)	Fosroc	Fosroc India
		Pidilite	Pidilite industries
		SIKA	SIKA India
		Berger	Berger paints India ltd
		Asian	Asian Paint Limited
		MYK	MYK Arment
96	PU Enamel Metalic Paints on MS Structure & Epoxy paints (Premium Quality)	Akzonobel	Akzonobel
		Asian	Asian Paint Limited
		Berger	Berger paints India Ltd.
		MRF	MRF paints
97	RCC Pipes	Parmeshwari	M/s Parmeshwari Enterprises
98	Ready mix cement plaster	Ferrous Crete	Ferrous Crete (India) Pvt. Ltd.
		Read Plast	Ultratech cements Ltd
		NEWCRETE	NEWCRETE Building Solutions Pvt. Ltd
		Asian (Smart Care)	Asian Paint Limited
		Ramco Hard Worker	The Ramco Cements Limited
99	Red Oxide Zinc Chromate primer	Berger	Berger Paints
		Dulex	ICI dulex
		Asian	Asian Paint Limited
100	Reflective glass	Asahi	Asahi India Glass ltd.
		Glaverbel	Glaverbel India
		Pilkinton	Pilkinton India

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

101	RMC plants (Ready Mix Concrete)	DURAMIX	Duramix Concrete India Pvt. Ltd.
		AB Dinesh Concrete	AB Dinesh Concrete India Pvt Ltd
		AKP HYMX	AKP CONFRA PVT. LTD
		MIX MASTERS	Mix Masters RMC (India) Pvt. Ltd
		RDC Concrete	RDC Concrete (India) Limited.
102	Rockwool/Glass wool insulation	Supreme	Supreme
		Twiga fiber	Twiga fiber glass ltd
		Roxul Rockwool	
103	Sandwich PUF panelled roofing sheets	MYK	MYK Arment
		Pidilite	Pidilite Industries ltd
		Smart care	Asian paints
		Supreme	Supreme ltd
104	Sensor based Auto flush systems	AOS System	AOS System
		Somany	Somany
		TOTO	TOTO ltd.
105	SFRC Cover and grating	KK	KK Manhole and gratings Co Pvt Ltd.,
		Parmeshwari	M/s Parmeshwari Enterprises
		Bhuasuni Precast Pvt Ltd	Bhuasuni Precast Pvt Ltd
106	Silicon coating	BASF	BASF India Ltd.
		Dow Corning	Dow corning Indd
		GE	GE Silicones
		Wacker	Wacker silicones
107	Solar studs/ Median markers	3M	3M Science
		Avery Dennison	Avery Donnison India Pvt Ltd.
		Nikkalite	Nippon carbide Industires (USA)
108	Spider patch fittings for structural glazing	Dorma	Dormakaba
		Hafele	Hafele Ltd.
		Kich	Kich india
		Ozone	Ozone Ltd.
		Sevax	Saint Gobain Glass India ltd
109	Spun cast iron fittings	Neco	JayaSwal Neco Ltd
		Tata	Tata
		Electrosteel	Electrosteel
		Kapilansh Centrifugal	Kapilansh Dhatu Udyoo (P)Ltd.
		SKF brand	Singhaliron Founoary Pvt. Ltd.
110	Spun cast iron covers & gratings	Kapilansh Centrifugal	Kapilansh Dhatu Udyoo{P)Ltd.
		Neco	Jayaswal Neco Ltd
		SKF brand	Singhaliron Founoary Pvt. Ltd.,
111	Stainless Steel	Jindal	JSW
		Salem	SAIL
		SAIL	SAIL
112	Stainless steel Butt	Dorma	Dorma India Pvt. Ltd.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	hinges	Prayag	Prayag Polymers (P) Ltd.
		Ozone	Ozone Hardware
113	Stainless steel friction hinges	Hetich	Hetich India
		Haffle	Haffle India Pvt. Ltd.
		Dorma	Dorma
		Geze	Geze
114	Stainless Steel Kitchen sink	Kingston	Kingston/Cobra
		Asian (Bathsense)	Asian Paint Limited
		Prayag	Prayag polymers Pvt Ltd ,
115	Steel Windows/ Pressed steel frames	Accucel	Accura polytech Pvt ltd.
		Madhu industries	Madhu industries, San Harvic, NCL
		NCL	NCL Industries
		San Harvic	San Harvic
116	Structural Steel	JSW	JSW
		SAIL	SAIL
		TISCO	TATA STEEL
		APL APOLLO	APL APOLLO TUBES LIMITED
		VIZAG	RINL
117	Structural sealant	BASF	BASF India Ltd.
		MYK	MYK Arment
118	Synthetic enamel Paint	Berger	Berger Paints
		Dulux	ICI dulex Ltd
		Premium gloss enamel	Asian paint Ltd
		Nerolac	Nerolac Paints Ltd
		Nippon	Nippon Paint India Ltd.
119	Synthetic Sports Flooring	Armstrong	Armstrong flooring
		Gerflor	RMG Polyvinyl India Ltd.
		LG Wondorfloor	LG Hausys India
120	SWR PVC Pipes & fittings	Astral	Astral poiotechnik Ltd.
		ORI PLAST	ORI PLAST LTD
		Sudhakar	Sudhakar PVC Products Private Limited
		JAIN	JAIN IRRIGATION SYSTEMS LIMITED
		AKG	AKG Extrusions Pvt Ltd
		APL APOLLO	APL APOLLO TUBES LIMITED
		Flowkem	Flowkem Poly Plast Pvt. Ltd
		Kothari	Kothari Agritech Private Limited
121	Tempered reflective/ clear glass	Modiguard	Gujarat Guardian Ltd.
		Pilkington	Pilkington India Pvt. Ltd.
123	Thermal Insulation treatment	Asian	Asian Paints Ltd.
		MYK	MYK Arment
		Pidilite	Pidilite Industries
		Weather Kool & Seal	Berger Paints India Ltd.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

124	TMT Bars	JSW	JSW Steel Ltd.
		SAIL	Steel Authority of India Ltd.
		TATA	TATA STEEL LTD.
		RINL	Rastriya Inspat Nigam Ltd.
		JSPL	Jindal Steel and Power Limited
125	UPVC Pipes and fittings (Rain water pipes)	Prayag	Prayag Polymers Private Limited
		ORI PLAST	ORI PLAST LIMITED
		Sudhakar	Sudhakar PVC Products Private Limited
		JAIN	Jain Irrigation Systems Limited
		AKG	AKG Extrusions Pvt Ltd
		APL APOLLO	APL APOLLO TUBES LIMITED
		Flowkem	Flowkem Poly Plast Pvt. Ltd
		Kothari	Kothari Agritech Private Limited
126	UPVC doors, door frames and windows	Rajshri Plastiwood	Rajshri Productions Pvt. Ltd
		SIMTA ASTRIX	M/S. Simta Clear Coats Pvt Ltd.
		MARG	DE Vicino System Solutions
		PSP	PSP Dynamic Limited
		EUMAX	Eureka Windoor Systems Pvt. Ltd.
		Duroplast	M/s. Duroplast India Private Limited.
		Sudhakar	Sudhakar PVC Products Private Limited
		LGU-UPVC	LGU UPVC INDIA LLP
127	UPVC Hardware	MARG	DE Vicino System Solutions
		PULSE	LGF SYSMAC (India) Pvt.,Ltd.
		PSP	PSP Dynamic Limited
128	Vitreous Commodes/ Washbasin	CERA	CERA Sanitaryware Ltd.,
		Jaquar	Jaquar Group
		Kohler	Kohler world Wide
		Parryware	ROCA Bath Pvt. Ltd.,
		Roca	ROCA Bath room products
		Somany	Somany Ceramics Ltd.
129	Vitrified paving tiles	Durostone	Ever stone International
		Johnson	Johnson India
		Kajaria	Kajaria Ceramics
		PAVIT	PAVIT Ceramics Pvt. Ltd.
130	Vitrified Tiles	Johnson	Prism Johnson Ltd.
		Kajaria	Kajaria Ceramica Limited
		RAK	RAK Ceramic India Pvt. Ltd.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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		Oasis	M/s Oasis Vitrified Pvt.Ltd.
		VARMORA	VARMORA Granito Ltd
		NITCO	NITCO Limited
131	Water Proof Plywood, Commercial ply, Fire retardant ply and Block boards / Shuttering ply	Archidply	Archid Ply Industries Ltd.
		Century ply	Century Flush Doors
		SYLVAN PLY	Sylvan Plyboard (India) Limited
132	Water Proof cement paint	Asian exterior wall primer	Asisn paint
		Berger	Bergar Paints
133	Water supply Valves	ARCO	Arco valves Pvt. Ltd ,
		leader	leader valves Ltd ,
		Nanda	Nanda Miller company
		Somany	Somany
		Zoloto	Zoloto Industries
134	Welding rods	Advani	Advani oerlikon Ltd.
		ESAB	ESAB India Pvt. Ltd.
		Modi	Modi
135	Water supply fixtures like bibcock, Shower panels	Johnson	Prism Jhonson Ltd
		Kingston	Kingston brass India
		Parryware	ROCO bath roam products Pvt. Ltd,
		Prayag	Prayag polymers Pvt Ltd ,
		ROCA	ROCA
		Jaquar	Jaquar
		Kohler	Kohler
		CERA	CERA
		Somany	Somany Ceramics Ltd.
136	Water proofing Compound	Dr. Fixit	Pidilite industries
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.
		Fosroc	Fosroc India
		MYK	MYK Arment
		Sika	Sika India
		Asian (Smartcare)	Asian Paint Limited
		Berger	Berger paints India ltd
137	Water stops	Ardex Endura	Ardex Endura Ltd.
		BASF	BASF India Ltd.
		MYK	MYK Arment
		Ferrous Crete	Ferrous Crete (India) Pvt Ltd.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

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		Hydroswell	Sika India
		Hydrotite	Sika India
		Kryton	M/s Kryton Building Co. Pvt, Ltd.
138	Water proofing materials/ GP Grouts	Fosroc	Fosroc India
		Ferrous crete	Ferrous Crete (India) Pvt Ltd
		Home shield Super grout	Berger Paints Ltd.
		Pidilite	Pidilite Industries
		NEWCRETE	NEWCRETE Building Solutions Pvt. Ltd
		SIKA	SIKA India
		Berger	Berger paints India ltd
		MYK	MYK Arment
		Asian	Asian Paint Limited
		Kryton	M/s Kryton Building Co. Pvt, Ltd.
		Ramco Hard Worker	The Ramco Cements Limited
139	Weather silicon make and grade	Down corning	Down corning india
		Momentive (GE)	GE silicones
140	White Cement	Birla	Birla Corporation Ltd.
		J.K.	JK Cement Ltd.
141	Wood Polymer composite material for door frames and shutters, Jali, plain/pre laminated boards for wall linings etc.	Alstone	Alstone Industries Pvt. Ltd.
		Green Ply	Green Ply Pvt Ltd
		Rajshri Plastiwood	Rajshri Production Pvt. Ltd.
		Falcon	Falcongreen Solutions Pvt. Ltd.
		Duroplast	M/s. Duroplast India Private Limited.
142	Wooden Flush door shutters	Green Ply	Green Ply Industries Ltd.
		Mayur	Mayur Ply
		Indoprime	Falcon Green & Indoprime
		SYLVAN PLY	Sylvan Plyboard (India) Limited
		REDMOND	REDMOND DOORS
		Greenlam	Greenlam Industries Limited

NOTE: Brands other than mentioned in above approve list (SL No. 1 to 142), can be approved by Chief Engineer based on proposal of Engineer-in-charge.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

PART- C

Electrical & Mechanical Works

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

Association of Agencies for Execution of E&M Works by Main Contractor

1. The main contractor has to enter into MoU with eligible E &M agencies/contractor(s) associated by him **for each sub heads of E & M works**. The Composite Contractor and the associated specialized agencies is given required affidavit to confirm their association. Copy of such MoU shall be submitted to EE (E) in charge of each relevant component as well as to EE in charge of major component. The **Eligibility Criteria for Association of Agencies for Execution of E&M works** are detailed in **Para 10** below.
2. Tender accepting authority approves the change of Sub-Agency in case it is required during the currency of the contract. The new agency/agencies shall also have to satisfy the laid down eligibility criteria. In case Engineer-in-charge is not satisfied with the performance of any agency, he can direct the contractor to change the agency executing such items of work and this shall be binding on the contractor.
3. In event of the concerned E&M agency not performing satisfactorily or failure of associate/sub-contractor to complete the E&M work, the main contractor on the written direction of the department, shall remove the Associate/sub-contractor deployed on the work and shall submit name of new associate who fulfills the conditions mentioned in NIT to execute the leftover work without any loss of time or variation in cost to the department in this regard. Such associates shall also enter into Agreement with the main tenderer and shall meet all the guarantee for the equipments already supplied for which payment has been released by the department in part. If any equipment supplied for the work, during the currency of the earlier Associate/sub-contractor and paid partly by the department, becomes redundant /not in a position to be installed and commissioned and put to beneficial use due to change in agency for execution of E&M work, the main contractor shall be liable for replacement of the equipment(S) at no cost to Department, No change of Electrical Contractor will be allowed without prior approval of the Tender accepting authority.
4. The main firm should submit the willingness from eligible electrical/specialized contractors to get associated with them for execution of the electrical component of works in wholesome manner and as per the conditions set out in the MOU to be entered into, between the one who is awarded the work and the associated eligible electrical contractor.
5. In support of the eligibility conditions of the proposed associated electrical Agencies, copy of their registration documents, Electrical Contractor's License, GST documents, eligibility documents, Experience Certificate by competent authority, shall have to be submitted. Such associate electrical Agencies will certify that they are not debarred as on the day of application by Central Govt /State Govt. Deptt., Central/State Govt.PSU/ Autonomous Bodies.
6. The main contractor shall be responsible and liable for proper and complete execution of the E&M Services, and ensure coordination and completion of both civil and electrical works.
7. The associate or sub-contractor shall attend the inspection of the work by the Engineer-in-charge of E&M works as and when required. The agencies executing the electrical work should have valid license for LT/HT as applicable and as described in eligibility criteria.
8. Verifiable completion certificates of the work eligibility documents as the case may be, duly attested by the applicant shall be submitted. Valid Electrical Contractor' license, as the case may be, duly countersigned by the applicant as well as signed by the associate contractors shall also be submitted. Self-attested GST documents in respect of the associated agencies as well as signed by associate firms shall be submitted along with the tender documents.
9. For the different E&M subheads, the main contractor will have to engage the associate electrical contractor/specialized agency in the field after award of work as per following:-

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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- i. The main contractor / firm should either himself meet the eligibility conditions for the respective E&M packages or otherwise he will have to associate an agency meeting the eligibility requirements given below.
- ii. The firm should have successfully completed similar works during the last 7 years ending upto previous day of last date of submission of tender for each sub heads:
- iii. The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to the last date of submission of bid.

10. **Eligibility Criteria for Association of Agencies for Execution of E&M Works.**

- 10.1 Sub-head wise total cost is taken as below for the purpose of Eligibility Criteria only, which is rough cost and should not be used or interpreted for any other purpose.
- 10.2 SITC means: Supplying, Installation, Testing & Commissioning.
- 10.3 The main contractor/ lowest tenderer, is also eligible to carry out work himself / herself any or all of these works without associating any specialized agency provided:-
 - i. He fulfills the prescribed eligibility criteria respectively for these work(s).
 - OR
 - ii. He directly procures the equipment of approved make from manufacturer and gets it installed from authorized agency/service provider of the manufacturer or specialized agency as per criteria mentioned in NIT.
- 10.4 The lowest tenderer/ main contractor has to submit, along with the performance guarantee after the acceptance of tender, an undertaking from the OEM regarding:-
 - i. Authorization certificate.
 - ii. The OEM is unconditionally support the lowest tenderer technically throughout the execution of contract as well as for maintenance/comprehensive maintenance contract for the useful life of the system.
 - iii. OEM is providing all the spares required for healthy functioning of the equipment for at least seven years from the date of supply of equipment.

14.5 The Eligibility criteria for association of agencies for execution of E & M works for respective subhead/package with definition of similar work are detailed in table below:

S.N	Components of E&M works	Estimated Cost in Lacs	Minimum eligibility Criteria
1	Internal Electrical Installations, MCBS, DB, Rising Main, Fittings & Fans, Panels and Service Connection, Earthing & Lightning Arrester, Emergency Light & Illuminated Signage, Street Lighting, Solar PV Power Generation	Rs. 223.33 Lacs	The main contractor shall either himself meet the eligibility conditions or may associate with contractor registered in Buildings & Roads category of appropriate Class in CPWD for execution of this Sub head of work, possessing valid Electrical Contractor License of appropriate Voltage issued by competent authority.
2	Fire Alarm System & PA System, WET RISER SYSTEM WITH SPRINKLER SYSTEM	Rs.150.85 Lacs	The main contractor shall have to associate with agency fulfilling the following eligibility criteria successfully completed during last seven years ending up to previous day of last date of submission of tender as given.

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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			Three similar completed works each of value not less than 40% of estimated cost. OR Two similar completed works each of value not less than 60% of estimated cost. OR One similar completed work of value not less than 80% of estimated cost. Similar work shall mean "SITC of Fire Alarm System & PA System, WET RISER SYSTEM WITH SPRINKLER SYSTEM "
3	DG Set	Rs. 8.85 Lacs	The main contractor shall have to associate with agency fulfilling the following eligibility criteria successfully completed during last seven years ending up to previous day of last date of submission of tender as given. Three similar completed works each of value not less than 40% of estimated cost. OR Two similar completed works each of value not less than 60% of estimated cost. OR One similar completed work of value not less than 80% of estimated cost. Similar work shall mean "SITC of Diesel Generating Set having individual capacity not less than 25 KVA."
4	Substation	Rs. 16.54 Lacs	The main contractor shall have to associate with agency fulfilling the following eligibility criteria successfully completed during last seven years ending up to previous day of last date of submission of tender as given. Three similar completed works each of value not less than 40% of estimated cost. OR Two similar completed works each of value not less than 60% of estimated cost. OR One similar completed work of value not less than 80% of estimated cost. Similar work shall mean "SITC of Sub Station Set having individual capacity not less than 100 KVA."
5	Networking System & CCTV and Conference System & AV System	Rs.21.42 Lacs	The main contractor shall have to associate with agency fulfilling the following eligibility criteria successfully completed during last seven years ending up to previous day of last date of submission

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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			of tender as given. Three similar completed works each of value not less than 40% of estimated cost. OR Two similar completed works each of value not less than 60% of estimated cost. OR One similar completed work of value not less than 80% of estimated cost. Similar work shall mean "SITC of Networking System & CCTV"
6	UPS	Rs.5.05 Lacs	The main contractor shall have to associate with agency fulfilling the following eligibility criteria successfully completed during last seven years ending up to previous day of last date of submission of tender as given. Three similar completed works each of value not less than 40% of estimated cost. OR Two similar completed works each of value not less than 60% of estimated cost. OR One similar completed work of value not less than 80% of estimated cost. Similar work shall mean "SITC of UPS having individual capacity not less than 6 KVA."
8	VRF TYPE AIR CONDINTIONING SYSTEM	Rs.116.60 Lacs	The main contractor shall have to associate with agency fulfilling the following eligibility criteria successfully completed during last seven years ending up to previous day of last date of submission of tender as given. Three similar completed works each of value not less than 40% of estimated cost. OR Two similar completed works each of value not less than 60% of estimated cost. OR One similar completed work of value not less than 80% of estimated cost. Similar work shall mean "SITC of Split Type AC."
9	Lift	Rs.25.81 Lacs	The main contractor shall have to associate with agency fulfilling the following eligibility criteria successfully completed during last seven years ending up to previous day of last date of submission of tender as given.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

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			Three similar completed works each of value not less than 40% of estimated cost. OR Two similar completed works each of value not less than 60% of estimated cost. OR One similar completed work of value not less than 80% of estimated cost. Similar work shall mean "SITC of Lift."
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Note: The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum calculated from the date of completion to last date of submission of tender.

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

WILLINGNESS CERTIFICATE FROM CONCERNED COMPETENT ELECTRICAL CONTRACTOR

(Separate for each sub head of E&M)

Name of Work :

I hereby give my willingness to work as E&M Contractor for Sub Head _____ of the above mentioned work. I will execute the work as per specifications and conditions for the agreement and as per direction of the Engineer-in-charge. Also I will employ full time technically qualified supervisor for the works.

I will attend inspection of officers of the department as and when required.

Dated:

Signature of Main Contractor

Signature of Associate Electrical Contractor

Address

and Registration detail Address:

Telephone:

Telephone:

FAX:

FAX:

Email:

Email:

AFFIDAVIT OF MEMORANDUM OF UNDERSTANDING (MOU)
(to be submitted for each and every E&M component)

1. M/s. (Name of the firm with full address)
2. Enlistment Status
Valid Upto:
(Henceforth called the main Contractor)
3. M/s. (Name of the firm with full address)
4. Enlistment Status
Valid Upto:
(Henceforth called Associated Contractor)

For the execution of E & M Component Works –

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 shall 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, Bhubaneswar. His decisions shall be final and binding on both of us. We have agreed as under:

5. The Associated Contractor will execute all E & M works in the wholesome manner as per terms and conditions of the agreement.
6. The Associated Contractor shall be liable for disciplinary action if he fails to discharge the action(s) and other legal action as per agreement.
7. All the machinery and equipments, tools and tackles required for execution of the E & M works, as per agreement, shall be the responsibility of the Associated Contractor.
8. The site staff required for the E & M work shall be arranged by the Associated Contractor as per terms and conditions of the agreement.
9. 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.
10. All the correspondence regarding execution of the E & M 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	2. Witness with address
(From major component contractor side)	(From minor component contractor side)

Correction – Nil, Insertion – Nil, Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)
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GENERAL CONDITIONS FOR ALL E&M PACKAGES

1. The scope includes Design, Planning, Supply, Installation, Testing and Commissioning of following E&M Works/Services with best industry standards and practices, as per CPWD Specifications, Building Bylaws, Local Fire Service rules, NBC 2016, ECBC 2017, CPCB, Pollution Control Board, NABH, relevant IS Codes, Indian Electricity Rules and Acts all amended upto date. All working drawing/route plan for different E&M services shall be prepared and submitted by the contractor and shall be got approved from the Engineer-in-charge before execution of the work.
2. The Contractor shall prepare and submit to the Engineer-in-charge, an integrated programme chart. The integrated programme chart submitted by the contractor shall not have any discrepancy with the financial milestones attached in the contract agreement. The contractor shall execute the work according to the programme submitted to and approved by the Engineer-in-Charge.
3. The CPWD specification to be followed are as mentioned below all amended upto date :
 - i. CPWD General Specifications for Electrical Works Part I Internal – 2013 & 2023.
 - ii. CPWD General Specifications for Electrical Works: Part-II-External Work- 1994,& 2023.
 - iii. CPWD General Specifications for Electrical Works (Part-III-Lifts & Escalators) - 2003.
 - iv. CPWD General Specifications for Electrical Works Part IV Sub Station – 2013.
 - v. CPWD General Specifications for Electrical Works Part V Wet Riser & Sprinkler System– 2020.
 - vi. CPWD General Specifications for Electrical Works Part VI Fire Detection and Alarm System– 2018.
 - vii. CPWD General Specifications for Electrical Works Part VII D.G. Sets - 2013.
 - viii. CPWD General Specifications for Electrical Works Part VIII Gas Based Fire Extinguishing System – 2013.
 - ix. CPWD General Specifications for Heating, Ventilation & Air-Conditioning (HVAC) - 2024
4. In the case of discrepancy between the schedule of Quantities, the Specifications and/ or the Drawings, the following order of preference shall be observed:-
 - i. Description of Schedule of Quantities.
 - ii. Particular Specification and Special Condition, if any.
 - iii. Drawings.
 - iv. CPWD Specifications.
 - v. Indian Standard Specifications of B.I.S.
5. If any doubts of intending tenderers shall be clarified, besides discussions on any additional suggestion proposed by the tenderers can be clarified in prebid conference (if it is in in tender) . If the tenderers feels that specific departure from specifications are necessary for meeting requirements stipulated for any item, they may submit a list of such departures or proposed change in specifications in the pre-bid conference for discussions. If found necessary a corrigendum to the tender documents will be issued to all the intending tenderers and thereafter no further query/condition, change in technical specifications shall be entertained. The tenderer is advised not to leave blank or write irrelevant information in the schedules. In event no rate has been quoted for any item(s), leaving space both in figure(s), word(s) and amount blank, it will be presumed that the contractor has included the cost of this/ those item(s) in other items and rate for such items will be considered as “zero” and work will be required to be executed accordingly.
6. The competent authority on behalf of President of India reserves to himself the right of accepting the whole or any part of the tender and the tenderers shall be bound to perform the same at the rate quoted. In such case, the Department also reserves the right to award the balance part of the tender and / or any other contracts to other agencies at the sole discretion of the Department. The decision of the

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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Department in this regard shall be final and binding on the contractor and no claim of whatsoever nature shall be entertained from the contractor on this account.

7. The Contractor shall assume all liability, financial or otherwise in connection with his 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 reason whatsoever and shall himself defend all actions arising from such claims and shall keep the department saved harmless and indemnified in all respect from such actions, costs and expenses. Nothing extra shall be payable on this account.
8. Before commencing the 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. Nothing extra shall be payable on this account.
9. The Tenderer may, before submission of the tender, inspect the CPWD specifications in the office of the Engineer-in-Charge. The department shall not bear responsibility for the lack of knowledge and also the consequences thereof to the Contractor. The information and data shown in the drawings and mentioned in the tender document have been furnished in good faith and for general information and guidance only. The Engineer-in-Charge in no case shall be held responsible for the accuracy thereof and / or interpretations or conclusions drawn there from by the Contractor and all consequences shall be borne by the Contractor and no claim, whatsoever, shall be entertained from the Contractor, if the data or information furnished in tender document is different from data / drawing for actual construction issued after the award of work or in-correct otherwise. It is presumed that the Contractor has satisfied himself for all possible contingencies, situations, bottlenecks and acts of coordination, which may be required between different agencies.
10. All incidental charges of any kind including cartage, storage, wastage and safe custody of material etc. shall be borne by the Contractor and no claim whatsoever shall be entertained on this account.
11. Storage and safe custody of all materials shall be the sole responsibility of the Contractor. Nothing extra shall be payable on this account.
12. The materials shall be procured only from the manufacturers and their authorized dealers and documentary proof for such procurement and supply shall be produced by the contractor. The department reserves the right to send such materials to the manufacturers / authorized test laboratory to verify the genuineness and quality of the product. All materials equivalent to the one specified should be got approved by the Engineer-in-charge before using the said materials in the work. The Contractor shall make available, on request from the Department, for record, copies of challans, cash memos, receipts and other certificates, if any, vouchers towards the quantity and quality of various materials procured and the same shall be kept in record. Nothing extra shall be payable on this account.
13. If the department desires to send any samples of materials for testing in a accredited laboratory, the Contractor at his own expense shall supply all materials, labour for preparing and testing samples as required by the Engineer-in-Charge. The testing shall be carried out in the presence of the representative of the Engineer- in- Charge. The testing charges shall be borne by the Department only when the samples satisfy the provision specified and conform to the requirement of the relevant specifications. If the results show that the samples do not satisfy the relevant specification, the testing charges shall be borne by the contractor.
14. 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 Contractors or by the Engineer in charge and shall as far as possible arrange his work and shall place and dispose off the materials being used or removed so as not to interfere with the operations of other Contractors or shall arrange his work with that of the others in an

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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acceptable and coordinated manner and shall perform it in proper sequence to the complete satisfaction of others.

15. The Engineer-in-Charge shall not be precluded or stopped from taking any measurements, and framing of estimates or detaining any certificates made either before or after the completion and acceptance of the work and payment, from showing the true amount and character of the works performed and materials furnished by the Contractor and from showing that any such measurements, estimates or certificates untrue or incorrectly made and that Engineer-in-charge shall not be precluded or stopped from recovering from the Contractor such damages as it may be sustained by reasons of his failure to comply with the terms and conditions of the contract.
16. The tenderers shall take into account the element of wastage(s) those are likely to be there in all elements of the work and quote his price, taking that into account. The tenderers shall study all the items from the point of view of wastage(s), which are likely to take place.
17. The contractor or his authorized representative shall sign the site order book and comply with the remarks entered therein by the representative of the Department.
18. All sundry equipment, fittings, assemblies, accessories, hardware items, bolts, supports, termination lugs for electrical connection, cable glands, junction box and all other sundry items for proper assembly and efficient working of the various equipment and components of the work shall be deemed to have been included in the scope of work, irrespective of the fact whether such items are specifically mentioned in the tender document or not.
19. All cutting and making holes and finishing the same in building should be responsibility of the main contractor. Any Damage done to the building during the execution of electrical work shall be made good immediately at his own cost to the entire satisfaction of the Engineer-in-Charge.
20. It is the responsibility of the contractor to arrange required power supply and water supply for installation and testing purposes during the contract period. Nothing extra shall be paid on this account. The work will be considered as complete only after complete energisation and operation of all E&M Systems and issue of test results as per CPWD specifications after completion of all work
Defect liability period (DLP) for All equipments are 12 months (except LED fittings which shall have DLP for minimum 5 years), from the date of taking over the installation by the department, against unsatisfactory performance and/or break down due to defective design, workmanship or material. The equipments or components, or any part thereof, so found defective during DLP shall be forthwith repaired or replaced free of cost, to the satisfaction of the Engineer-in Charge. In case it is felt by the department that undue delay is being caused by the contractor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of the Engineer-in-charge in this regard shall be final & binding on the contractor.
Any additional specifications/ conditions are to be read in conjunction with schedule of quantities for the work. However, nothing extra shall be paid on account of these additional specifications and conditions, as the same are to be read alongwith schedule of quantities for the work
No T&P shall be issued by the Department and nothing extra shall be paid on account of this.
The acceptable makes of various equipments / components/ accessories have been indicated in "Acceptable Makes" indicated in the list attached. The tenderer shall work out the cost of the offer on this basis. Alternate makes are not acceptable. The makes and models offered should be as per the specification and BOQ of the NIT. The decision of Engineer-in -charge is final in this regard. The materials can be brought to site only after the due approval of drawings, makes, models from the department only.
21. Within prescribed time period as per the mile stone the contractor shall submit List of makes & Model of E&M equipments and accessories including technical documents e.g Catalogues, technical write up, design details etc. as required for the approval of the products.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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22. Documents to be provided on Completion of Work:-Three sets of following documents shall be furnished to the department by the contractor on completion of work:-

- i. 3 sets of Completion drawings (as built).
- ii. 3sets of manufacturer's technical catalogues of all equipment and accessories.
- iii. Operation and maintenance manual of all major equipment, detailing all adjustments, operation and maintenance procedure.
- iv. Soft copy of as built drawings in AutoCAD format in CDs.
- v. Completion certificate as per CPWD specification if any.

23. Public Procurement (Preference to Make in India) Policy:-

To encourage Make in India and promote manufacturing and production of goods and services in India with a view to enhancing income and employment, the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, pursuant to Rule 153(iii) of the GFR 2017, have issued orders for procurement through local suppliers vide order no. P-45021/2/2017-PP(BE-II) dt:04.06.2020 & latest amendments. As per the provisions of these orders, purchase preference shall be given to locally manufactured goods and locally provided services as applicable in compliance to the NIT. The agency shall submit list of makes of materials proposed to be used on the work from suppliers as per these order for approval of the department out of the approved make kept in the tender.

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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TECHNICAL SPECIFICATIONS OF LED FITTINGS

The following Technical Specifications shall also be followed as mentioned below:-

LED Luminaire Specifications.

S.No	Criteria	Specification
1	Luminaire configuration/ technical requirement	As per the description mentioned in BOQ
2	Housing/ body of fitting	CRCA / Pressure Die cast Aluminium/ Aluminium Extruded Housing
3	Cover/ Diffuser	Poly carbonate/ Acrylic UV protected/ PMMA / Toughened glass.
4	Finish	Aesthetically designed housing with corrosion resistant powder coating.
5	Operating Voltage	140V to 270V universal electronic driver with internal surge protection. (Except strip light which has 230V)
6	Frequency	50 Hz
7	Fixture Ambient	+ 40 deg. centigrade
8	Operating temperature	Range 0 to +55 deg. centigrade
9	Power factor	>0.9
10	Optical assembly	Array of medium power LEDs/ COB
11	Luminous flux	As per BOQ
12	Efficacy of luminaire (including power loss)	As mentioned in BOQ
13	Efficacy of LED Chip	>135 lumen per watt (At Chip Level)
14	Co-related colour temperature	As mentioned in BOQ
15	C.R.I.	>80
16	Heat dissipation/ Heat sink	Well designed thermal management system with aluminium heat sink.
17	LED drive current	Not more than 350 mA
18	Driver efficiency	> 85%
19	Make of LED	CREE/ LUMILEDS/ OSRAM/ NICHIA/ SEOUL SEMI CONDUCTOR/PHILIPS
20	LED Lifespan & Luminaire photometric data	IESLM70 ,IESLM79 and IESLM80

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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21	Harmonics	< 10%
22	Lumen maintenance @85deg c on LED life	Minimum 70% up to 50000 hrs (Indoor application) and Life expectancy 50,000 hrs for LED
23	Surge Voltage	As per BOQ
24	Outer Body Luminaire Temperature	Max. up to 70 Deg C (with +/-5 Deg) at 30 Deg C ambient Temperature
25	Standard Warranty	5 years
26	Certificates to be submitted	LM 70, LM 79 and LM 80

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

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Additional Conditions for External Electric Installation

The scope of this work consists of planning, designing and SITC of street lighting. (It is responsibility of the contractor to ensure that the work of external lighting has to be executed as per guidelines specified in NBC 2016).

1	Street lighting	LED Street light fittings of suitable wattage and poles As Per BOQ of suitable height as per CPWD specifications and NBC 2016 and as per approved design with suitable armoured cabling laid as per norms and specifications.
2	Feeder pillar	fabricated with astronomical timer and as per CPWD specifications by fabricator as per approved make list.
3	Connecting cables	Substations to feeder pillar and from feeder pillar to light poles with 4 core Aluminium armoured UG cables laid in DWC pipes as per approved norms and specifications.

Signages / Sign Boards: The scope of works consists of

Signages: Designing , manufacturing, providing and fixing of self-glowing photo luminescent safety sinages on 1.2 mm thick aluminium sheet of various matter as briefed by the Engineer-in-charge such as electrical safety precaution, instructions for lift passengers, fire safety measures, indication of various shafts, entrance , exit, stairs, toilets, fire exit etc having single side printing / computerized setting of letters on the photo luminescent as base chemical covered with stabilizer coating complete as required for various buildings under construction . Wherever required light illuminated signages shall be used.

Sign Boards (For various buildings): The scope of work also consists of design, supply, fabrication and fixing of sign board using word made of acrylic cut out letter with LED and reflecting vinyl sheet as per design approved by Engineer-in-charge. The board shall be fabricated with 3mm thick ACP sheet. Powder coated aluminum sheet shall be fixed from the rear side of the entire board to make box section. Powder coated aluminum cuts and bracket shall be used of minimum 3 mm thickness.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

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Additional Technical Specification and Conditions for CCTV & Networking System

- 1.0 Scope:-** The scope of work in the this tender includes all works of planning , designing, supplying, installation, connection, testing and commissioning of close circuit television based video surveillance system. The necessary wiring with CAT 6/6A cable would be done in recessed MS/PVC conduit which is included in scope of work and work consists of installation of the cameras, network switch, NVR including connections testing and commissioning etc. as required.

The CCTV System for the work shall be dome/ bullet/ PTZ dome/ IP panaromic type vandal resistant night viewing full HD cameras with all features which are needed for the security cameras such as camera, speaker, microphone motion and light sensor etc. Cameras compact profile shall blend discreetly into a wide range of commercial environments such as safeguarding offices, art galleries, display cases, passages, entrances etc. Technical specification as mentined in item no- 31.3 to 31.6

The system generally covers:

- (1) IP CCTV cameras, indoors and outdoors with housing
- (2) Monitors & Video modules/devices
- (3) Video Signal processing equipment
- (4) Video Management System
- (5) All interface elements, alarms GUI, wiring & cabling required to make system complete and fully functioning.

2.0 Main Features

Full HD resolution: It shall have full HD resolution supporting H.264/265 etc and 20/30/60 fps (IP).

Wide Horizontal Viewing Angle: The cameras lens shall cover entrances, doorways, and display cases etc. with a wide horizontal viewing angle of upto 120°. The firm shall however check the precise requirement at the site of work.

Passive Infrared (PIP) Sensor: A passive infrared (PIP) sensor shall be able to detect movements in total darkness by measuring the intruder's body temperature and to illuminate surroundings automatically with a white LED illuminators or when activated by the user. The PIP sensor shall also be able to trigger other actions, like recording on optional micro SD/SDHC card, giving voice alerts via the built-in speakers or sending and email notification/ action as deemed fit by the engineer-in-charge.

Picture Mode: Picture mode shall be selectable from a range of camera scenes in the setting menu to optimize picture quality in various applications. This mode shall have the following options:

- "Standard"
- "Situation Priority–Moving object" to stabilize images
- "Situation Priority-Low Noise" to reduce noise on images, specially dark scenes
- "Flicker less" to reduce the flicker on images according to power frequency

Integrated Signal Processing System: the signal processing system shall combine unique signal processing and video analytics technologies for high picture quality.

CMOS: The camera sensor shall realize high quality and low noise images. The high speed readout characteristics of the sensor shall ensure to capture multiple Full HD resolution images at a very high speed.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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Visibility Enhancer/ Wide Dynamic Range Technology: The system shall be having visibility enhancer technology to optimize the brightness and color reproduction of the image dynamically on a pixel-by-pixel basis while continuously adapting to the scheme. This method differs from the technique of using the preset gamma curves. The technology shall stretch the contrast in both the backlit portions and the shadows within the given dynamic range.

Noise Reduction: The system shall have inbuilt dynamic noise reduction feature to reduce noise to provide clear images without motion blur and auto noise gain control. The Visibility Enhancer/ WDR and Dynamic Noise Reduction technology shall work in conjunction with each other and shall provide approximately four times sensitivity compared to the condition where both features are set to off.

Intelligent Motion Detection (IMD): The system shall be able to minimize the number of false alarms by eliminating environmental noise such as trees moving, ripples in water, reflection from wet surfaces. The property shall ensure that only ambiguous objects moving can trigger a real alarm like movement of articles in the display cases and or movement of display cases themselves. The feature shall enable security staff to focus on real event and not suffer from loss of attention due to false alarm activation.

Enhanced Processing Architecture: The system shall be preferred having the technology to extend the benefits of unique conventional intelligent video analytics and enables its functionality to be used with third party software vendors. Alternatively the cameras shall be configured using the web interface to be a standalone intelligent surveillance solution. Although, all camera feeds are proposed to be recorded on the NVR and displayed on the monitor through switcher control.

ONVIF Compliance: The cameras shall be compliant with the Open Network Video Interface Forum Profile S (ONVIFS).

3.0 VMS 32/64 Channel, NVR

Sr. No	Description	Compliance
1	The Video Management System (VMS) shall be a Microsoft Windows-based video management and surveillance system consisting of two primary components, as follows:	
2	An IP video management system. This application shall:	
a	Maintain the database of cameras and recording devices and to provide a web-based administrative portal to manage the video surveillance system	
b	Route video traffic to users as requested and appropriate	
c	Record and store video from resources on the network	
2	A client presentation application to allow users to view and manage live and recorded video. The Video Management System (VMS) shall be a Microsoft Windows-based video management and surveillance	

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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	system consisting in a single server performing the following functions:	
(i)	Allow users to define users and assign sets of permissions (known as roles) to each user	
(ii)	Record and store video per user-defined retention settings for up to 64 cameras per server	
(iii)	Serve live and recorded video to clients on demand	
3	The IP video management system shall record video and audio streams from IP cameras and video encoders on the network	
4	Video: H.264 in High, Main, or Base Profile streams from both standard resolution and megapixel cameras	
5	The system shall support recording schedules, including the ability to record based on motion, analytic, and alarm events	
6	The IP video management system shall be capable of continuous scheduled alarm/event and motion recording. Pre- and post- alarm recording shall also be available and shall be fully programmable on a per channel basis.	
7	The IP video management system shall have the ability to record and playback audio streams along with associated video.	
8	The IP Video Management System shall support recording of primary or secondary streams.	
9	The IP Video Management System shall support video bookmarking, such that users can identify and recall important moments in recorded video	
10	The IP video management system shall allow the administrator to set minimum and maximum retention periods for recorded video	
11	The IP video management system shall support network health and monitoring utilizing third-party SNMP monitoring tools.	
12	The IP video management system shall indicate system performance and operation status utilizing a variety of reports	
13	The system shall be configurable remotely or over a network.	
14	The system shall discover both Pelco and 3rd-party cameras on the	

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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	network.	
15	The system shall allow users to manually add cameras and devices by IP address.	
16	The system shall allow users with sufficient rights to control cameras (pan, tilt, and/or zoom).	
17	The system shall support aggregation by a higher-level system , tying multiple VMS servers together in a single, unified environment	
18	The system shall support third-party cameras using ONVIF profiles S and G or native drivers.	
19	The IP VMS shall support Lightweight Directory Access Protocol (LDAP) to authenticate users	
20	VMS can Imports users and roles from existing LDAP servers to reduce administrative overhead, and enables single sign-on (SSO)	
21	The IP video management system shall allow archival of video data to external network locations or NAS devices over a network connection. The archival schedule shall be either automatic at user-defined intervals or manually executed.	
22	The video management system shall be available as a hardware server with capacity to record 64 cameras at up to 450mbps recording throughput.	
23	The video management system shall be available as a software product that can be installed on COTS hardware.	
24	The server shall support semantic grouping and organization of cameras/devices into groups using “tags”.	
25	The system shall allow users to export video on request; exported video shall be stored locally on the server or on another network location selected by the administrator.	
26	The system shall support aggregation by a higher-level environment, allowing the IP video management system to belong to a confederation of servers.	
27	Check on VMS and camera health using SNMP	
Other technical specification as mentioned in item no- 31.7		

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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4.0 Monitor Features

1. LED monitor shall be provided as per schedule of work.
2. Monitor shall support Full HD resolution or higher.
3. HDMI/VGA input support shall be provided.
4. Suitable wall/table mounting arrangement shall be included.
5. Power cables and interconnection accessories shall be included.

5.0 PoE Switch & Network Accessories

The network infrastructure shall include:

- L2 Managed PoE Switches,
- L2 Managed Non-PoE Switches,
- L3 Managed Switches (where specified),
- LIU,
- Patch Panels,
- CAT-6/CAT-6A cables,
- Equipment Rack.

6.00 Switch Features

1. IEEE 802.3af/at compliant PoE support.
2. VLAN, QoS, IGMP Snooping, STP/RSTP support.
3. SNMP management support.
4. Rack mountable design.
5. Surge and overload protection.
6. Adequate uplink ports including SFP ports where required.

7.0 Cabling & Installation

1. All network cabling shall be CAT-6/CAT-6A FRLS cable.
2. Cabling shall be laid in heavy-duty PVC/MS conduit.
3. Proper tagging, ferruling, dressing, and termination shall be carried out.
4. All accessories required for complete installation shall be included in the scope.
5. Earthing and surge protection for outdoor equipment shall be provided.

8.0 Testing & Commissioning

The contractor shall:

1. Test all cameras, recording systems, switches, and network components.
2. Configure recording schedules, motion detection, analytics, and user permissions.
3. Demonstrate complete functionality to the Engineer-in-Charge.
4. Submit test reports, IP addressing scheme, and as-built drawings.
5. Provide training to authorized personnel.

8.0 Warranty

The complete CCTV surveillance system shall be covered under Defect Liability Period (DLP) for a minimum period of One (01) Year from the date of successful commissioning/completion of the work or as specified in the Schedule of Work/BOQ. During the DLP, the contractor shall be responsible for attending, repairing, replacing, and rectifying all defects, failures, malfunctions, and deficiencies in the system including equipment, accessories, cabling, software, and workmanship at no extra cost to the department. All defective components shall be replaced with new genuine parts of equivalent or higher specifications as approved by the Engineer-in-Charge.

9.00 The equipment/devices supplied at site shall mandatorily comply with STQC IoTSCS PPO certification as per extant govt. order.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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Additional Conditions for NETWORKING & CCTV SYSTEM

1. The design and drawing, SLD/Block diagram for NETWORKING & CCTV system shall be approved by Engineer-in-charge before execution of the work at site.
2. The technical specification of material of NETWORKING & CCTV system mentioned in BOQ shall be strictly followed during procurement of material.
3. The lowest tenderer is to submit undertaking from the OEM as below.
 - a. Authorization certificate.
 - b. The OEM shall have unconditional support technically throughout the execution of contract as well as for maintenance/comprehensive maintenance contract for the useful life of the system.
 - c. OEM shall provide all spare parts required for the healthy functioning of the equipment for at least seven years from the date of supply of the equipments.

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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LAN Networking System

I. CATEGORY 6 MODULAR PATCH PANEL, (24 PORTS – 1U)

S. No	Minimum Specifications / Functionalities / Capabilities
	UTP angled Jack Panel UL listed, loaded with 24 nos. UTP ports for PCB based IO Jacks (RJ45, TIA-568C Category-6, Installation and Termination of all 24 nos. Category-6 UTP Cable
1	Minimum Specifications
1.1	Shall be loaded with individually replaceable 24 nos. Category-6 I/O Jacks complying with TIA-568.C.2
1.2	Shall be 19” rack mountable , angled and of 1U height & complete with all mounting accessories, UL listed
1.3	Shall have labels for identification of ports
1.4	Should have integrated bonding bar for grounding individual jacks
1.5	Shall be RoHS Compliant
1.6	Shall have minimum 2-Year Extended Product Warranty and System Warranty
1.7	Shall be having a 6 port module construction for better cable dressing at the rear
1.8	Shall have Comprehensive port numbering on front
1.9	Shall be suitable for loading unshielded & shielded jacks for different category systems (CAT 6 & CAT 6A)

II. CATEGORY 6 INFORMATION OUTLET (IO)

S.No	Minimum Specifications / Functionalities / Capabilities
	PCB based Information Outlet (I/O) RJ45, TIA-568C Category-6, Termination of Category-6 UTP Cable, UL listed
1	Minimum Specifications
1.1	Shall conform to Category-6 as per the EIA/TIA-568C.2
1.2	Shall support network line speeds up to 1 Gbps
1.3	Shall have RJ-45 type connector with strain relief for securing IDC contacts from external

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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	forces. Shall have a feature to maintain the bend radius of the cable while entering the jack.
1.4	Shall have minimum durability of 750 mating cycles and 200 termination cycles
1.5	Shall Snap into standard faceplates, surface-mount boxes, consolidation point boxes, and Modular Panels.
1.6	Shall be mountable either at 90 degrees (straight) or 45 degrees (angled) in any faceplate.
1.7	Shall be certified by independent labs like ETL/GHMT for compliance to EIA/TIA-568C.2, (Report required).
1.8	Shall be RoHS Compliant.
1.9	Shall have minimum 25-Year Extended Product Warranty and system warranty

III. Face plate for information outlet (Single / Dual)

SR. No	Minimum Specifications / Functionalities / Capabilities
	Faceplate Single/ Dual/ Quad Port (Work Area End)
1	Minimum Specifications
1.1	Shall be Single/ Dual/ Quad Port (RJ45) square plate, dimension as per commercially available modular office furniture.
1.2	Shall have spring shuttered front access for preventing ingress of dust
1.3	Shall be supplied with Gang Box of the same size by System Integrator or OEM
1.4	Shall have Write on labels in transparent plastic window along with the plate
1.5	Shall have Screw hole covers along with the plate
1.6	Shall be able to support variety of jacks – UTP and STP Information outlets

IV. Category 6 patch cord (3 feet / 7 feet)

S. No	Minimum Specifications / Functionalities / Capabilities
	Cat 6 UTP LSZH Patch Cable (Patch cord) , TIA-568C Category-6, UL-listed
1	Minimum Specifications
1.1	Length shall be available in 1/2/3/5 meters or equivalent length in feet as per requirement considered in schedule of quantity
1.2	All patch cords shall conform to Category 6 & conductor shall be stranded for better flexibility

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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1.3	Shall support network line speeds up to 1 Gbps
1.4	Shall have RJ-45 jacks with transparent plugs at both the ends
1.5	All patch cords shall be factory crimped and packed
1.6	Shall be RoHS Compliant
1.7	Shall have LSZH jacket for safety measures
1.8	Shall have a transparent / clear boot
1.9	Shall support applications such as 155 Mbps ATM, token ring & VOIP.
1.10	Shall have minimum 25-Year Extended Product Warranty and system warranty
1.11	Colors- Blue, Grey, Yellow, Red & Orange

V. 19” Networking enclosures (22U to 42U usable heights)

- (i) Construction shall be high strength robust aluminium extruded frame structure with ventilation slots on the sides and top & bottom covers with provision to mount 4 fans on top cover (The Vertical Profiles which forms the frame of the racks are extruded Aluminium type).
- (ii) The Other parts / components except the Vertical Profiles are made of CRCA Steel.
- (iii) CRCA steel used is “IS 513 Gr D” standard.
- (iv) The Thickness of the CRCA sheets used for Doors is 1.2mm and for Side Panels is 1mm.
- (v) Fully adjustable 19” equipment mounting angles.
- (vi) The cabinet shall be made of high impact CRCA steel as per IS 513 Gr D standard and design confirming to DIN 41494 or EIA 310D standards.
- (vii) Top/ Bottom Covers and Side panels shall be of sheet steel and powder coated.
- (viii) Vertical 19” metric panel mounts and door trims shall be of sheet steel and powder coated.
- (ix) The top and bottom covers shall be provided with number of 50mm and 75mm round cable knockouts for cable entry and cable knockouts shall be edge protected with rubber grommets.
- (x) Perforation - for full / split perforated doors the style should be “Honeycomb” type of perforation for maximum air circulation and stiffness .The perforation area should be 70% of the total door area.
- (xi) Cabinet can be capable of dismantling and reassemble at the site.
- (xii) Locks Options – options shall be available such as slam lock - common key or unique key, Swing handle lock, Digital Keypad operated locks, Biometric locks.
- (xiii) Side Panels – must contain slam latches for locking purpose and option of providing slam locks, if required.
- (xiv) Two pairs of 19” Equipment mounting angles with mounting holes conforming to IEC 2973.
- (xv) Front Glass door made of toughened glass, tinted with easily detachable hinges.
- (xvi) Two Pair of slotted vertical cable channel shall be provided at front and back for managing cables.
- (xvii) Lockable industrial grade castors with foot brakes.
- (xviii) Rack shall be supplied with 4 x 90 CFM fans at top, or optionally 250cfm.

Correction – Nil,

Insertion – Nil,

Deletion – Nil

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- (xix) Rack shall be supplied with equipment mounting hardware in pack of 100s such as mounting nuts and screws either 12-24 or M6 type as applicable.
- (xx) Minimum 2 nos. of 8 x 5/15 Amps power supply sockets, 2 nos. of vertical cable managers and 2 no. of 19" 1U size horizontal cable managers.
- (xxi) Finish – cabinet shall be black or grey epoxy powder-coated of durable quality. The Powder coating of the racks is as per Nano Technology process with “Zirconium Coating”.
- (xxii) Load carrying capacity – between 500 – 750 kg.
- (xxiii) Product must be UL listed and certified for use in Information Technology or Communication Equipment.
- (xxiv) Manufacturer must be at ISO standard plants/facility.
- (xxv) Environmental safety – the rack must be RoHS compliant.
- (xxvi) EIA standard pattern design with 12-24 tapped holes (EIA-310-E compliant) or EIA standard pattern design with 3/8" (9.5mm) square punches for Cage Nuts for mounting.
- (xxvii) Dimensions – at least 42U usable height, 800mmW x 1000mmD or 1000mmW x 1000mmD
- (xxviii) Powder Coating: –
 - Powder Coating min 80 Microns with scratch resistance properties.
 - Rack to be powder coated with Nano ceramic pre-treatment process using a zirconium coat.
 - The Powder coating process should be ROHS compliant.
 - Powder coating thickness shall be 80 to 100 microns.
- (xxix) The Metal Enclosures/Racks must have unit prices for its individual knocked down items such as - 42U x 800mmW x 1000mmD main frame, glass front door, perforated/vented steel rear door, vented side panels (2), 4 x 90cfm fans tray and fans, 8x5A/15A power strip, 1U Cable Manager, Sliding Shelf, Rotating Shelf, Cantilever Shelf, Heavy Duty Stationery Shelf, Castors, Vertical manager/runner, hardware and any other such accessory. It must be possible to configure the enclosure as per specific needs for a customized installation for every rack.

VI. 19" Networking enclosures (15U Usable heights)

- (i) Floor Mount single section 2 fan provision 15U 600W*600D
- (ii) Should have Minimum 4 Nos. 230v AC Fans 90 CFM
- (iii) Should have Minimum 2 Nos. A/C Box 6 Socket 5/15 amp metal
- (iv) Should have Minimum 2 Nos. Cable Manager Metal (1U)
- (v) Should have Minimum 2 Nos. 19" Cantilever tray -1U

VII. Active components - Networking switch specifications description & design

- (i) It is a high-performance networking design keeping in mind real time applications and reliability.
- (ii) Key considerations for network are - gigabit connectivity to each user from the server room to various users/departments/devices in a topology consisting of a central switch followed by the distribution and edge/access switches.
- (iii) The network shall have a mix of components for supporting PoE+ as well as non-PoE devices.
- (iv) A robust fiber optics-based backbone **is being** provided. It shall be based on **ring topology (Primary and secondary i.e. 2 sources)** using single mode fiber optics cable.

The vendor shall ensure that the networking switches shall be populated with the necessary transceivers for achieving this design objective.

- (v) Several applications are proposed to run on this network – IP-based voice communications supporting voice-data-video, as required.
- (vi) All Switches and Wireless Access Points be from same OEM.
- (vii) All Wireless Access Points shall be controlled by a Wireless LAN Controllers of suitable capacity.
- (viii) The routing shall be done at Layer 3 switch which shall be in High Availability mode.
- (ix) All Switches, Wireless Access Points and Existing Wireless LAN Controllers should have capability to manage, configure and troubleshoot from admin user console.
- (x) All SFP and SFP+ should be from same OEM as of switches.
- (xi) The quantity of switches shall be **carried** out as per Network Access points and network Cameras.
- (xii) The Optical fibre connectivity shall be provided at the Layer 3.
- (xiii) The network design shall be 10-1-1 (10 GB at the Layer 3 and 1 GB uplink through CAT 6 at Layer 2 and end user connectivity at 1 GB through CAT 6).
- (xiv) All switches in one physical rack shall be stacked with dedicated stack cable.
- (xv) The cameras and Network **VLAN shall be separate.**

3. Layer 2 Non-PoE switch

Purpose

The purpose of this specification is to establish the LAN connectivity for NoN-PoE edge devices. Layer 2 Access Switch will be connected with both the core switches for link redundancy. Layer 2 Access Switch having all the industry standard features, described below in this specification:

SN.	Specification	Compliance
1	Port Density: Enterprise grade Switch should have minimum 24x10/100/1000 Base-T ports and 4x1G SFP ports. Populated with required module from day 1.	
2	Switch architecture &Performance: The Switch should support a minimum of 56Gbps of Switching Fabric Capacity. The Switch should support a minimum of 41Mpps of forwarding capacity and 16K MAC address or better. Should have IPv6 Ready Logo from Day 1.	
3	Layer 2 and Layer 3 Feature: Should support 2K active Vlan, Port base, MAC base, Protocol base and Voice VLAN, Loop Detection and Loop protection, Control Plane Prioritization (CPP), RSTP, MSTP, Q-in-Q , <50ms ring recovery, IEEE 802.3ac VLAN tagging, IEEE 802.1v, Static routing and RIPv1&v2 from Day 1.	
4	Multicast Support: MLD snooping and Querier IGMP snooping v1, v2 and v3	
5	Quality of Service: IEE 802.1p compliance, DSCP Prioritization, Wire speed traffic classification with low latency essential for VOIP and real time	

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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	streaming media applications. Policy-based QoS based classifying traffic based on MAC, Port, VLAN, Protocol, L3 Parameters.	
6	Security Feature: ACLs, DHCP snooping, STP Root Guard, IP source guard and Dynamic ARP Inspection (DAI), RADIUS and TACACS+ accounting and authentication, MAC address filtering and MAC address lock-down, Tri authentication: MAC-based, web-based and IEEE 802.1x.	
7	Management Feature: SNMPv6, Telnetv6 and SSHv6, SNMPv1, v2 and v3, RMON, Sflow/NetFlow or equivalent, Openflow for SDN, 1xRJ45 Console port, USB or equivalent memory card slot for backup.	
8	Other Essential Feature: Should support UDLD or equivalent feature to prevent loops on detecting unidirectional links, Connectivity Fault Management, Monitoring Temperature, Supply voltage, Average transmit power, Average receive power and Laser bias current of the FO module, should have feature if any intrusion is detected on fiber link the particular port should be shutdown automatically.	
9	Operating Temperature: 0°C to 50°C	
10	Certification: EN55022, EN55024, UL60950-1, FCC class A, VCCI class A, cUL and RoHS compliant	
11	All the switches should be offered with min 5 years replacement warranty with proper back-up on respective-OEM letter Head. All the switches and FO Modules should be from the same OEM.	
12	OEM should be in Gartner's Magic quadrant in the latest Gartner report for Wired and wireless LAN. (Report should be attached along with the Bid)	

Additional Conditions for IP BASED EPABX SYSTEM

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

1. The design and drawing, SLD/Block diagram for EPABX system shall be approved by Engineer-in-charge before execution of the work at site.
2. The technical specification of material of EPABX system mentioned in BOQ shall be strictly followed during procurement of material.
3. The lowest tenderer is to submit undertaking from the OEM as below.
 - a. Authorization certificate.
 - b. The OEM shall have unconditional support technically throughout the execution of contract as well as for maintenance/comprehensive maintenance contract for the useful life of the system.
 - c. OEM shall provide all spare parts required for the healthy functioning of the equipment for at least seven years from the date of supply of the equipments.

Additional Technical specifications for UPS SYSTEM

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

Uninterrupted Power Supply Unit is proposed to provide continuous, no break power to life safety circuits as per NBC 2016 and Local ByLaws, other sensitive equipments. At least 30 Minutes backup with the help of maintenance free batteries shall be Uninterrupted Power Supply Unit is proposed to provide continuous, no break power to life safety circuits as per NBC 2016 and Local ByLaws, other sensitive equipments& other essential loads.

TECHNICAL SPECIFICATION FOR 6KVA UPS SYSTEM		
S.No	Parameter	Specification
1	Scope	Supply, Installation and commissioning of 1 Number 6 KVA UPS System in N+1 modular architecture including SMF Battery and accessories.
2.	Topology	Online, double-conversion topology using IGBT rectifier, IGBT inverter, static bypass switch and maintenance bypass switch, built-in Isolation Transformer inside UPS and TVSS.
INPUT		
4.	Voltage and range	380 /400 / 415 V 3 Phase, 4 wire plus ground, range: 320V-480 V AC range without Battery discharge.
5.	Frequency	50 Hz $\pm$ 10%
6.	Power Factor	0.99
7.	Input THDI	$\leq$ 5% at 50% load (At full load as per testing)
8.	Rectifier Type	Advanced type IGBT based DSP controlled (3 level topology for both rectifier and inverter with PWM control.
OUTPUT		
9.	Steady Voltage	400V / 415 V $\pm$ 1% from 0 to 100% load. 3 Ph. + Neutral
10.	Transient Voltage	< +/- 5% from nominal voltage for load step from 10% to 100%.
11.	Frequency	50 Hz $\pm$ 0.1%
12.	Power Factor	Unity.
13.	Waveform	Pure Sinusoidal
14.	Efficiency	Up to 96% at full rated load

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

15.	Inverter Overload	110% for 60 min., 120% for 10 Min, 150% for 1 Min
16.	Crest Factor	3:01
17.	THDv	With 100% linear load < 1%
18.	Isolation Transformer	Galvanic Isolation Transformer should be provided built-in in the same cubicle of UPS to isolate the Loads from the Input Neutral threat.
19.	Static Switch	Inbuilt bi-directional SCR based static switch with each UPS
20.	Manual bypass Switch	Should be provided with Make before break type.
21.	Self capacity test	UPS should have the provision to test run in its full capacity without external load.
22.	Emergency Power off (EPO)	A push button should be provided for immediate total shutdown of power of UPS in an emergency Situation.
23.	Switch gears	UPS Input, Output, Static bypass, Maintenance bypass to be provided. Battery switch with undervoltage release coil to be provided for protection against battery low and battery deep discharge.
24.	Transient Voltage surge Suppressor (TVSS)	Each UPS should have TVSS of 100KA, 3 phase rating having protection level < 1KV, response time < 0.5 nano sec, All Mode Protection (L-L / L-G / L-N / N-G), response time < 0.5 nano sec., EMI/ RFI attenuation: 40 dB Certification - Listed with UL1449 .TVSS and UPS should be from same OEM
BATTERY		
25.	Type	SMF (VRL type, SMF in ABS Container)
26.	Unit Capacity	2/12Volt
27.	Backup time on full load	30 Minutes load with each UPS System.
28.	Battery details	As per calculation
ENVIRONMENTAL		

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

31.	Low Audible Noise	< 65 dB @ 1 meter
32.	Operating Temperature	0 to +40 0C
33.	Storage Temperature	0 to 70 0C
34.	Altitude	1500 mtrs above MSL without derating
35.	Relative Humidity	Upto 95% RH (Non condensing
36.	Cooling	Ventilation- Air cooling with Integral Fans

LIST OF APPROVED MAKES OF MATERIALS (Electrical & Mechanical)

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

1- IEI & Fans including Power Wiring, Telephone wiring and LAN wiring		
Sl No.	Description of Items	Makes
1	Wires (PVC insulated copper conductor cable FRLS-ISI marked)/Telephone cables / Submersable cables / Co-axial / TV cables	Havells, Finolex, KEI, Gloster, RR Kabel, Polycab, Sudhkar, Konstruct, AKG, GreatWhite, Goldmedal, Paramount
2	PVC Conduits (ISI marked) (color of conduit : Ivory / Grey)	Precision, AKG, BEC, GM, Atul, Sudhkar, Konstruct, Goldmedal
3	Steel Conduit (ISI marked)	BEC, AKG, RMCON, Steel Krafts, Precision, Atul
4	MCB DBs/ Industrial Socket outlets	Legrand, Schneider, LK(Exora), ABB, SIEMENS, C&S, GreatWhite, Goldmedal
5	MCBs / RCBO / Isolators	Legrand, Schneider Electric, LK, ABB, SIEMENS, C&S-EPITONE, GreatWhite, Goldmedal
6	MCCBs	Legrand (DPX3), LK (D-sine), Schneider Electric (Compact NSX/ EasyPact CVS), ABB(T-Max), SIEMENS (3VA), GreatWhite
7	LAN cable (Structural Cabling)	Panduit, Belden, Schneider, Systimax (COMMSCOPE), Molex, Legrand, DERWISER
8	Fibre Management System	Panduit, Belden, Schneider, Systimax (COMMSCOPE), Corning, Legrand
9	Modular Switches/Sockets/TV Socket / Telephone sockets / Data Sockets / Electronic Regulators / AC Starter Switch etc.	Legrand(Myrius), Panasonic (Vision), Crabtree (Athena), Wipro (North west-stylus+, C&S (Elusio), Schneider (Unica Pure), GreatWhite, Goldmedal
10	Celing Rose	Antex, Leader, Emperor, Anchor
11	PVC batten / Angle Holders	Aristo, Antex, Prakash, Kinjal, Anchor
12	Exhaust fans	
A)	250 mm (plastic Body) (Medium duty)	Havells, Crompton, Orient, Bajaj, Almonard, Atomberg, USHA, Halonix, Goldmedal
B)	300mm / 230mm metallic body (Heavy duty)	Crompton, Orient, Bajaj, Almonard, Atomberg, USHA, Halonix, Goldmedal
13	Fans	
A)	1200 mm sweep ceiling fans with BLDC motor	Orient, Havells, Crompton, Atomberg, USHA, Halonix, Goldmedal
B)	400 mm Wall mounted fan	Khaitan, Crompton, Orient, USHA, Halonix, Goldmedal
14	LED Luminaries including street light fittings.	Phillips, Wipro, Havells, Jaquar, Goldwyn, Panasonic, K-Lite, LT, Trilux, Crompton, Regent, Surya, Halonix, GreatWhite, Homdec, BAJAJ, Goldmedal, Instapower
15	Facade Lighting Luminaries	Phillips, Wipro, Havells, Jaquar, Panasonic, Leksa, Goldwyn, Surya, Halonix, Goldmedal, Instapower
16	Stage Lighting/Furnishing	Leksa, Canara Lighting, Desisti lighting, Martin, Effectron, Surya, Halonix, Instapower
17	Network switch	Allied Telies, Cisco, Netgear, HP
18	Rack	Netrack, WQ, Panduit, Rittal, Emerson, Schneider (APC), Valrack
19	Decorative Street light pole	Phillips, K-Lite, Bajaj, Twinkle, Utkarsh, Jaquar, Vakrangee, Surya, Halonix, Consoul (HIRA Poles),
Correction – Nil, Insertion – Nil, Deletion – Nil		
AE(P)(C) AE(P)(E) EE(C)		

		Homdec
20	GI Octagonal Street light pole & High mast	K-Lite, Bajaj, Twinkle, Utkarsh, Jaquar, Velmonte, Vakrangee, Surya, Halonix, Consoul (HIRA Poles), Homdec
21	1.1KV grade aluminium conductor, XLPE insulated armoured UG Cables	Havells, KEI, Gloster, Finolex, Polycab, RR Kabel, Paramount
22	Rising mains, Bus Trunking (Sandwich / Air insulated) & Tap-Off boxes	Schneider, Legrand, LK, ABB, C&S, Siemens Balaji Electro Controls Pvt. Ltd.
23	LT Panel (CPRI approved)	SKEIPL /SK Engineering Works Pvt Ltd./ SPC Electrotech/Tricolite/United Engineers/ Technocrat/RR Ispat/BSPL/Utkal Electrical Industries, Balaji Electro Controls Pvt. Ltd.
24	Glands / Lugs	Dowells, Comet, Jaison
25	GI pipes	TATA, Jindal, Surya, SAIL
26	High Volume low speed fans	Kelley, Kale Brayan, EcoAir, Macroair, Big Ass
27	Weather proof boxes	Obo Betterman, Hensel, Legrand, C & S, Hager, Trinity Touch
28	DWC Pipes	TeleRex, Dutron, VekayPlast, Duroline, Konstruct
29	Day light / Occupancy Sensor	Legrand, Schneider, Johnson Control, ABB, Wipro, Bajaj, Philips
30	Water Purifier	Eureka Forbes, Kent, Ion Exchange, LG
31	Electrical Geyser	Racold, A.O. Smith, Crompton, Bajaj, V-Guard
32	Emergency lighting system, components and Fixtures	Hochiki, Cooper, Tecknoware, ASM, TM
33	Lighting Control System	ABB, Schneider, Siemens, Philips
34	ACSR Conductor/AB Cable	SBEE Cables/Rhino/Paramount

2- LIFTS

OEM as per eligibility criteria mentioned vide OM no. DG/SE(E)TAS/PPP-MII Order/22 dt:28.09.2020.

- The Lift Manufacturer shall comply with BIS standards, duly certified by Manufacturer itself.
- The Manufacturer shall be compliant to the Public Procurement (Preference to Make in India) Order 2017 (as amended from time to time) issued by the Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry.
- The experience of successful completion of similar works shall be as per CPWD Works Manual/SoP.
- The manufacturer shall furnish an undertaking regarding availability of spares for the entire life of the lift i.e., 15 to 20 years.
- The complete Lift installation including its components, safety devices, various types of controls etc., testing, Inspection, operation maintenance shall conform to relevant Codes/Standards/Code practices/ to relevant Guidelines/ Safety Rules/Inspection Manual(s)/Rules issued by Bureau of Indian Standards, as amended upto the last date of receipt of tenders.
- Quality Standards shall conform to IS/ISO-9001:2015.
- The Down Time of installed lifts, being maintained by the manufacturer, shall not be more than 8 hours (average) in case of minor faults and 7 days (average) in case of major faults in last one financial year.

3. Substation Equipment & Cabling

SI No.	Description of Items	Makes
Correction – Nil, Insertion – Nil, Deletion – Nil	AE(P)(C)	AE(P)(E) EE(C)

1	Transformer	Siemens, ABB, Voltamp Transformer Ltd (Vadodara), Kirloskar, Essennar, Schneider, Crompton Greaves, OEU, Alfa, Power Star
2	HT VCB Panel	ABB, Siemens, LK, Schneider, Kirloskar.(Authorised Channel partner of OEM is allowed)
3	AVR/RTCC Panel	OEM Recommended fabricators
4	MV/LT Panels (CPRI approved)	SKEIPL /SK Engineering WorksPvt Ltd./ SPC Electrotech/Tricolite/United Engineers/ Technocrat/RR Ispat/BSPL/ Utkal Electrical Industries, Balaji Electro Controls Pvt. Ltd.
5	Air Circuit Breakers	L&T, Siemens, Schneider, Legrand.
6	Moulded Case Circuit Breakers	Legrand (DPX3), LK (D-sine), Schneider Electric (Compact NSX/ EasyPact CVS), ABB(T-Max), SIEMENS (3VA)
7	MCBS	Legrand, Schneider Electric, LK (Exora), ABB, SIEMENS, C&S-EPITONE, GreatWhite
8	Selector Switches	Kaycee BCH, LKSalzer, Siemens, HPL.
9	Contactors	Siemens, C&S, LK, Schneider, ABB.
10	CT/PT	AE, L&T, Gilbert, Kappa, Schneider.
11	Digital Panel Meters including Multi Function meter	Conzerv, LK, AE, MECO, Rishab, Prok Devices, HPL Electric
12	Glands/Lugs	Dowells, Comet, Jainson, Brace
13	Indication Lamps (LED type), Push Buttons.	Siemens, BCH, LK, Telemecanique, Vaishnav, Emco, Kaypee.
14	Connectors/Terminal Blocks	Elmex, Connectwell, Essen.
15	AB Switch	ABI, Jaysree, HemrajUdyog, Power grid Switchgears.
16	GI pipes	Tata, Jindal , SAIL, Surya.
17	M.V. Power Capacitors	Schneider, L&T, Siemens, Neptune Model LLM, Epcos, Eaton.
18	Change over Switches	ABB,LK, Schneider, Socomec.
19	11KV Lightning Arrestor	OBLUM, IGEC, SEW, ELPRO.
20	APFC Relay	LK, Beluk, Siemens, Epcos, ABB, Schneider, Neptune.
21	Angle iron/Channel iron	SAIL, TATA, Jindel (Hissar), Zenith.
22	11KV AB Switch	SAHAL, PACTIL, GEC, SEW.
23	11KV Horn Gap Arrestor	SAHAL, PACTIL, GEC, SEW.
24	11KV Pin & Disc Insulators	BHEL, Bharat Industries.
25	HT Jointing kit and termination joint	3M, Tropolin, Densons, Raychem, CCI-Xicon, Mahindra.
26	Power Relays	SEGC, Crompton, Siemens, ABB, Schneider, LK
27	Electric Insulation mat with ISI mark	Dozz, Padmini, Raychem, Jyothi Rubber Udyog.

4- Wet Riser & Sprinkler System.

Sl No.	Description of Items	Makes
Correction – Nil, Insertion – Nil, Deletion – Nil		
	AE(P)(C)	AE(P)(E) EE(C)

1	GI / MS 'C' class pipes duly ISI marked	Jindal,TATA,SAIL, Surya
2	Single / Double headed GM Landing Valve	NewAge (Mumbai), Safex, Padmini, Ceasefire, GeTech, Life guard, Armorfire.
3	Sluice Valve (ISI marked only)	Zoloto, Leader, Kirloskar, Deepak, LK Valve Limited, Sant
4	CI NRV / Sluice / Butterfly valves (ISI marked only)	Zoloto, Leader, Kirloskar, Deepak, LK Valve Limited, KSB, Sant
5	GM gate valves (ISI marked only)	Zoloto, Leader, Kirloskar, Deepak, LK Valve Limited, Sant
6	Branch pipe	Safex, Padmini, GeTech, Agni, Newage, Ceasefire, Armorfire.
7	First Aid Hose Reel/Fire Hose/Gunmetal Branch pipe / Fireman Axe	Safex, Padmini, GeTech, Agni, Newage, Ceasefire, Life Guard, Kesaraplast,Armorfire.
8	Hydrant Valve	Newage, Safex, Ceasefire, Kalpana, LK Valves Limited, Life guard, Armorfire.
9	Pressure Gauge	H Guru, Fiebig, LK
10	Pipe anti corrosive protection (Pipe coating material)	IWL, Taxa, Mac-Polycoat
11	Main Fire / Terrace/ Sprinkler / Jockey / Priming Pump Sets	Grundfos, Kirloskar, Mather & Platt India Limited, KSB, Armstrong
12	Air release valve	Giacomini, AIP Valve, Jaison Industries, Zloto, RBM
13	Motors	Siemens, Kirloskar, ABB, ITT
14	Starter	Crompton, LK, Siemens, Eaton, BCH, ABB
15	Batteries	Panasonic, Exide, Amaron, HBL Power, Rocket
16	Fire Extinguishers	Safex, Minimax, Padmini, Ceasefire, Agni, Flameklog, Kanex, Supremex
17	Flow Meters	H.Guru, Pricol, MECO, Victaulic
18	2-Way/4-Way FBC (Fire Brigade Connection)	Padmini, GeTech, Newage, Agni, Ceasefire, Armorfire
19	Sprinklers, UL Listed	Tyco, HD, Newage, Safex

5 - Fire Detection and Alarm System

SI No.	Description of Items	Makes
1	Loop Control Panel / Repeater panel	Bosch, Siemens, Notifier, Edwards, Supremex, ASES,RAVEL
2	Multi Sensor Detectors	Bosch, Siemens, Notifier, Edwards, ASES,RAVEL
3	Addressable Call Point	Bosch, Siemens, Notifier, Edwards, ASES,RAVEL
4	Response Indicators	Bosch, Siemens, Notifier, Edwards, ASES,RAVEL
5	Horn cum Strobe	Bosch, Siemens, Notifier, Edwards, ASES,RAVEL
6	Fire Control Modules	Bosch, Siemens, Notifier, Edwards, Supremex, ASES, RAVEL
7	SMF Battery	Panasonic, Exide, Amaron, HBL Power, Rocket
8	PA System	As per OEM of Fire Control Module, ASES
9	Aspirating Smoke Detection System	Bosch, Siemens, Honeywell, Edwards,ASES,RAVEL

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Governing Specifications:

- i. Heat Detectors shall conform to IS-2175-1988 or BS-5445 (EN 54) Part 5 1977(VdS/LPCB approved) or NFPA72 (UL/ULC/FM approved) amended upto date.
- ii. Smoke Detectors shall conform to IS-11360-1985 or BS 5446 Part 1-1977 & Part VII-1985 (VdS/LPCB approved) or NFPA72 (UL/ULC/FM approved) amended upto date.
- iii. For other detectors/devices relevant IS or BS (EN 54) (VdS/LPCB approved) or NFPA 72 (UL/ULC/FM approved) amended upto date.
- iv. The FACP shall have proper listing and / or approval from the following recognized agencies:

1) National Fire Protection Association (NFPA) -USA. This will cover the following approval:

(1) UL (Under writers Laboratories Inc.),(11) ULC (Under writers Laboratories Canada) () FM (Factory Mutual) (iv) CSFM (California State Fire Marshal) (II) EN (European) This will cover the following approval: (LPCB (Loss Prevention Council Board) (i) VDS (VertauenDurchSicherheit)
(ii) BRE FACP shall be NFPA/EN listed independently and as per relevant IS Code as a Fire Alarm Control Panel.

6- DG Set.

SI No.	Description of Items	Makes
1.	Engine	Cummins/Caterpillar/Kirloskar/Perkins/ Greaves
2	Alternator	Stamford/Leroy Somer/ CG/ Mitsubishi/Caterpillar/Kirloskar.
3	PT CTs	AE / BCH/ L&T/ ABB/ Siemens/ GE/ MECO/ Rishab
4	Electrical panel boards (AMF Panel)	IS: 8623 compliant panel boards fabricated from authorised channel partners of IEC: 61439-1 & 2 certified panel board manufacturers/OEM Recommended fabricators are allowed.
5	HRCfuses	LK/GE/Siemens/Havells
6	IndicatingLamps,Selector Switches	Kaycee/BCH/LKSalzer/Siemens/C&S
7	Fasteners	Hilti/Fischer/Bosch
8	PanelboardmountingSwitches	LK/Siemens/Schneider/ABB
9	Fiberglass insulation	UP Twiga/ Kimmco/ Owing Corning
10	G.I/Steel pipes	Jindal/Sail/Tata
11	Power Contactor	LK/ABB/Siemens/Schneider/Legrand
If acceptable make for an item is not mentioned under a sub head, the acceptable makes mentioned for the same in other sub heads shall be used.		

7- UPS System

SI No.	Description of Items	Makes
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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

1	UPS	System	Emerson, Numeric, Schneider, Delta, ABB, Socomec.
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8 - VRV/VRF Air-conditioning System

SI No.	Description of Items	Makes
1	VRV/VRF Indoor and Outdoor AC units	O General, Mitsubishi, Carrier, Hitachi, Daikin, Blue Star, Voltas, LG
2	Refrigerent pipes	Godraj, Mehta, Mandev, Rajco, Nippon, Totaline, As per manufacturer's standards.
3	UPVC Drain Pipes	Sudhakar, Aashirwad, Astral, Supreme, Atul
4	PVC Insulated copper conductor cable (For control and communications)	Havells, Anchor, Finolex, KEI, LK, Asmon, RR Kabel, Finecab.
5	Centre Remote Controller	Same make as that of Central/VRV/VRF A.C. Unit.
6	G.I. Pipes	Jindal, TATA, Sail, Surya.
7	Cable Glands	Dowells, Jainsons, Braco, Comet.
8	Y-Joints (Refnet):	As per manufacturer's Standard.

9- Split Type AC

SI No.	Description of Items	Makes
1	Split Indoor and Outdoor AC units	O General, Mitsubishi, Carrier, Hitachi, Daikin, Blue Star, Voltas.
2	Refrigerent pipes	Godraj, Mehta, Mandev, Rajco, Nippon, Totaline, As per manufacturer's standards.
3	UPVC Drain Pipes	Sudhakar, Aashirwad, Astral, Supreme, Atul.
4	PVC Insulated copper conductor control cable (For control and communications)	Havells, Finolex, KEI, Gloster, RR Kabel, Polycab.
5	Centre Remote Controller	Same make as that of Split A.C. Unit.
6	Voltage Stabilizer	Microtek , V-Guard, Elpower, Sen&Pandit

10- Solar Power Generation System.

SI No.	Description of Items	Makes
1	SPV Modules	Panasonic/Renewsys/Waree/ TATA/ Goldi Solar/NovasysGreenenergy/Ray Zon/Vikram/CEL/Adani Solar
2	Power Conditioning Unit(PCU)	Delta/Luminous/Havells/Power one/Sun grow
3	Data logger/System performance	Kaco/SMA(America)/ ABB/Energy Recommence/Schlumberger/Energy Tracking LLc

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

4	Grid Tied Inverter	Delta/Luminous/Havells/Power one/Sun grow
5	Junction Box	Hensel/Spelsberg/ABB/Cooper busman/Legrand/Trinity Touch
6	LT Jointing Kit	Rachem/Mahindra/M-Seal/3M
7	Cable lugs / Glands	Dowells/ Gripwel / Johnsons / Comet /Braco
8	Bi-Metallic Cable Lugs	Dowells/Comet/Jainson
9	ACDB Panel	Havells/Geesys/Vortex Energy
10	Energy Meter	LK/HPL/Secure/AE/ Siemens/Schneider
11	Surge Protection	OBO Betterman/ ABB/Legrand
12	PV module interconnecting connector	Tyco/Cooper busman/MC
13	DC cables and wires	Siechem/ LAPP/Havells/KEI
14	Electronic Digital Meters (Networking type)	Conzerv/ LK /Secure/AE/Meco/HPL Electric
15	Timer	Siemens/LK, Schneider Electric-TE/GE/Legrand

11- CCTV System

SI No.	Description of Items	Makes
1	Dome, Bullet Cameras and PTZ CCTV camera (UL Listed)	Honeywell, Bosch, Pelco, Sony, Tyco, Siemens, Axis, Alcon.
2	Network Video Recorder	Honeywell, Bosch, Pelco, Sony, Tyco, Siemens, Axis, Alcon.
3	Display Monitor	Samsung, Sony, LG, Dell, HP.
4	Network Switches	Cisco, Allied telies, HP, Netgear.
5	LAN cable (Structured cabling) / Patch cord	Panduit, Belden, Schneider, Systimax (Commscope), Molex, Legrand., Derwiser
6	Network/ Server Racks	Netrack, WQ, Paduit, Rittal, Emerson, Schneider (APC), Valrack
7	GI pipes	Tata, Jindal, Sail, Surya.
8	OFC	Finolex, Belden, Delton, Panduit, Avaya, Legrand, HFCL, Havells, Derwiser
9	Patch Panels	Molex, Panduit, L-Com, Systimax (Commscope), Legrand, Schneider.

12- Domestic Water Pumps

SI No.	Description of Items	Makes
1	Pump Sets	Grundfoss, Kirloskar, Mather & Platt India Limited, KSB, Wilo.
2	GI / MS 'C' class pipes duly ISI marked	Jindal , TATA, Surya, SAIL
3	Sluice Valve (ISI marked only)	Zoloto, Leader, Kirloskar, Deepak, LK Valve Limited, SANT
4	CI NRV / Sluice / Butterfly valves (ISI marked only)	Zoloto, Leader, Kirloskar, Deepak, LK Valve Limited, KSB, SANT

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

5	GM gate valves (ISI marked only)	Zoloto, Leader, Kirloskar, Deepak, LK Valve Limited, SANT
6	Pressure Gauge	H Guru, Fiebig. LK
7	LT Switchgear	LK, Schneider, Siemens, ABB, Hager, Legrand, GreatWhite
8	Starter	Crompton, LK, Siemens, Eaton, BCH, ABB
9	Ammeter / Voltmeter	IMP, AE, MECO, LK, HPL Electric

13- IP Based EPABX System

SI No.	Description of Items	Makes
1	IP Based EPABX System	Matrix, Panasonic, NEC, CISCO, Alcatel, Ericsson, Siemens, Avaya
2	Analog/ Digital IP based phones	Siemens, Avaya, Cisco, Polycom, Alcatel, Ericsson, Panasonic
3	Telephone Jack	Belden, Systimax, Panduit, Siemon
4	Managed Network Switches	Cisco, Allied Tellies, HP, Netgear
5	CAT 6 A LAN cable (Strcutured Cabling)	Panduit, Belden, Schneider, Systamix (COMMScope), Molex, Legrand, Delton
6	Rack (Network/ Server)	Netrack, WQ, Panduit, Rittal, Emerson, Schenider (APC), Valrack

14- Facade Lighting :

SI No.	Description of Items	Makes
1	Facade Lighting Luminaries	Phillips, Wipro, Havells, Jaquar, Panasonic, Goldwyn, Leksa.
2	LED Decoder, Driver, DMX Amplifier, Splitter, Digital Lighting Console	Same make as luminaries of OEM.

15- Sewage Treatment Plant/ETP/UF/SOFTNER PLANT:

SI No.	Description of Items	Makes
1	Sewage Treatment Plant /ETP/UF/SOFTNER PLANT	Ion Exchange/ Sintex Welspun / Arvind Envisol/ Daiki Axis/Thermax/Tanishq-ions/Venza.
2	Pump Sets	Wilo/KSB/Grundfos/Kirloskar/CRI/CG
3	Air-Blowers	Everest/TMVT/Beta/Koy International/Swam Pneumatic/A1/Akash/Airvak
4	Butterfly/Gate Valves	Leader/Sant/Advance/Audco/Zoloto
5	Fine & Coarse bubble diffuser/MBBR Reactor/MBBR media/Tube Seltter/Dising system	As per OEM of STP.
6	Electrical control Panels (Out door type)	SKEIPL /SK Engineering WorksPvt Ltd./ SPC Electrotech/Tricolite/United Engineers/ Technocrat/RR Ispat/BSPL
7	Starter	Crompton, LK, Siemens, Eaton, BCH, ABB
8	Ammeter / Voltmeter	IMP, AE, MECO, LK, HPL Electric

S. No.	Material Description AV System	Makes
1	Wireless AV Gateway / Wireless	Barco / Kramer / Extron / AMX / WolfVision / Crestron, /JAD

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Presentation System	
2	HDMI Matrix Switcher	Kramer / Extron / AMX / Crestron / Gefen
3	Microphone Integration / Desktop Unit with Mute	Shure / Sennheiser / Bosch / Taiden / Beyerdynamic
4	Dual Microphone Control System	Shure / Sennheiser / Bosch / Taiden / Audio-Technica
5	Central Audio Control Unit / Conference Controller	Bosch (Dicentis) / Shure (Microflex) / Sennheiser / Taiden / Televic
6	Advanced Audio Feedback Suppression Processor	dbx / BSS Audio/ Klark Teknik / Sabine / Biamp
7	Video Control Unit with PTZ Camera Auto-Tracking	Kramer / Extron / AMX / Roland / Crestron
8	Mixing Amplifier	EV (Electro-Voice) / TOA / Bosch / Crown / Inter-M
9	HDMI Active Optical Cable	Kramer / Extron / Gefen / Club3D / Corning
10	Wall Mount Speake	EV (Electro-Voice) / TOA / JBL / Bosch / British Acoustics /Bose/, Martin Audio/L Acoustics/d&b/OSL
11	PTZ Camera /Conference Camera	Sony / Panasonic / Lumens / Marshall Electronics / Avipas
12	Video Mixing Unit	Roland / Datavideo / Blackmagic Design / Kramer / Extron
13	FOH Speakers	Bose, Martin Audio, Electro Voice, British Acoustics, L Acoustics, d&b, OSL
14	Sub Woofer	Bose, Martin Audio, Electro Voice, British Acoustics, L Acoustics, d&b,OSL
15	SPL Fill Loud seakers	Bose, Martin Audio, Electro Voice, British Acoustics, L Acoustics, d&b, OSL
16	Floor Monitor speakers	Bose, Martin Audio, Electro Voice, British Acoustics, L Acoustics, d&b, OSL
17	Networkable Power Amplifier	Bose, Powersoft, Lab Gruppen,British Acoustics, OSL
18	Digital Signal Processor	BSS Audio / Biamp (Tesira) / QSC (Q-SYS) / Extron / ClearOne Bose, Biamp, British Acoustics,OSL
19	Audio Mixer	Yamaha, Soundcraft,OSL,British Acoustics,QSC
20	Wireless Hand Held Microphone	Shure / Sennheiser / AKG / Audio-Technica / Beyerdynamic /Electro Voice/ JBL/OSL/ AKG
21	Wired Table Embedded Boundary Layer Microphone	Shure / Sennheiser / Crown / Audio-Technica / Beyerdynamic
22	Wireless Lapel microphone with receiver	Electro Voice, Sennheiser, Shure, OSL, AKG
23	Wired Cardiord hand held Microphone	Electro Voice, Sennheiser, Shure, OSL, AKG
24	Cardiord Instrument Microphone	Electro Voice, Sennheiser, Shure, OSL, AKG
25	Gooseneck Microphone	Electro Voice, Sennheiser, Shure, OSL, AKG
26	Smart Metalic Podium	Crestron / AMX / Kramer / Extron / Biamp /EAPL/GLOBUS/, Liberty/BRIOTOUCH
27	Wireless Presentation System	Crestron, Barco, Extron, Cramer, AMX,JAD
28	Microphone Cables	Beldon, Sommer, Klotz,JAD

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

29	Loud speaker cable	Beldon, Sommer, Klotz,JAD
30	Quad Core IP Control System	Aurora, Crestron, Extron,JAD
31	Streaming Transciever	Aurora, Crestron, Extron,JAD
32	Streaming Transciever wall plate	Aurora, Crestron, Extron,JAD
33	POE Switch	Cisco, Allied Tellies, HP, Aruba, Netgear.
34	Wireless Access Point	Cisco, Allied Tellies, HP, Aruba, Netgear.
35	DLP Laser Projector	Barco, Christie, Panasonic, Sony, Viewsonic,Optoma
36	Projector Screen	Liberty, Logic, Chief, Draper, Focus,Suvira
37	LAN cable	Panduit, Belden, Schneider, Systimax(Commscope), Molex, Beldon, Legrand, Extreme.
38	Rack	Netrack, WQ, Paduit, Rittal, Emerson, Schneider(APC), Valrack.
39	Professional display	VIEWSONIC,SAMSUNG,PANASONIC,SONY,LG
40	86" and more interactive/Professional display	VIEWSONIC, SAMSUNG, PANASONIC, SONY,LG, Trueview
41	65" display	VIEWSONIC,SAMSUNG,PANASONIC,SONY,LG

NOTE: Brands other than mentioned in above approve list can be approved by Chief Engineer based on proposal of Engineer-in-charge.

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Part-D

Schedule of quantities (Civil & Electrical)

<u>GENERAL ABSTRACT OF COST</u>
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Correction – Nil,		
Insertion – Nil,		
Deletion – Nil		

AE(P)(C)

AE(P)(E)

EE(C)

Name of Work :- Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur , Mayurbhanja district, Odisha.		
SL. NO.	SUB-HEADS	AMOUNT
1	EARTH WORK	70,40,379.00
2	CONCRETE WORK	40,48,051.00
3	REINFORCED CEMENT CONCRETE	9,53,99,190.00
4	MASONRY WORK	34,10,567.00
5	CLADDING WORK	20,83,298.00
6	WOOD & PVC WORK	67,60,205.00
7	STEEL WORK	35,00,626.00
8	FLOORING	1,02,86,556.00
9	ROOFING	11,96,628.00
10	FINISHING	1,66,07,889.00
11	ROAD WORK	55,24,553.00
12	SANITARY INSTALLATION	15,65,247.00
13	WATER SUPPLY	7,75,375.00
14	DRAINAGE	3,60,128.00
15	ALUMINIUM WORK	8,09,714.00
16	WATER PROOFING	25,39,332.00
17	RAIN WATER HARVESTING & TUBEWELLS	1,88,716.00
18	NEW TECHNOLOGIES AND MATERIALS	66,79,748.00
	Total =	16,87,76,202.00
	Modified Estimated cost=M.F= 0.973 on DSR 2023	16,42,19,245.00
	Add Cost Index over DSR'2023 @ 15.4% except NSR Item =	2,52,89,764.00
	Total =	18,95,09,009.00
19	NON SCHEDULE ITEMS	2,88,54,024.00
	Total (Civil)=	₹ 21,83,63,033.00
20	INTERNAL ELECTRICAL INSTALLATIONS	76,29,058.00
21	MCBs, DB	12,85,870.00
22	Rising Main	6,06,712.00
23	Fittings & Fans	17,28,817.00
24	Panels and Service Connection	52,45,585.00
25	EARTHING & LIGHTNING ARRESTER	9,43,182.00
26	SUBSTATION EQUIPMENTS	16,54,419.00
27	DG SET	8,85,383.00
28	IP BASED EPBAX SYSTEM	15,74,493.00
Correction – Nil, Insertion – Nil, Deletion – Nil		
AE(P)(C) AE(P)(E) EE(C)		

29	CCTV & Networking	35,83,811.00
30	Conference System & AV System	1,78,41,182.00
31	VRF TYPE AIR CONDINTIONING SYSTEM	1,16,60,657.00
32	Fire Alarm System & PA System	42,50,132.00
33	WET RISER SYSTEM WITH SPRINKLER SYSTEM	1,08,34,910.00
34	LIFT	25,81,451.00
35	UPS	5,05,748.00
36	EMERGENCY LIGHT & ILLUMINATED SIGNAGE	1,66,964.00
37	STREET LIGHTING	14,70,806.00
38	SOLAR PV POWER GENERATION	32,56,800.00
	Total=	7,77,05,980.00
	Total Civil DSR'23 Amount	118517.00
A	Add GST MF & CF = 0.973 on DSR'23 Items	115317.00
B	Total DSR'25 & MR Amount	77587463.00
	Total Electrical (A+B)=	7,77,02,780.00
	Total(Civil+Electrical)=	29,60,65,813.00

SLNo	Description	Qty	Unit	Rate	Amount	DSR No.
Correction – Nil, Insertion – Nil, Deletion – Nil						
	AE(P)(C)		AE(P)(E)		EE(C)	

1	EARTH WORK					2
1.1	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m in width as well as 10 sqm on plan) including getting out and disposal of excavated earth lead upto 50 m and for all lift, as directed by Engineer-in-charge.					2.6
1.1.1	All kinds of soil	1119	cum	177.50	198623.00	2.6.1
1.2	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, for all lift, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.					2.8
1.2.1	All kinds of soil.	2635	cum	260.30	685891.00	2.8.1
1.3	Excavating trenches by mechanical / manual means of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, for all depth, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m:					2.1
1.3.1	All kinds of soil					2.10.1
1.3.1.1	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	200	metre	352.15	70430.00	2.10.1.2
1.4	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 and for all lif.	2635	cum	196.00	516460.00	2.25
1.5	Excavating, supplying, stacking and filling of local earth (including royalty) by mechanical transport upto a lead of 5km also including ramming and watering of the earth in layers not exceeding 20 cm in foundation trenches, plinth, sides	7950	cum	700.50	5568975.00	2.25A

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	of foundation etc. complete for all lift.					
	Sub-Total				7040379.00	
2	CEMENT CONCRETE (CAST IN SITU)					4
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 :					4.1
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)	621	cum	6518.60	4048051.00	4.1.10
	Sub-Total				4048051.00	
3	REINFORCED CEMENT CONCRETE					5
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 :					5.1
3.1.1	1:2:4 (1 cement : 2 coarse sand (zone-III) derived from natural sources : 4 graded stone aggregate 20 mm nominal size derived from natural sources)	164	cum	8583.40	1407678.00	5.1.3
3.2	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15 degree landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases above plinth level up to floor five level, excluding the cost of centering, shuttering, finishing and reinforcement with 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).	7	cum	11505.50	80539.00	5.3
3.3	Centering and shuttering including strutting, propping etc. and removal of form for					5.9
3.3.1	Foundations, footings, bases of columns, etc. for mass concrete	1928	sqm	392.15	756065.00	5.9.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

3.3.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	570	sqm	842.50	480225.00	5.9.2
3.3.3	Suspended floors, roofs, landings, balconies and access platform	4030	sqm	927.25	3736818.00	5.9.3
3.3.4	Lintels, beams, plinth beams, girders, bressumers and cantilevers	5378	sqm	736.40	3960359.00	5.9.5
3.3.5	Columns, Pillars, Piers, Abutments, Posts and Struts	2953	sqm	961.30	2838719.00	5.9.6
3.3.6	Stairs, (excluding landings) except spiral-staircases	322	sqm	764.95	246314.00	5.9.7
3.3.7	Edges of slabs and breaks in floors and walls					5.9.16
3.3.7.1	Under 20 cm wide	860	metre	208.55	179353.00	5.9.16.1
3.3.8	Weather shed, Chajjas, corbels etc., including edges	78	sqm	951.10	74186.00	5.9.19
3.4	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc., including cost of de-shuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured).					5.11
3.4.1	Suspended floors, roofs, landings, beams and balconies (Plan area to be measured)	3173	sqm	384.30	1219384.00	5.11.1
3.5	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.					5.22
3.5.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	250658	kg	107.85	27033465.00	5.22.6
3.6	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.					5.22A
3.6.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	270370	kg	107.85	29159405.00	5.22A.6
3.7	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	349	metre	78.40	27362.00	5.3

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

3.8	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge, for the following grades of concrete.: Note: Extra cement up to 10% of the minimum specified cement content in design mix shall be payable separately. In case the cement content in design mix is more than 110% of the specified minimum cement content, the contractor shall have discretion to either re-design the mix or bear the cost of extra cement.					5.33
3.8.1	All works upto plinth level					5.33.1
3.8.1.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	203.63	cum	9504.75	1935452.00	5.33.1.1
3.8.1.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	715	cum	9655.70	6903826.00	5.33.1.2
3.8.2	All works above plinth level upto floor V level					5.33.2
3.8.2.1	Concrete of M25 grade with minimum cement content of 330 kg /cum	41	cum	9860.40	404276.00	5.33.2.1
3.8.2.2	Concrete of M30 grade with minimum cement content of 350 kg /cum	1436	cum	10011.35	14376299.00	5.33.2.2
3.9	Add for using extra cement in the items of design mix over and above the specified cement content therein.	790	quintal	733.50	579465.00	5.35
	Sub-Total				95399190.00	
4	MASONRY WORK					6

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

4.1	Extra for providing and placing in position 2 Nos 6 mm dia. M.S. bars at every third course of half brick masonry.	2288	sqm	104.80	239782.00	6.15
4.2	Providing and laying Autoclaved Aerated concrete(AAC) blocks masonry 100 mm/ 125 mm thick with Grade-1 AAC blocks of density 551 to 650 kg/cum conforming to IS:2185 (Part 3) in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 coarse sand). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work.	311	cum	10195.45	3170785.00	6.38
	Sub-Total				3410567.00	
5	CLADDING WORK					8
5.1	Providing and fixing 18 mm thick gang saw cut, mirror polished, premoulded and prepolished, machine cut for kitchen platforms, vanity counters, window sills, facias and similar locations of required size, approved shade, colour and texture laid over 20 mm thick base cement mortar 1:4 (1 cement : 4 coarse sand), joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing of edges to give high gloss finish etc. complete at all levels.					8.2
5.1.1	Granite stone slab of colour black, Cherry/Ruby red					8.2.2
5.1.1.1	Area of slab upto 0.50 sqnn	44	sqm	5413.50	238194.00	8.2.2.1
5.2	Providing edge moulding to 18 mm thick marble stone counters, Vanities etc., including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge.					8.3
5.2.1	Granite work	500	metre	510.95	255475.00	8.3.2
5.3	Extra for providing opening of required size & shape for wash basin/ kitchen sink in kitchen platform, vanity counter and similar location in marble/ Granite/ stone work, including necessary holes for pillar taps etc. including moulding, rubbing and polishing of	32	each	978.70	31318.00	8.5

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	cut edges etc. complete.					
5.4	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3(1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	1229	sqm	1267.95	1558311.00	8.31
	Sub-Total				2083298.00	
6	WOOD AND P. V. C. WORK					9
6.1	Extra for providing frosted glass panes 4 mm thick (weight not less than 10 kg per sqm) instead of ordinary float glass panes 4 mm thick (weight not less than 10 kg per sqm) in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	23	sqm	176.40	4057.00	9.12
6.2	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:					9.21
6.2.1	30 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	256	sqm	2172.10	556058.00	9.21.2
6.3	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of flush door shutters (over all area of door shutter to be measured).	221	sqm	462.35	102179.00	9.23
6.4	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete.					9.48

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

6.4.1	Fixed to openings /wooden frames with rawl plugs screws etc.	4131	kg	238.35	984624.00	9.48.2
6.5	Providing and fixing IS : 12817 marked stainless steel butt hinges with stainless steel screws etc. complete :					9.7
6.5.1	125x64x1.90 mm	360	each	118.20	42552.00	9.70.1
6.6	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	90	each	983.15	88484.00	9.84
6.7	Providing and fixing aluminium hanging floor door stopper, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade, with necessary screws etc. complete.					9.101
6.7.1	Single rubber stopper	90	each	39.60	3564.00	9.101.1
6.8	Providing and fixing Fiber Glass Reinforced plastic (FRP) Door Frames of cross-section 90 mm x 45 mm having single rebate of 32 mm x 15 mm to receive shutter of 30 mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat. Door frame laminate shall be 2 mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fiber glass from all sides. M.S. stay shall be provided at the bottom to steady the frame.	220	metre	570.95	125609.00	9.121
6.9	Providing and fixing to existing door frames.					9.122

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

6.9.1	30 mm thick Fiberglass Reinforced Plastic (F.R.P.) flush door shutter in different plain and wood finish made with fire retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate all around, with suitable wooden blocks inside at required places for fixing of fittings and polyurethane foam (PUF)/ Polystyrene foam to be used as filler material throughout the hollow panel, casted monolithically with testing parameters of F.R.P. laminate conforming to table 3 of IS: 14856, complete as per direction of Engineer-in-charge.	74	sqm	4488.95	332182.00	9.122.2
6.1	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt/ suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S, including cost of adhesive of approved quality.					9.127
6.10.1	1.0 mm thick	221	sqm	897.30	198303.00	9.127.2
6.11	Providing and fixing fire resistant door frame of section 143 x 57 mm having built in rebate made out of 16 SWG G.I. sheet (zinc coating not less than 120 gm/sqm) duly filled with vermiculite based concrete mix, suitable for mounting 60 minutes fire rated door shutters. The frame is fitted with intumescent fire seal strip of size 10x4 mm (minimum) around the frame and fixing with dash fastener of approved size and make, including applying a coat of approved brand fire resistant primer etc. complete as per direction of Engineer-in-charge (Dash fastener to be paid for separately).	48	metre	1709.25	82044.00	9.136

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

6.12	Providing and fixing 50 mm thick glazed fire resistant door shutters of 60 minutes fire rating conforming to IS:3614 (Part-II), tested and certified as per laboratory approved by Engineer-in-charge, with suitable mounting on door frame, consisting of vertical styles, lock rail, top rail 100 mm wide, bottom rail 200 mm wide, made out of 16 SWG G.I.sheet (zinc coating not less than 120 gm/sqm) duly filled FR insulation material and fixing with necessary stainless steel ball bearing hinges of approved make, including applying a coat of approved fire resistant primer etc. all complete as per direction of Engineer-in-charge (panneling to be paid for separately).	25	sqm	7533.20	188330.00	9.137
6.13	Providing and fixing glazing in fire resistant door shutters, fixed panels & partitions etc., with G.I. beading made out of 1.6 mm thick G.I. sheet (zinc coating not less than 120 gm/sqm) of size 20 x 33 mm screwed with M4 x 38 mm SS screws at distance 75 mm from the edges and 150 mm c/c , including applying a coat of approved fire resistant primer/ powder coating of not less than 30 micron on G.I. beading, & special ceramic tape of 5 x 20 mm size etc complete in all respect as per NBC 2016, IS 16231 (Part 3):2016 and as per direction of Engineer-in-charge with glass of required thickness having 60 minutes of fire resistance both integrity & radiation control (EW60) and minimum 20 minutes of insulation (E120). The manufacturer have to give test report/certification of fire glass and the glass should have the stamp showing the value of E, EW & EI. The glass shall be tested in approved NABL accredited lab or by any other accreditation body which operates in accordance with ISO/IEC 17011 and accredits labs as per ISO/IEC 17025 for testing and calibration scopes shall be eligible. The maximum glazing	24	sqm	40405.55	969733.00	9.138

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	size shall not be more than 1100x2200 mm (w x h) or 2.42 sqm.					
6.14	Providing and fixing factory made uPVC glazed/wire mesh windows/doors comprising of lead free uPVC multi-chambered frame, sash and mullion/coupler (where ever required) extruded profiles having minimum wall thickness of 1.70 mm for Series R1 and R2 profiles and 2.10 mm for Series R3 and R4 profiles conforming to EN: 12608 in any shape, colour and design duly reinforced with galvanized mild steel section made of required shape & size as per CPWD Specification, uPVC extruded glazing beads, interlocks and Inline sash adaptor (where ever required) of appropriate dimension, EPDM gasket, hardware, SS 304 grade fasteners of minimum 8 mm dia with countersunk head, comprising of matching polyamide PA6 grade sleeve for fixing frame to finished wall as per IS 1367 : Part 1 to 14, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame, sash & mullion (if required) shall be mitred cut and fusion welded/mechanically jointed duly sealed at all corners, including drilling of holes for fixing hardware and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of approved size and quality, all complete as per approved drawing conforming to CPWD specification & direction of Engineer-in-Charge. Section of steel reinforcement and cross sections of uPVC profiles to be as per design approved by Engineer-in-Charge. Wire mesh / Glazing of plain/ toughened/ laminated/ double glass unit with / without high performance coatings as per design requirements and conforming to IS: 3548 & IS: 16231 shall be paid separately.					9.147

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Note:- Structural design proof checked from a Government Engineering Institute, to be provided by the manufacturer for (i) Sites with basic wind speed > 45 m/sec as per IS 875 — Part 3 (ii) Sites with structure height more than 20m for all wind speeds					
6.14.1	Three track three panels sliding window with two glazed & one wire mesh panels with Aluminium channel for roller track, wool pile, nylon rollers with SS 304 body.					9.147.A4
6.14.1.1	Using R3 series with frame (98 mm & above) x (40 mm & above) & both glazed and fly screen sash (30 mm & above) x (55 mm & above) with zinc alloy (zamak) powder coated handle on every glazed panel along with multi-point locking system. (Height upto 1.8m).	268	sqm	10874.20	2914286.00	9.147.A4.2
6.14.2	Fixed window/ ventilator without mullion /transom.					9.147.C1
6.14.2.1	Using R1 series with frame (33 mm & above) x (35 mm & above). (Height upto 0.90 metre)	9	sqm	8247.25	74225.00	9.147.C1.1
6.15	Providing and fixing zinc alloyed (white powder coated) touch lock for uPVC sliding window with necessary screws etc. complete.	108	each	204.00	22032.00	9.15
6.16	Providing and fixing fire resistant door frame of section 50 x 60 mm on horizontal side & 35 x 60 mm on vertical sides having built in rebate made out of 1.6 mm thick GI sheet (Zinc coating not less than 120 gm/sqm) suitable for mounting 120 minutes Fire Rated Glazed Door Shutters. The frame shall be filled with mineral wool Insulation having density minimum 96Kg/sqnn. The frame will have a provision of G.I. anchor fastners 14 nos (5 each on vertical style & 4 on horizontal style of size M10 x 80) suitable for fixing in the opening along with factory made template for SS ball bearing hinges of size 100x89x3 mm for fixing of fire rated glazed shutter. The frame shall be finished with an approved fire resistant primer or powder coating of not less than 30 micron	21	metre	2202.90	46261.00	9.161

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	in desired shade as per the directions of Engineer - in- Charge. (Cost of SS ball bearing hinges is excluded).					
6.17	Providing and fixing non load bearing fixed frame for fire resistant glazed partition for 120 minutes fire rating, made out to a profile of dimension 60 mm x 70 mm of 1.6 mm thick galvanised steel sheet as per test evidence suitable for fixing fire rated glass for 120 minutes of both integrity & radiation control (EW120) & minimum 20 minutes of insulation (E120).The profile has to be fixed to the supporting construction by means of anchor fasteners of size M10 x 80, every 150 mm from the edges and every 500 mm (approx) c/c. Linear measurement of frame shall be measured for payment. The frame shall be filled with mineral wool insulation of density minimum 96kg/ cum and finished with a approved fire resistant primer or powder coating of not less than 30 micron in desired shade as per NBC 2016, IS 16231 (Part 3):2016 and directions of Engineer - in- Charge.	7	metre	2202.90	15420.00	9.163
6.18	Providing and fixing bright /matt finished Stainless Steel handles of approved quality & make with necessary screws etc all complete.					9.165
6.18.1	125 mm	72	each	119.20	8582.00	9.165.1
6.19	Providing and fixing stainless steel fancy handle of approved make fixed with SS screws etc. complete as per direction of Engineer-in-charge.					9.17
6.19.1	200 mm	9	each	186.65	1680.00	9.170.1
	Sub-Total				6760205.00	
7	STEEL WORK					10
7.1	Providing and fixing 1 mm thick M.S. sheet door with frame of 40x40x6 mm angle iron and 3 mm M.S. gusset plates at the junctions and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.					10.5
7.1.1	Using M.S. angels 40x40x6 mm for diagonal braces	6	sqm	5804.35	34826.00	10.5.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

7.2	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. bar, bent to shape with hooked ends in R.C.C. slabs or beams during laying, including painting the exposed portion of loop, all as per standard design complete.	30	each	226.00	6780.00	10.17
7.3	Providing and fixing circular/ Hexagonal cast iron or M.S. sheet box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick M.S. sheet with its top surface hacked for proper bonding, top lid shall be screwed into the cast iron/ M.S. sheet box by means of 3.3 mm dia round headed screws, one lock at the corners. Clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.	90	each	220.65	19859.00	10.18
7.4	Steel work welded in built up sections/ framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.					10.25
7.4.1	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	5037	kg	172.60	869386.00	10.25.2
7.5	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners, stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.).	3327	kg	772.40	2569775.00	10.28
	Sub-Total				3500626.00	
8	FLOORING					11

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

8.1	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement, including cement slurry, but excluding the cost of nosing of steps etc. complete.					11.3
8.1.1	40 mm thick with 20 mm nominal size stone aggregate	444	sqm	614.20	272705.00	11.3.1
8.2	Chequered precast cement concrete tiles 22 mm thick in footpath & courtyard, jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and cleaning etc. complete, on 20 mm thick bed of cement mortar 1:4 (1 cement: 4 coarse sand).					11.2
8.2.1	Ordinary cement without any pigment	618	sqm	1056.35	652824.00	11.20.4
8.3	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in colours White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement: 4 Coarse sand), jointing with grey cement slurry @ 3.3 kg/ sqm including grouting the joints with white cement and matching pigments etc., complete.	444	sqm	1330.00	590520.00	11.39
8.4	Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the					11.41A

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	tiles gently and easily.					
8.4.1	Double charge vitrified tile polished finish of size					11.41A.1
8.4.1.1	Size of Tile 600 x 600 mm	1884	sqm	1453.65	2738677.00	11.41A.1.1
8.5	Providing and laying Polished Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge.					11.56
8.5.1	Polished Granite stone slab of colour Black, Cherry/Ruby Red or equivalent	1346	sqm	4481.30	6031830.00	11.56.1
	Sub-Total				10286556.00	
9	ROOFING					12
9.1	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1 m x 1 m x 400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement, rounding the edges and making and finishing the outlet complete.	16	each	298.25	4772.00	12.22
9.2	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.					12.41
9.2.1	110 mm diameter	288	metre	377.40	108691.00	12.41.2
9.3	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with					12.42

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	seal ring conforming to IS :5382, leaving 10 mm gap for thermal expansion.					
9.3.1	Bend 87.5°					12.42.5
9.3.1.1	110 mm bend	16	each	150.35	2406.00	12.42.5.2
9.3.2	Shoe (Plain)					12.42.6
9.3.2.1	110 mm Shoe	16	each	131.85	2110.00	12.42.6.2
9.4	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.					12.43
9.4.1	110 mm	192	each	371.30	71290.00	12.43.2
9.5	Providing and fixing false ceiling at all heights including providing and fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50 mm long with 6 mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts & bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing					12.45

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25 mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound , jointing tapes , finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer's specification and also including the cost of making openings for light fittings, grills, difusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with :					
9.5.1	12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) :2011 (Board with BIS certification marks)	743	sqm	1355.80	1007359.00	12.45.1
	Sub-Total				1196628.00	
10	FINISHING					13
10.1	12 mm cement plaster of mix:					13.4
10.1.1	1:6 (1 cement: 6 coarse sand)	9413	sqm	343.65	3234777.00	13.4.2
10.2	15 mm cement plaster on rough side of single or half brick wall of mix:					13.5
10.2.1	1:6(1 cement: 6 coarse sand)	9309	sqm	395.35	3680313.00	13.5.2
10.3	6 mm cement plaster of mix:					13.16
10.3.1	1:3(1 cement :3 fine sand)	4948	sqm	300.45	1486627.00	13.16.1
10.4	Finishing walls with Acrylic Smooth exterior paint of required shade:					13.46
10.4.1	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 0.90 litre/10 sqm)	10533	sqm	160.60	1691600.00	13.46.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

10.5	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :					13.61
10.5.1	Two or more coats on new work	632	sqm	155.90	98529.00	13.61.1
10.6	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the surface even and smooth complete.	22514	sqm	156.05	3513310.00	13.8
10.7	Wall painting with acrylic emulsion paint, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.					13.82
10.7.1	Two coats	13731	sqm	137.45	1887326.00	13.82.2
10.8	Applying priming coats with primer of approved brand and manufacture, having low VOC (Volatile Organic Compound) content.					13.85
10.8.1	With water thinnable cement primer on wall surface having VOC content less than 50 grams/litre	13731	sqm	73.95	1015407.00	13.85.3
	Sub-Total				16607889.00	
11	ROAD WORK					16
11.1	Providing and filling in position rubberized bitumen hot sealing compound for sealing of expansion joints in roads / pavements all complete as per direction of the Engineer-in-Charge.					16.46
11.1.1	Using grade A sealing compound conforming to IS: 1834	12730	per cm depth per cm width per metre length	8.65	110115.00	16.46.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

11.2	Providing and laying C.C. pavement of mix M-25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately). (Note:- Cement content considered in this item is @ 330 kg/cum. Excess/ less cement used as per design mix is payable/ recoverable separately).	448	cum	9823.80	4401062.00	16.75
11.3	Construction of granular sub-base by providing close graded Material conforming to specifications, mixing in a mechanical mix plant at OMC, carriage of mixed material by tippers to work site, for all leads & lifts, spreading in uniform layers of specified thickness with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications and directions of Engineer- in-Charge.					16.78
11.3.1	With material conforming to Grade-I (size range 75 mm to 0.075 mm) having CBR Value-30	364	cum	2784.00	1013376.00	16.78.1
	Sub-Total				5524553.00	
12	SANITARY INSTALLATIONS					17
12.1	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:					17.1
12.1.1	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	16	each	6767.40	108278.00	17.1.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

12.2	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required :					17.2
12.2.1	W.C. pan with ISI marked white solid plastic seat and lid	28	each	6515.55	182435.00	17.2.1
12.3	Providing and fixing white vitreous china flat back half stall urinal of size 580x380x350 mm with white PVC automatic flushing cistern, with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS : 2556, C.I. trap with outlet grating and other couplings in C.P. brass, including painting of fittings and cutting and making good the walls and floors wherever required :					17.5
12.3.1	Single half stall urinal with 5 litre P.V.C. automatic flushing cistern	16	each	12071.75	193148.00	17.5.1
12.4	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:					17.7
12.4.1	White Vitreous China Flat back wash basin size 550x 400 mm with single 15 mm C.P. brass pillar tap	44	each	1879.20	82685.00	17.7.4
12.5	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS:13983 with C.I. brackets and stainless steel plug 40 mm, including painting of fittings and brackets, cutting and making good the walls wherever required :					17.1
12.5.1	Kitchen sink with drain board					17.10.1
12.5.1.1	510x1040 mm bowl depth 250 mm	3	each	6945.60	20837.00	17.10.1.1
12.6	Providing and fixing CP Brass 32 mm size Bottle Trap of approved quality & make and as per the direction of Engineer-in-charge.	20	each	1034.80	20696.00	17.22A

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

12.7	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.					17.28
12.7.1	Flexible pipe					17.28.2
12.7.1.1	40 mm dia	20	each	119.55	2391.00	17.28.2.2
12.8	Providing and fixing soil, waste and vent pipes :					17.35
12.8.1	100 mm dia					17.35.1
12.8.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	436	metre	1169.30	509815.00	17.35.1.3
12.9	Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including cost of cutting holes and making good the walls etc. :					17.37
12.9.1	For 100 mm dia pipe	360	each	362.85	130626.00	17.37.1
12.1	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.					17.38
12.10.1	100 mm dia					17.38.1
12.10.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	120	each	567.20	68064.00	17.38.1.3
12.11	Providing and fixing plain bend of required degree.					17.39
12.11.1	100 mm dia					17.39.1
12.11.1.1	Hubless centrifugally cast (spun) iron pipes epoxy coated inside & outside IS:15905	80	each	368.00	29440.00	17.39.1.3
12.12	Providing and fixing heel rest sanitary bend					17.4
12.12.1	100 mm dia					17.40.1
12.12.1.1	Sand cast iron S&S as per IS - 3989	20	each	548.70	10974.00	17.40.1.2
12.13	Providing and fixing single equal plain junction of required degree :					17.44
12.13.1	100x100x100 mm					17.44.1
12.13.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	80	each	581.45	46516.00	17.44.1.3
12.14	Providing and fixing terminal guard :					17.56
12.14.1	100 mm					17.56.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

12.14.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	20	each	427.80	8556.00	17.56.1.3
12.15	Providing and fixing shielded coupling for Hubless centrifugally cast iron pipe					17.57A
12.15.1	100 mm dia					17.57A.1
12.15.1.1	SS 304 grade coupling with EPDM rubber gasket	160	each	432.05	69128.00	17.57A.1.1
12.16	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors :					17.6
12.16.1	100 mm inlet and 100 mm outlet					17.60.1
12.16.1.1	Hubless centrifugally cast (spun) iron epoxy coated inside & outside as per IS:15905	40	each	854.55	34182.00	17.60.1.3
12.17	Painting sand cast iron/ centrifugally cast (spun) iron soil, waste vent pipes and fittings with two coats of synthetic enamel paint of any colour such as chocolate grey, or buff etc. over a coat of primer (of approved quality) for new work :					17.65
12.17.1	100 mm diameter pipe	135	metre	82.80	11178.00	17.65.1
12.18	Providing and fixing M.S. holder bat clamp of approved design to sand cast iron/ cast iron (spun) pipes comprising of M.S. flat brackets made of 50x5 mm flat of specified shape, projecting 75 mm outside the wall surface and fixed on wall with 4nos, 6 mm dia expansion hold fasteners, including drilling necessary holes in brick wall/ CC/ RCC surface and the cost of bolts etc. The pipes shall be fixed to the already fixed brackets with the help of 30 mm x1.6 mm galvanised M.S. flats of specified shape and of total length 420 mm and shall be fixed with M.S. nuts, bolts, & washers of size 25x6 mm, one bolts on each side of the pipe.					17.77
12.18.1	Total bracket length 810 mm of approved shape and design (for two 100 mm dia pipes)	96	each	378.10	36298.00	17.77.2
	Sub-Total				1565247.00	
13	WATER SUPPLY					18

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

13.1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply and all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge. Internal work - Exposed on wall					18.7
13.1.1	25 mm nominal dia Pipes	128	metre	401.55	51398.00	18.7.3
13.1.2	40 mm nominal dia Pipes	100	metre	702.95	70295.00	18.7.5
13.1.3	50 mm nominal dia Pipes	150	metre	934.15	140123.00	18.7.6
13.2	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings and fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge. Concealed work, including cutting chases and making good the walls etc.					18.8
13.2.1	20 mm nominal dia Pipes	100	metre	537.60	53760.00	18.8.2
13.2.2	25 mm nominal dia Pipes	100	metre	627.25	62725.00	18.8.3
13.3	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings This includes jointing of pipes & fittings with one step CPVC solvent cement, trenching, refilling & testing of joints complete as per direction of Engineer in Charge. External work					18.9
13.3.1	50 mm nominal dia Pipes	120	metre	794.25	95310.00	18.9.6
13.4	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :					18.18
13.4.1	25 mm nominal bore	8	each	464.05	3712.00	18.18.3
13.5	Providing and fixing uplasticised PVC connection pipe with brass					18.21

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	unions :					
13.5.1	45 cm length					18.21.2
13.5.1.1	15 mm nominal bore	96	each	97.75	9384.00	18.21.2.1
13.6	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet :					18.22
13.6.1	150 mm diameter	12	each	222.35	2668.00	18.22.2
13.7	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	26000	per litre	11.00	286000.00	18.48
	Sub-Total				775375.00	
14	DRAINAGE					19
14.1	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :					19.6
14.1.1	300 mm dia. R.C.C. pipe	80	metre	994.30	79544.00	19.6.4
14.2	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:1.5:3 mix (1 cement : 1.5 coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :					19.7
14.2.1	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :					19.7.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

14.2.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	15	each	12770.55	191558.00	19.7.1.1
14.3	Extra for depth for manholes :					19.8
14.3.1	Size 90x80 cm					19.8.1
14.3.1.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	4	metre	8825.40	35302.00	19.8.1.1
14.4	Making soak pit 2.5 m diameter 3.0 metre deep with 45 x 45 cm dry brick honey comb shaft with bricks and S.W. drain pipe 100 mm diameter, 1.8 m long complete as per standard design.					19.32
14.4.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	2	each	26861.90	53724.00	19.32.1
	Sub-Total				360128.00	
15	ALUMINIUM WORK					21
15.1	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :					21.1
15.1.1	For fixed portion					21.1.1
15.1.1.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	275	kg	530.90	145998.00	21.1.1.2

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

15.1.2	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)					21.1.2
15.1.2.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	275	kg	634.45	174474.00	21.1.2.2
15.2	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with EPDM rubber / neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge . (Cost of aluminium snap beading shall be paid in basic item):					21.3
15.2.1	With float glass panes of 5 mm thickness (weight not less than 12.50 kg/sqm)	280	sqm	1505.25	421470.00	21.3.2
15.3	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer- in-charge.					21.4
15.3.1	With stainless steel cover plate minimum 1.25 mm thickness	24	each	2823.85	67772.00	21.4.1
	Sub-Total				809714.00	
16	WATER PROOFING					22

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

16.1	Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : (a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm. This layer will be allowed to air cure for 4 hours. (b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	440	sqm	617.05	271502.00	22.5
16.2	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: (a) Applying a slurry coat of neat cement using 2.75 kg/sqm of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300 mm height including cleaning the surface before treatment. (b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs. (c) After two days					22.7

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. (d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3 mm deep. (e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. "All above operations to be done in order and as directed and specified by the Engineer-in-Charge":					
16.2.1	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	1336	sqm	1684.60	2250626.00	22.7.1
16.3	Providing and applying of swellable type water stop tape, 19 mm x 25 mm thick in linear metre (expansive nature) for construction joints treatment of RCC structure such as raft slab, retaining walls, water storage tank and at the junctions of raft slab with the retaining walls etc.. After cleaning the surface, one coat of required primer for swellable water stop tape shall be applied throughout the length of the joint @3.78 litre per 240 running metre. Over the primed surface swellable type water stop tape shall be placed. The work shall be carried out all complete as per specification and the direction of the Engineer-In-Charge. The product performance shall carry guarantee for 10 years against any leakage.	30	metre	573.45	17204.00	22.26
	Sub-Total				2539332.00	
17	RAIN WATER HARVESTING & TUBEWELLS					23

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

17.1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level.					23.1
17.1.1	All types of soil					23.1.1
17.1.1.1	300 mm dia	90	metre	707.75	63698.00	23.1.1.1
17.2	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.					23.3
17.2.1	150 mm nominal size dia	60	metre	793.25	47595.00	23.3.2
17.2.2	200 mm nominal size dia	30	metre	1113.35	33401.00	23.3.3
17.3	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.					23.4
17.3.1	150 mm nominal size dia	20	metre	807.45	16149.00	23.4.2
17.3.2	200 mm nominal size dia	10	metre	1255.70	12557.00	23.4.3
17.4	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer- in-charge.	2	cum	2024.50	4049.00	23.8

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

17.5	Development of tube well in accordance with IS : 2800 (part I) and IS: 11189, to establish maximum rate of useable water yield without sand content (beyond permissible limit), with required capacity air compressor, running the compressor for required time till well is fully developed, measuring yield of well by “V” notch method or any other approved method, measuring static level & draw down etc. by step draw down method, collecting water samples & getting tested in approved laboratory, including disinfection of tubewell, all complete, including hire & labour charges of air compressor, tools & accessories etc., all as per requirement and direction of Engineer-in-charge.	8	hour	1085.05	8680.00	23.12
17.6	Providing and fixing suitable size threaded mild steel cap or spot welded plate to the top of bore well housing/ casing pipe, removable as per requirement, all complete for borewell of:					23.13
17.6.1	150 mm dia	1	each	246.45	246.00	23.13.2
17.7	Providing and fixing M.S. clamp of required dia to the top of casing/ housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.					23.14
17.7.1	150 mm clamp	1	each	2019.05	2019.00	23.14.2
17.8	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).					23.15
17.8.1	150 mm dia	1	each	322.00	322.00	23.15.2
	Sub-Total				188716.00	
18	NEW TECHNOLOGIES AND MATERIALS					26

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

18.1	Providing & fixing false ceiling at all heights with GRG (Glass Fibre Reinforced Gypsum) false ceiling tiles of Size 595x595 mm of approved texture, design and patterns having moisture content less than 2%, humidity resistance of 99%, NRC0.50 to 0.75 as per IS 8225:1987, Non combustible as per BS 476 (part 4)-1970 and light reflectance of 85% (minimum) to be laid in true horizontal level suspended on inter-locking metal T-Grid of hot dipped galvanised iron section of 0.33 mm thick (galvanized @ 120 gram per sqm including both sides) comprising of main-T runners of size 15x32 mm of length 3000 mm, cross - T of size 15x32 mm of length 1200 mm and secondary intermediate cross-T of size 15x32 mm of length 600 mm to form grid module of size 600 x 600 mm, suspended from ceiling using galvanised mild steel items (galvanizing @ 80 grams per sqm) i.e. 50 mm long, 8 mm outer diameter M-6 dash fasteners, 6 mm dia fully threaded hanger rod upto 1000 mm length and L-shape level adjuster of size 85x25x2 mm. Galvanised iron perimeter wall angle of size 24x24x0.40 mm of length 3000 mm to be fixed on periphery wall / partition with the help of plastic rawl plugs at 450 mm center to center and 40 mm long dry wall wood screws. The work shall be carried out as per specifications, drawing and as per directions of the Engineer-in-Charge.					26.26
18.1.1	With semi perforated 12 mm thick micro tegular edged GRG false ceiling tiles.	3202	sqm	1852.05	5930264.00	26.26.1
18.2	Providing and laying 60 mm thick factory made cement concrete paver block of approved shape and colour of M -30 grade made of C&D waste by block making machine with vibratory compaction laid in required pattern and including over 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc.	322	sqm	829.75	267180.00	26.72

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	all complete as per the direction of Engineer-in-charge.					
18.3	Providing and fixing factory made single extruded WPC (Wood Polymer Composite) solid door/window/Clerestory windows & other Frames/ Chowkhat comprising of virgin PVC polymer of K value 58-60 (Suspension Grade), calcium carbonate and natural fibers (wood powder/ rice husk/ wheat husk) and non toxic additives (maximum toxicity index of 12 for 100 gms) fabricated with miter joints after applying PVC solvent cement and screwed with full body threaded star headed SS screws having minimum frame density of 750 kg/cum, screw withdrawal strength of 2200 N (Face) & 1100 N (Edge), minimum compressive strength of 58 N/mm ² , modulus of elasticity 900 N/mm ² and resistance to spread of flame of Class A category with property of being termite/borer proof, water/moisture proof and fire retardant and fixed in position with M.S hold fast/lugs/SS dash fasteners of required dia and length complete as per direction of Engineer-In- Charge. (M.S hold fast/lugs or SS dash fasteners shall be paid for separately). Note: For WPC solid door/window frames, minus 5 mm tolerance in dimensions i.e depth and width of profile shall be acceptable. Variation in profile dimensions on plus side shall be acceptable but no extra payment on this account shall be made.					26.86
18.3.1	Frame size 65 x 100 mm	434	metre	1111.30	482304.00	26.86.5
	Sub-Total				6679748.00	
19	NON SCHEDULE ITEM					MR
19.1	Supplying and filling in plinth with local available sand in foundation trenches and under floors, including watering, ramming, consolidating and dressing complete.	777	Cum	2154.95	1674396.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

19.2	Brick work with non modular fly ash bricks conforming to IS:12894, class designation 7.5 average compressive strength in foundation and plinth with Cement mortar 1:6 (1 cement : 6 coarse sand).	295	Cum	6367.20	1878324.00	MR
19.3	Brick work with non modular fly ash bricks conforming to IS:12894, class designation 7.5 average compressive strength in super structure above plinth level up to floor V level with Cement mortar 1:6 (1 cement : 6 coarse sand).	938	Cum	7856.05	7368975.00	MR
19.4	Half brick masonry with non modular fly ash bricks of class designation 7.5, conforming to IS : 12894, in superstructure above plinth and upto floor V level with Cement mortar 1:4 (1 cement :4 coarse sand).	2288	Sqm	1026.40	2348403.00	MR
19.5	Providing and fixing Stainless steel (grade 304) tower bolts 200x10 mm (Round) of of approved make with necessary screws etc. complete and as per direction of Engineer-in-charge.	180	Each	369.85	66573.00	MR
19.6	Providing and fixing Stainless steel (grade 202) handle 125 mm of with necessary screws etc. complete and as per direction of Engineer-in-charge.	360	Each	290.55	104598.00	MR
19.7	Providing and laying Double charge vitrified tile polished finish of size 600x600 mm (thickness to be specified by manufacturer) with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make in all colours & shade in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1cement: 3 coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including grouting the joint with white cement & matching pigments etc. complete. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily.	283	Sqm	2066.95	584947.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

19.8	Providing and fixing Polished Granite stone slab jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent 18mm thick (sample of granite shall be approved by Engineer-in-charge) in skirting, dado, risers of steps laid on 12mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with white cement slurry mixed with pigment to match the shade of the slabs including rubbing and polishing complete.	813	Sqm	3378.30	2746558.00	MR
19.9	Providing and fixing hand shower (Health Faucet) with 8mm dia, 1.2 meter long flexible tube and wall hook of JAQUAR make (Cat. No. ALD-573) or equivalent, as per direction of the Engineer-in-charge.	48	Each	1941.35	93185.00	MR
19.1	Providing and fixing 6 mm thick glass mirror of high quality back coating including edge high polish and also providing required nos of hole and fixing with C.P. Stud complete as per the direction of Engineer-in-charge.	13	Sqm	8097.65	105269.00	MR
19.11	Providing and fixing stainless steel Glass shelf 600mm long of Jaquar make (Code No. AKP-35771P) or equivalent fixed with 40mm C.P. Brass screws, rawl plug etc. complete and as per direction of Engineer-in-charge.	48	Each	4005.40	192259.00	MR
19.12	Providing and fixing stainless steel toilet paper holder of JAQUAR make (Cat. No. ACN-1151N) or equivalent fixed with 40mm C.P. Brass screws, rawl plug etc. complete and as per direction of Engineer-in-charge.	52	Each	1897.45	98667.00	MR
19.13	Providing and fixing stainless steel Soap Dispenser with Glass Bottle of Jaquar make (Cat. No. ACN-1135N) or equivalent with concealed fittings arrangement as per direction of Engineer-in-charge.	52	Each	1604.85	83452.00	MR
19.14	Providing and fixing stainless steel towel ring round with round flange of Jaquar make (Code No. ACN-1121BN) or equivalent with concealed fittings arrangement as per direction of Engineer-in-	52	Each	1178.05	61259.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	charge.					
19.15	Providing and fixing single stainless steel towel rail 600mm long of Jaquar make (Code No. ACN-1111SM) or equivalent fixed to wooden cleats with CP brass screws with concealed fittings arrangement as per direction of Engineer-in-charge.	52	Each	3967.35	206302.00	MR
19.16	Providing and fixing CPVC gate valve 25 mm nominal bore of approved brand and quality etc. all complete and as per direction of Engineer-in-charge.	12	Each	418.75	5025.00	MR
19.17	Providing and fixing CPVC gate valve 32 mm nominal bore of approved brand and quality etc. all complete and as per direction of Engineer-in-charge.	4	Each	704.25	2817.00	MR
19.18	Providing and fixing CPVC gate valve 50 mm nominal bore of approved brand and quality etc. all complete and as per direction of Engineer-in-charge.	12	Each	1686.95	20243.00	MR
19.19	Providing and fixing C.P. brass bib cock with wall flange of Jaquar make (Catalogue No. CON-047KN) or equivalent as per direction of Engineer-in-charge.	52	Each	1355.55	70489.00	MR
19.2	Providing and fixing C.P. brass 2 way bib cock of Jaquar make (Catalogue No. CON-041KN) or equivalent as per direction of Engineer-in-charge.	52	Each	1532.75	79703.00	MR
19.21	Providing and fixing C.P. brass Long Body Bib Cock with Wall Flange of Jaquar make (Catalogue No. CON-107KN) or equivalent as per direction of Engineer-in-charge.	2	Each	1774.05	3548.00	MR
19.22	Providing and fixing C.P. brass Concealed Stop Cock Suitable for 20mm Pipe Line with Plastic Protection Cap (without Exposed Parts) of Jaquar make (Catalogue No. ALD-089FT) or equivalent with Exposed Part Kit of Concealed Stop Cock with Fitting Sleeve, Operating Lever & Adjustable Wall Flange of Jaquar make (Catalogue No. CON-083FTK) or equivalent as per direction of Engineer-in-charge.	12	Each	1415.10	16981.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

19.23	Providing and fixing C.P. brass Angular stop cock of Jaquar make (Catalogue No. CON-053KN) or equivalent as per direction of Engineer-in-charge.	128	Each	1062.65	136019.00	MR
19.24	Providing and fixing stainless steel grating/jali (Grade 304) of size 125mm diameter of approved brand and manufacture and as per direction of Engineer-in-charge.	24	Each	151.50	3636.00	MR
19.25	Providing and fixing 110 mm square-mouth PVC gully trap complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design with common burnt clay F.P.S. (non modular) bricks of class designation 7.5	8	Each	2930.55	23444.00	MR
19.26	Providing and laying double wall corrugated HDPE pipe socket & spigot tyoe of size 150mm diameter and grade SN-4 conforming to IS code 16098 (part-2) of Make Prince, Supreme or equivalent as approved by Engineer-in-charge including jointing with rubber rings and stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints complete as per the direction of Engineer-in-charge.	100	Metre	489.15	48915.00	MR
19.27	Making antiskid grooves of size 40mm wide and 3mm deep in treads of steps including all material, machinery and labour etc all complete as per direction of Engineer-in-charge.(3 lines to be measured as single unit)	1008	Metre	70.30	70862.00	MR
19.28	Providing and fixing 200 mm wide diamond shaped rabbit wire mesh of gauge 28 with nails at the joints and brick wall and RCC Columns, beams etc. and at the electrical conduits as reinforcement before cement plastering etc. complete as per the directions of Engineering in charge..	5000	Metre	30.80	154000.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

19.29	Providing and fixing Differently abled series combo set (Matrix Set of Hindware) EWC with cistern & seat cover (Cat. No.: 70002 EWC: (P-18)), Wash basin with waste coupling (Wash Basin: 46 x 36 x 18 cm), Hinge rail 2 Nos, Grab bar 4 Nos or equivalent all complete as per the direction of Engineer-in-charge.	8	Each	69580.70	556646.00	MR
19.3	Providing and fixing stainless steel (grade 304) sliding door bolts 250x16 mm (Round Nuckle) of approved make with nuts and screws etc. complete as per direction of Engineer-in-charge.	162	Each	1213.25	196547.00	MR
19.31	Providing & fixing Aeroceil or equivalent make fully/semi-perforated acoustic ceiling at all heights with GRG (Glass Fiber Reinforced Gypsum) square-edged false ceiling tiles of Size 595×595 mm consisting the thickness of 12mm of approved texture, design and patterns having moisture content less than 2%, Rh of 99%, NRC 0.60 to 0.75, Non-combustible as per IS: 1734 static bending of 4.7 N/mm ² and compressive strength of 7.6 N/mm ² AS PER is 2380 (Part-8) to be laid in true horizontal level suspended on inter-locking metal T-Grid of G.I. powder coated section of 0.30mm thick (galvanized @ 120 grams per sqm including both sides) comprising of main-T runners of size 24×38 mm of length 3000 mm, cross - T of size 24×26 mm of length 600 mm and all intermediate cross-T of size 24×26 mm of length 600mm to form grid module of size 600 × 600 mm, suspended from ceiling using galvanized mild steel items i.e. 50 mm long, 8 mm outer diameter M-6 dash fastener hanged by 16 gauge Galvanized/S.S. wire at the distance of 600mm between each. Galvanized iron perimeter wall angle of size 24×24x0.30 mm of length 3000 mm to be fixed on periphery wall / partition with the help of plastic raw plugs at 450 mm center to center and 40 mm	487	Sqm	3128.50	1523580.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	long dry wall metal wood grip screws on which Glass wool mats of 24 density and 50mm thickness to be laid. The work shall be carried out as per specifications, drawing and as per directions of Engineer-in-Charge. (Make: Aeroceil/BSR Calsi/Duxon).					
19.32	Providing and fixing Teak wood stage flooring 100mm high, hard wooden flooring on stage in horizontal as well as in vertical position where ever required . Frame work shall be fabricated by using 25 mm high x 50mm wide wooden battens (preferably 2 grade gumsal or equivalent) fixed on the stage floor at 600mm centres in both directions, by using suitable fasteners. Contractor to co-ordinate with AV vendor and decide final height to conceal stage floor boxes. Resultant air gap between floor and plywood to be lined by using polyester fibre having a density of 1000 GSM and 50mm thick. two layers of 19mm thick FR Grade high density BWP grade plywood is then fixed to wooden frames rigidly by using suitable fasteners and ensure proper level of the plywood surface and fix solid wooden flooring having teak finish of 25mm thick above two layers of 19mm BWP ply. Flooring to be provided with hard wooden corner profiles towards the edge of the stage along with 200mm high 15mm thick hard wooden skirting along the perimeter of the floor with 25 mm PU foam underlay. The cost inclusive of all materials, labours, accessories, ancillary components, scaffolding etc complete in all respect as per approved drawing, design, specification and direction of Engineer in charge.	90	Sqm	19795.10	1781559.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

19.33	Providing & fixing of Aeroceil or equivalent make ARAI certification Acoustically treated auditorium door with heat activated intumescent fire seal stripe mounted on the door frames on all three sides and one coat of anti-termite fire retardant primer. Door shutter consisting of 77mm thick door shutter having minimum 32 dB acoustic cum 120 min. fire rating/having infill of 10x50 Synth Polyfibre density with FR Acrylic Sealant sandwiched between two 9mm thick Calcium Oxide boards a 100%without asbestos, Brucite and Meerscham having a density not less than 1150kg/M3 and thermal conductivity 0.14 W/m* K faced with 3.4mm thick commercial ply 1mm laminated on both sides with heat activated intumescent fire seal strip of size 10mm x4mm mounted in/the grooves having hardwood lipping including door closer, CE & EN1154 certified 2 hrs fire rated with 10 years warranty tested to BS 476 (Part 22 and as per approved make & single/double leaf panic exit devices, CE & EN 1125 certified 2 hr's requirements except as noted herein. Impaling clips shall be fastened to floor slab. PE structure laminated.contractor should submit 2 hr fire rated certificate from CBRI and should attach with the bill.	24	Sqm	25609.10	614618.00	MR
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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

19.34	Providing and Fixing Aeroceil or equivalent make, Heritage Brand Shine Up / Pattern 1Xtra Step SERIES Carpet Tiles of 5 mm thickness having size 600 mm * 600 mm with underlying of 6 mm thickness of PU foam is pasting with rubber based Adhesive, shade and pattern and of the followingspecification: Loop pile Carpet Tile of Size 500 mmx 500 mm with Tufted 1/10" lop construction, 92%PA6 Solution Dyed Xelux Color + having pileheight min of 2.9 mm and maximum total height of upto 8mm with secondary backingof Back to Back modified bitumen, enhanced with a thermoplastic elastomer, reinforced with a glass fiber fleece covered with 100% PES fleece including 10%recycled content/ Min tuft density 156gm/m2, Minimum total carpet weight of 4300 g/sgm, Minimum pile weight of 540 g/sqm, having minimum impact noise rating of 36 dB permanent anti-static ISO 6356 of <2 kV. including cost of all materials, cost of all labour, conveyance, loading, unloading, scaffolding .staging, watering and curing, T&P etc. complete as per the direction of the Engineer-in-charge.	312	Sqm	5080.30	1585054.00	MR
19.35	Providing and fixing Aeroceil or equivalent make in position wall panelling of grooved wood panels of width 128 mm, thickness of 15 mm and length 2440 mm made up of medium-density fiber board with minimum density of 800 Kg/m3 substrate with a laminated facing as per the approved shade/species & finish with melamine balancing layer on the reverse side. The boards shall have a special perforation pattern of 3 mm grooves at 21 mm pitch. The edges of the panels shall be "tongued-and-grooved" to receive special G.I. channel with clip for installation. The back of the perforated panels shall have sound absorbing non-woven acoustical	287	Sqm	5737.09	1646545.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	fleece and backed with 50mm thick poly wool layer as directed by the Engineer-in-Charge. The panels shall be mounted on special channels using clips as approved by the Engineer-in-charge. Install G.I stud of section 48X32X0.5 mm and floor channels of section 48x32x0.5 mm or as approved by the Engineer-in- Charge on the solid wall using screws at spacing of 600mm centre-to-centre. Screw the G.I. channel (keel) on channelled G.I stud 600mm centre to centre. Install the first set of wooden panels by inserting the clips. For border channel insert the groove of the panel in to the projecting fange of the clip. Continue installing rows of panels by inserting the tongue into the groove of the earlier inserted panel and progressively installing clips for inside channel into the next G.I. channel (keel) and simultaneously fill the gap between wall & panel with 50 mm thick poly wool having density of 48 kg/m³. Continue the process till the actual height is achieved. Use clips for border channel to finish off the installation, finish the edges and joints using wood moulding of matching colour (to be provided by others) as approved by Engineer-in- Charge.					
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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

19.36	Providing and fixing in position Aeroceil or equivalent make wall paneling at all heights with Aeroceil calcium/Magneisium oxide wood fiber board, density 1100 kgs minimum as per BIS , moisture content 9% +(-) 3%, modulus of electricity bending 3000 N/mm2, Bending strength 9 N/mm2, fire resistant , weather resistant, water resistant, biological termite resistant, sound frequency DB 30, chemically stable, pasted 9mm thick poly panel pasting with silicone adhesive, PET 60% recycled, pioneer green building material , comprising of a frame made from especially fabricated galvanized mild steel sheet 0.50 mm thick pressed section (galvanizing @120 grams per sqm including both sides)i.e. vertical studs of size 48x32 mm are placed at 600mm center to center in a floor and ceiling channel section of size 48x32 m fixed to the floor and soffit at 600mm centers using 12mm dia. 50mm long wedge type expanded zinc alloy dash fastener with 10mm bolt. This same channel is then to be fixed in horizontal direction at 600mm center to center so as to form a grid of 600mm x 600mm. 48mm thickness is then to be inserted in the slots and finally calcium oxide wood fiber rigid square non-combustible panels/tiles are to be screw fixed with self-tapping pan head nickel coated mild steel screws of size 13 x3.2mm on to this grid leaving an even groove of 1 mm channel between the panels in which decorative steel rod will be installed. The joints between the panels are to be duly jointed and finished as per manufacturer's specification as per direction of Engineer-in-Charge all complete.	216	Sqm	8470.00	1829520.00	MR
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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

19.37	Providing and laying Vitrified tiles in floor in different sizes (thickness to be specified by the manufacturer) with water absorption less than 0.08% and conforming to IS:15622, of approved brand & manufacturer, in all colours and shade, laid on 20 mm thick cement mortar 1:4 (1 cement: 4 coarse sand) jointing with grey cement slurry @3.3 kg/sqm including grouting the joints with white cement and matching pigments etc. The tiles must be cut with the zero chipping diamond cutter only . Laying of tiles will be done with the notch trowel, plier, wedge, clips of required thickness, leveling system and rubber mallet for placing the tiles gently and easily. Glazed vitrified tiles vitrified tile polished finish of size of Tile 600 x 1200 mm	461	Sqm	1889.60	871106.00	MR
	Sub-Total				28854024.00	

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

SI No	Description of Items	Qty	Unit	Rate	Amount	Remarks
	INTERNAL ELECTRICAL INSTALLATIONS					
20.1	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.					
20.1.1	Group C	993	Point	1704.00	1692072.00	1.10.3
20.2	Wiring for group controlled (looped) light point/fan point/exhaust fan point/ call bell point (without independent switch etc.) with 1.5 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed PVC conduit, and earthing the point with 1.5 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable etc. as required.					
20.2.1	Group C	232	Point	994.00	230608.00	1.55.3
20.3	Wiring for light/ power plug with 2X4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit along with 1 No. 4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable for loop earthing as required.	4000	Mtr	373.00	1492000.00	1.12
20.4	Wiring for light/ power plug with 4X4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit along with 2 Nos. 4 sq. mm FRLS/HFFR PVC insulated copper conductor single core cable for loop earthing as required.	1000	Mtr	587.00	587000.00	1.14
20.5	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required.					
20.5.1	2 X 1.5 sq. mm + 1 X 1.5 sq. mm earth wire	2000	Mtr	267.00	534000.00	1.14.1
20.5.2	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	200	Mtr	482.00	96400.00	1.14.4
20.5.3	4 X 6 sq. mm + 2 X 6 sq. mm earth wire	500	Mtr	813.00	406500.00	1.14.9
20.5.4	4 X 10 sq. mm + 2 X 6 sq. mm earth	400	Mtr	1078.00	431200.00	1.14.10

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	wire					
20.5.5	4 X 16 sq. mm + 2 X 6 sq. mm earth wire	300	Mtr	1454.00	436200.00	1.14.11
20.6	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.					
20.6.1	Telephone socket outlet	28	Each	168.00	4704.00	1.24.6
20.6.2	TV antenna socket outlet	27	Each	168.00	4536.00	1.24.7
20.6.3	Bell push	18	Each	159.00	2862.00	1.24.8
20.7	Supplying, Installation, Testing and commissioning of CAT6A Copper Information Outlet (IO) with face plate of color as per site requirement, should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D. All copper Cable and Components should be from same OEM to maintain compatibility and interoperability etc. complete as required.	71	Each	302.00	21442.00	39.15
20.8	Supplying and fixing call bell/ buzzer suitable for single phase, 230 V, complete as required.	18	Each	112.00	2016.00	1.38
20.9	Supplying and drawing following pair 0.5 mm dia FRLS/HFFR PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.					
20.9.1	2 Pair	400	Mtr	39.00	15600.00	1.18.2
20.10	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	810	Mtr	54.00	43740.00	1.19
20.11	Supplying and fixing following size/ modules, GI box along with modular base & cover plate for modular switches in recess etc as required.					
20.11.1	1 or 2 Module (75mmX75mm)	230	Each	354.00	81420.00	1.27.1
20.12	Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.					
20.12.1	20 mm	5000.00	Mtr	151.00	755000.00	1.21.1
20.12.2	25 mm	3000.00	Mtr	168.00	504000.00	1.21.2
20.12.3	32 mm	505.00	Mtr	209.00	105545.00	1.21.3

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

20.13	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 3 pin 5/6 A modular socket outlet and 5/6 A modular switch, connections etc. as required.	19.00	Each	545.00	10355.00	1.31
20.14	Supplying & fixing of size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 5/6 & 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.	119.00	Each	659.00	78421.00	1.32
20.15	Supplying & fixing of 3 pin, 5 A ceiling rose on the existing junction box/ wooden block including connections etc. as required.	102.00	Each	104.00	10608.00	1.33
20.16	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 2 nos. 3 pin 5/6 A modular socket outlet and 2 nos. 5/6 A modular switch, connections etc. as required. (For light plugs to be used in non residential buildings.)	97	Each	757.00	73429.00	1.56
20.17	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	200	Each	47.00	9400.00	1.26
	Total=				7629058.00	
	MCBs, DB					
21.1	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator) 2.3.1					
21.1.1	12 way , Double door	4	Each	2871.00	11484.00	2.3.3
21.2	Supplying & fixing of following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 V, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)					
21.2.1	4 way (4 +12), Double door	8	Each	4377.00	35016.00	2.4.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

21.2.2	6 way (4 +18), Double door	12	Each	5299.00	63588.00	2.4.2
21.3	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required . (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)					
21.3.1	4 way (4 + 12), Double door	8	Each	7951.00	63608.00	2.5.1
21.3.2	8 way (4 + 24), Double door	4	Each	10724.00	42896.00	2.5.2
21.4	Supplying and fixing of 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
21.4.1	Single pole	352	Each	285.00	100320.00	2.10.1
21.4.2	Double pole	4	Each	696.00	2784.00	2.10.3
21.5	Supply & fixing of following rating, 415 V, MCB in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
21.5.1	40/63 A TP MCB	56	Each	2094.00	117264.00	MR
21.5.2	40 A FP MCB	12	Each	2593.00	31116.00	MR
21.5.3	63A FP MCB	12	Each	2593.00	31116.00	MR
21.5.4	100 A FP MCB	8	Each	10586.00	84688.00	MR
21.6	Supplying and fixing Cable End Box (Loose Wire Box) suitable for following single pole and neutral, sheet steel, MCB distribution board, 240 Volts, on surface/ recess, complete with testing and commissioning etc. as required.					
21.6.1	For 14 way, Double door SPN MCBDB	4	Each	990.00	3960.00	2.23.4
21.7	Supply & fixing of Cable End Box (Loose Wire Box) suitable for following triple pole and neutral, sheet steel, MCB distribution board, 415 Volts, on surface/recess, complete with testing and commissioning etc. as required.					
21.7.1	For 4 way, Double door TPN MCBDB	8.00	Each	1177.00	9416.00	2.24.1
21.7.2	For 6 way, Double door TPN MCBDB	12.00	Each	1223.00	14676.00	2.24.2

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

21.8	Supplying and fixing Cable End Box (Loose wire box) suitable for triple pole and neutral, sheet steel, Vertical MCB distribution board, 415 V, on surface/ recess, complete with testing and commissioning etc. as required.	12.00	Each	1271.00	15252.00	2.25
21.9	Supplying and fixing 20 A, 415 V, TPN Industrial type socket outlet, with 4 pole and earth, metal enclosed plug top along with 20 A "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	6.00	Each	2773.00	16638.00	2.19
21.10	Supplying and fixing 30 A, 415 V, TPN Industrial type socket outlet, with 4 pole and earth, metal enclosed plug top along with 30 A "C" curve, TPMCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	6.00	Each	4358.00	26148.00	2.20
21.11	Supplying and installing following size of perforated Hot Dipped Galvanised Iron cable tray (Galvanisation thickness not less than 50 microns) with perforation not more than 17.5%, in convenient sections, joined with connectors, suspended from the ceiling with two numbers GI Suspenders i/c base of suitable size GI angle, GI bolts & nuts, fastner etc as required.					
21.11.1	225 mm width X 50 mm depth X 1.6 mm thickness	300.00	Mtr	991.00	297300.00	4.6.3
21.11.2	300 mm width X 50 mm depth X 1.6 mm thickness	300.00	Mtr	1062.00	318600.00	4.6.4
	Total=				1285870.00	
22	Rising Main					
22.1	Supplying, installation on wall, testing and commissioning of following capacity Air Insulated Compact Type Rising Mains for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply with enclosure having IP-54 rating after fixing the tap off boxes and all accessories, made of 1.6mm thick steel sheet duly powder coated in convenient sections complete with 4 Nos aluminium bus bars having current density of 130 A/ sq cm at nominal current rating, necessary joints & expansion joints, fire barrier at each					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	floor, provision of tapping at every metre, continuous earthing with 2 Nos aluminium strip of suitable size (one on each side) including, G.I. clamping brackets, angle iron bracket, steel fasteners, connecting to earthing system etc. as required.					
22.1.1	315 A, I _{sc} = 25kA for 1 second	30.00	Mtr.	9849.00	295470.00	3.8.2
22.2	Supplying, installation, testing & commissioning of following capacity End Feed Unit for the existing Air Insulated Compact Type bus trunking/ rising mains for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply made with 1.6mm thick steel sheet enclosure (IP54) duly powder coated with provision of MCCB/ACB (but without MCCB/ACB) complete with necessary joints including clamping brackets, angle iron bracket, steel fasteners, connecting to earthing system etc. as required					
22.2.1	315 A, I _{sc} = 25kA for 1 sec	2.00	Each	10718.00	21436.00	3.11.2
22.3	Supplying, installation, testing & commissioning of following capacity Plug In/ tap off box on the existing Air Insulated Compact Type bus trunking/ rising mains for use on 3 phase 4 wire 415 volts, 50Hz A.C. supply made with 1.6mm thick sheet steel enclosure (IP54) duly powder coated with provision of MCCB/ACB (but without MCCB/ACB) complete etc. as required					
22.3.1	200 A, I _{sc} = 25kA for 1 sec	8.00	Each	9104.00	72832.00	3.12.2
22.4	Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, I _{cs} =100% I _{cu} and Operational Voltage 690V etc. as required.					
22.4.1	400 A,50KA,FPMCCB	2.00	Each	44663.00	89326.00	2.2.18
22.4.2	200 A,36KA,FPMCCB	8.00	Each	15956.00	127648.00	2.2.15
	Total=				606712.00	
23	Fittings & Fans					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

23.1	Supplying, Installation, Testing & Commissioning of LED Recessed/ surface Down lighter (Round/square/ Rectangular) SMD type of following body material with PMMA and prismatic diffuser and construction as per IS : 10322 with driver as per the requirement with Driver efficiency >85%, Operating voltage AC 140-270 Volt, frequency 50/60 hz, Operating temp range -50C to 400C, internal surge protection of 2.5 KV with Short & Open circuit protection ,THD < 10% , P. F. ≥ 0.95, IP20, CRI > 80, UGR (Unified Glare Rating) < 19, Flicker free (flicker should be below 5%), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K /4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM (Standard Deviation Colour Matching) < 3, Maximum power consumption should not more than the specified rating and Fixture shall be confirming to relevant BIS standards. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing Complete in all respect i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥ 105 and < 120 lm/Watt output . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C) Powder coated die cast /Extruded aluminium Body including trim					
23.1.1	5-7 watt	65	Each	542.00	35230.00	8.1.1
23.1.2	12 -15 watt	296	Each	715.00	211640.00	8.1.3
23.1.3	18 watt	43	Each	920.00	39560.00	8.1.4

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

23.2	Supplying, installation, Testing & Commissioning of Panel light 2x2 ft., of following body material and construction as per IS : 10322 with driver as per the requirement with Driver efficiency >85%, Operating voltage AC 140-270 Volt, frequency 50/60 hz, Operating temp range -5 0C to 40 0C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD < 10% , P. F.≥0.95, IP20, CRI >80,UGR (Unified Glare Rating) < 19, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with, 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM-21-11 report, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/ Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥105 <120 lm/Watt output . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C). Powder coated die cast /Extruded aluminium Body (Thickness > 1.20 mm)					
23.2.1	36 watt	286	Each	2508.00	717288.00	8.6.4

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

23.3	Supplying, Installation, Testing & Commissioning of LED surface mounted Batten light of following body material and construction as per IS : 10322 with driver (Replaceable) as per the requirement with Driver efficiency >85%, Operating voltage AC 140- 270 Volt, frequency 50/60 hz, Operating temp range -5 °C to 40 °C, internal surge protection of 2.5 KV with Short & Open circuit protection, THD < 10%, P. F.≥0.95, IP20, CRI >80, Flicker free, (flicker should be below 5 %), life time (LED, Driver & electrical circuitry), of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin), SDCM(Standard Deviation Colour Matching) <3, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard. Manufactures Word Mark/ Name Engraved/Embossing/ Screen printing on housing. complete in all respect i/c external connections with 1.5 sq mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥105 <120 lm/Watt output . LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in- Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).					
23.3.1	18- 22 Watt	15	Each	681.00	10215.00	8.9.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

23.4	Supply, Installation, Testing and Commissioning of ceiling fan with Brush Less Direct Current (BLDC) Motor, class of insulation: B, 3 nos. metal(Aluminium alloy) blades, 30 cm long down rod, 2 nos. canopies, shackle kit, safety rope, copper winding, steel/Al body Power Factor not less than 0.9, Service Value (CM/M/W) minimum as below, 350 RPM (tolerance as per IS : 374-2019), THD (Total Harmonic Distortion) less than 10%, suitable for operation with regulator for speed control and all remaining accessories including safety pin, nut bolts, washers, temperature rise=75 0C (max.), insulation resistance more than 2 mega ohm, suitable for 230 V, 50 Hz, single phase AC supply, Ceiling Fan compliant to IS 374:2019 fan i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required.					
23.4.1	1200mm, service value ≥ 6.0 CM/Min/Watt, air delivery 210 CM/Min (Minimum)	158	Each	2695.00	425810.00	9.2.3
23.5	SITC of Sleek LED mirror light fitting having lumen output not less than 1000 lumens, System lumen efficacy ≥ 100 lm/Watt output, Driver efficiency $\geq 85\%$, Operating voltage AC 140-270 Volt, frequency 50/60 hz, Operating temp range 0-45°C, internal surge protection of 2.5 KV with Short & Open circuit protection ,THD $\leq 20\%$, P. F. ≥ 0.90 , IP20, CRI ≥ 80 , above wash basin complete with all accessoriesetc. directly on wall, including connection with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	48	Each	571.00	27408.00	MR
23.6	SITC of Decorative light opal glass with chrome finish wall lamp comprising with E14 LED 4.5W x 1 Complete in all respect i/c 5-7 W LED blub, external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required .	3	Each	2611.00	7833.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

23.7	SITC of Decorative light opal glass with chrome finish wall lamp comprising with G9 LED 5W x 1 Complete in all respect i/c 5-7 W LED blub, external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required .	6	Each	5143.00	30858.00	MR
23.8	SITC of 3 watt LED foot lamp comprising with white housing, CCT=4000 i/c suitable sizes of GI box etc. complete as required.	36	Each	877.00	31572.00	MR
23.9	Supplying,installation,testing and commissioning of 10 watt bulk head light fitting With extruded polycarbonate housing, High optically efficient diffuser,Operating temp range 0-45 C, ,THD $\leq$ 10% , P. F. $\geq$ 0.95, IP65, CRI $\geq$ 80 above wash basin complete with all accessories etc. directly on wall, including connection with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	20	Each	1441.00	28820.00	MR
23.10	Supplying, installation of 300 mm sweep 900 RPM heavy duty exhaust fan with metal louver shutter of suitable size in the existing opening suitable for 230 V 50 Hz AC supply connection, testing, commissioning etc. as reqd.	16	Each	4418.00	70688.00	MR
23.11	Supplying, installation of 450 mm sweep 900 RPM heavy duty exhaust fan with metal louver shutter of suitable size in the existing opening suitable for 230 V 50 Hz AC supply connection, testing, commissioning etc. as reqd.	2	Each	6116.00	12232.00	MR
23.12	Supplying, installation of 250 mm sweep PVC body Air freshner exhaust fan suitable for 230 V 50 Hz AC supply connection, testing, commissioning etc. as reqd.	41	Each	1943.00	79663.00	MR
	Total=				1728817.00	
24	Panels and Service Connection					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

24.1	Supplying, installation, testing & commissioning of cubical type outdoor type LT feeder pillar suitable for 415V, 3 Phase, 4 Wire 50 Hz AC supply system of suitable size fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, 3mm thick for gland plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 800 A capacity extensible type four strip aluminium bus bars of high conductivity, DMC / SMC bus bar supports bottom base channel of MS section not less than 100 mmx 50 mm x 5 mm thick, entire panel shall have a common GI earth bar 25mm x 5mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of aluminium bus bars and control wiring with 2.5 sq. mm. PVC insulated copper conductor S/C cable, cable alleys, cable gland plates in two half, i/c Foundation and providing and fixing of following switchgear and components complete as required. (Non Essential Panel)					
	Incomer					
	630 A Open execution manual changeover switch disconnecter with operating handle kit - 1 No.					
	630 A, FP, 36 kA, MCCB thermo magnetic release type with spreader link & ROH - 01 No.					
	1 set of 400/5 A ratio CTs					
	1 Set of LED type indicating lamps(RYB) with 2 Amps SP MCBs for Instrument Protection					
	Multi Function Meter -1 no					
	Busbars and their ratings					
	800 A 4 strip aluminium busbars - 100 % Neutral					
	Outgoing					
	1)320 A, FP, 36 kA MCCB,thermo magnetic release type with spreader link & ROH - -2 nos.					
	2)250 A, FP, 36 kA MCCB,thermo magnetic release type with spreader link & ROH - -1 no.					
	3)160 A, FP, 36 kA MCCB,thermo magnetic release type with spreader link & ROH - -1 nos.					
		1	Job	369880.00	369880.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

24.2	Supplying, installation, testing & commissioning of cubical type outdoor type LT feeder pillar suitable for 415V, 3 Phase, 4 Wire 50 Hz AC supply system of suitable size fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, 3mm thick for gland plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 500 A capacity extensible type four strip aluminium bus bars of high conductivity, DMC / SMC bus bar supports bottom base channel of MS section not less than 100 mmx 50 mm x 5 mm thick, entire panel shall have a common GI earth bar 25mm x 5mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of aluminium bus bars and control wiring with 2.5 sq. mm. PVC insulated copper conductor S/C cable, cable alleys, cable gland plates in two half, i/c Foundation and providing and fixing of following switchgear and components complete as required. (Essential Panel)	1	Job	378282.00	378282.00	MR
	Incomer					
	400 A Open execution manual changeover switch disconnecter with operating handle kit - 1 No.					
	400 A, FP, 36 kA, MCCB thermo magnetic release type with spreader link & ROH - 01 No.					
	1 set of 400/5 A ratio CTs					
	1 Set of LED type indicating lamps (RYB) with 2 Amps SP MCBs for Instrument Protection					
	Multi Function Meter -1 no					
	Busbars and their ratings					
	500 A 4 strip aluminium busbars - 100 % Neutral					
	Outgoing					
	1) 400 A, FP, 36 kA MCCB,thermo magnetic release type with spreader link & ROH - 1 No.					
	2) 250 A, FP, 36 kA MCCB,thermo magnetic release type with spreader link & ROH - 1 No.					
	3) 100 A, FP, 36 kA MCCB,thermo magnetic release type with spreader link & ROH - 2 Nos.					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	4) 63 A, FP, 36 kA MCCB,thermo magnetic release type with spreader link & ROH - 4 Nos.					
24.3	Supplying, installation, testing & commissioning of cubical type outdoor type LT feeder pillar suitable for 415V, 3 Phase, 4 Wire 50 Hz AC supply system of suitable size fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, 3mm thick for gland plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 800 A capacity extensible type four strip aluminium bus bars of high conductivity, DMC / SMC bus bar supports bottom base channel of MS section not less than 100 mmx 50 mm x 5 mm thick, entire panel shall have a common GI earth bar 25mm x 5mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of aluminium bus bars and control wiring with 2.5 sq. mm. PVC insulated copper conductor S/C cable, cable alleys, cable gland plates in two half, i/c Foundation and providing and fixing of following switchgear and components complete as required. (DG Panel)					
	Incomer					
	630 A Open execution manual changeover switch disconnecter with operating handle kit - 1 No.					
	630 A, FP, 36 kA, MCCB thermo magnetic release type with spreader link & ROH - 01 No.					
	1 set of 400/5 A ratio CTs					
	1 Setof LED type indicating lamps(RYB) with 2 Amps SP MCBs for Instrument Protection					
	Multi Function Meter -1 no	1	Job	303819.00	303819.00	MR
	Busbars and their ratings					
	800 A 4 strip aluminium busbars - 100 % Neutral					
	Outgoing					
	630 A, FP, 36 kA, MCCB thermo magnetic release type with spreader link & ROH - 02 Nos.					
	1)320 A, FP, 36 kA MCCB,thermo magnetic release type with spreader link & ROH - -1 nos.					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

24.4	Supplying, installation, testing & commissioning of cubical type outdoor type LT feeder pillar suitable for 415V, 3 Phase, 4 Wire 50 Hz AC supply system of suitable size fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, 3mm thick for gland plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 300 A capacity extensible type four strip aluminium bus bars of high conductivity, DMC / SMC bus bar supports bottom base channel of MS section not less than 100 mmx 50 mm x 5 mm thick, entire panel shall have a common GI earth bar 25mm x 5mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of aluminium bus bars and control wiring with 2.5 sq. mm. PVC insulated copper conductor S/C cable, cable alleys, cable gland plates in two half, i/c Foundation and providing and fixing of following switchgear and components complete as required. (VRV Panel)					
	Incomer					
	250 A, FP, 36 kA, MCCB thermo magnetic release type with spreader link & ROH - 01 No.					
	1 set of 400/5 A ratio CTs					
	1 Set of LED type indicating lamps(RYB) with 2 Amps SP MCBs for Instrument Protection					
	Multi Function Meter -1 no					
	Busbars and their ratings					
	300 A 4 strip aluminium busbars - 100 % Neutral					
	Outgoing					
	4) 63 A, FP, 36 kA MCCB, thermo magnetic release type with spreader link & ROH - -6 nos.					
		1	Job	208322.00	208322.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

24.5	Supplying, installation, testing & commissioning of cubical type outdoor type LT feeder pillar suitable for 415V, 3 Phase, 4 Wire 50 Hz AC supply system of suitable size fabricated in compartmentalized design from CRCA sheet steel of 2 mm thick for frame work and covers, 3mm thick for gland plates i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having 200 A capacity extensible type four strip aluminium bus bars of high conductivity, DMC / SMC bus bar supports bottom base channel of MS section not less than 100 mmx 50 mm x 5 mm thick, entire panel shall have a common GI earth bar 25mm x 5mm at the rear with 2 Nos. earth stud, solid connections from main bus bar to switch gears with required size of aluminium bus bars and control wiring with 2.5 sq. mm. PVC insulated copper conductor S/C cable, cable alleys, cable gland plates in two half, i/c Foundation and providing and fixing of following switchgear and components complete as required. (VRV Panel for Auditorium Hall)					
	Incomer					
	100 A, FP, 36 kA, MCCB thermo magnetic release type with spreader link & ROH - 01 No.					
	1 set of 400/5 A ratio CTs					
	1 Setof LED type indicating lamps(RYB) with 2 Amps SP MCBs for Instrument Protection					
	Multi Function Meter -1 no					
	Busbars and their ratings					
	200 A 4 strip aluminium busbars - 100 % Neutral					
	Outgoing					
	4) 63 A, FP, 36 kA MCCB,thermo magnetic release type with spreader link & ROH - -4 nos.					
	UG Cabling					
24.6	Supplying of following size ISI marked XLPE insulated and PVC sheathed aluminium conductor armoured U.G. cable of 1.1 KV grade as required.					
24.6.1	3X 10 sq mm	1000	Mtr	271.00	271000.00	MR
24.6.2	3½X 35 sq mm	200	Mtr	654.00	130800.00	MR
24.6.3	3½X 150 sq mm (Essential panel +	400	Mtr	2288.00	915200.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	VRV panel)					
24.6.4	3½X 185 sq mm (Non Essential Panel + DG Panel)	250	Mtr	2894.00	723500.00	MR
24.6.5	3½X 300 sq mm (Transformer)	60	Mtr	4576.00	274560.00	MR
24.7	Supplying of following size ISI marked XLPE insulated and PVC sheathed copper conductor armoured U.G. cable of 1.1 KV grade as required.					
24.7.1	4 X 16 sq.mm	200	Mtr	2501.00	500200.00	MR
24.8	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.					
24.8.1	Upto 35 sq. mm	1000	Mtr	453.00	453000.00	10.1.1
24.8.2	Above 95 sq. mm and upto 185 sq. mm	500	Mtr	497.00	248500.00	10.1.3
24.8.3	Above 185 sq. mm and upto 400 sq. mm	40	Mtr	564.00	22560.00	10.1.4
24.9	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/ HUME/ METAL pipe as required.					
24.9.1	Upto 35 sq. mm	200	Mtr	47.00	9400.00	10.5.1
24.9.2	Above 95 sq. mm and upto 185 sq. mm	100	Mtr	97.00	9700.00	10.5.3
24.10	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing masonry open duct as required.					
24.10.1	Upto 35 sq. mm	50	Mtr	36.00	1800.00	10.6.1
24.10.2	Above 95 sq. mm and upto 185 sq. mm	50	Mtr	80.00	4000.00	10.6.3
24.11	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.					
24.11.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	150	Mtr	64.00	9600.00	10.7.1
24.11.2	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40x3mm MS flat clamp)	50	Mtr	180.00	9000.00	10.7.3
24.11.3	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	20	Mtr	271.00	5420.00	10.7.4
24.12	Supplying and fixing cable route marker with 10 cm X 10 cm X 5 mm thick G.I. plate with inscription there on, bolted /welded to 35 mm X 35 mm X 6 mm angle iron, 60 cm long and fixing the same in ground as required.	35	Each	598.00	20930.00	10.10

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

24.13	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.					
24.13.1	3 X 10 sq. mm (22mm)	55	Each	312.00	17160.00	11.1.7
24.13.2	4 X 16 sq. mm (28mm)	16	Each	366.00	5856.00	11.1.33
24.13.3	3½ X 35 sq. mm (32mm)	4	Each	437.00	1748.00	11.1.21
24.13.4	3½ X 150 sq. mm (50mm)	8	Each	798.00	6384.00	11.1.26
24.13.5	3½ X 185 sq. mm (57mm)	6	Each	1001.00	6006.00	11.1.27
24.13.6	3½ X 300 sq. mm (70mm)	4	Each	1336.00	5344.00	11.1.30
24.14	Providing, laying and fixing following dia G.I. pipe (medium class) in ground complete with G.I. fittings including trenching (75 cm deep) and re-filling etc as required					
24.14.1	100 dia	100	Mtr	1918.00	191800.00	15.13.3
	Total=				5245585.00	
25	EARTHING & LIGHTNING ARRESTER					
25.1	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required	30	Set	8351.00	250530.00	5.4
25.2	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	6	Set	15004.00	90024.00	5.6
25.3	Earthing with G.I. earth pipe 4.5 Meter long, 40 mm dia including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal/ coke and salt as required.	2	Set	7658.00	15316.00	5.2
25.4	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	100	Mtr	755.00	75500.00	5.1
25.5	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	400	Mtr	287.00	114800.00	5.15

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

25.6	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	50	Mtr	1638.00	81900.00	5.10
25.7	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	120	Mtr	1246.00	149520.00	5.14
25.8	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong at top, with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required.	8	Each	609.00	4872.00	6.1
25.9	Jointing copper / G.I. tape (with another copper/ G I tape, base of the finial or any other metallic object) by riveting / nut bolting/ sweating and soldering etc as required.	200	Each	139.00	27800.00	6.3
25.10	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For horizontal run)	500	Mtr	148.00	74000.00	6.6
25.11	Providing and fixing G.I. tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For vertical run)	150	Mtr	238.00	35700.00	6.7
25.12	Providing and fixing testing joint, made of 20 mm X 3 mm thick G.I. strip, 125 mm long, with 4 nos. of G.I. bolts, nuts, check nuts and spring washers etc. complete as required.	8	Each	140.00	1120.00	6.10
25.13	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	100	mtr	221.00	22100.00	6.11
	Total=				943182.00	
26	SUBSTATION EQUIPMENTS					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

26.1	Supplying, installation, testing and commissioning of following capacity (continuous loading) BEE 5 Star rated (Corresponding Level as per BIS amended upto date of receipt of tender) , 11/0.433 KV step down, 3 Phase, 50 Hz, Dyn 11 vector group, ONAN (Oil Natural Air Natural) copper wound transformer (Electrolytic grade 99.9% pure copper, Core made of first grade Cold Rolled Grain Oriented (CRGO) Core grade MOH or better, suitable for out door/indoor applications with Offload Tap Changer/ On Load Tap Changer (OLTC) (below 500 KVA offload and above 500 KVA On Load Tap Changer) on HV side having AVR relay and Remote Tap Changer Control (RTCC) for automatic sensing of incoming voltage, automatic operation of OLTC and facility for remote and manual operation of OLTC HV side in range of +5% to -15% in steps of 2.5%, having cable end boxes on HV side suitable for 3x300 sq.mm XLPE cable of 11 KV grade, including bus trunking arrangement on LV side including supplying and laying of copper conductor multicore control cable from transformer to HT breaker/panel for safety tripping, complete with all accessories and safety provisions as per relevant IS Code including first filling of filtered dehydrated oil, i/c supplying and grouting of suitable M.S. Channel with all accessories and transformer shall be confirming to IS : 2026 (Part 1 to Part 5), IS : 1180 and as per CPWD specifications complete in all respects etc as required at site. The maximum flux density in any part of the core and yoke at rated voltage and frequency shall be such that the flux density with + 12.5 percent combined voltage and frequency variation from rated voltage and frequency does not exceed 1.9 Tesla. The permissible temperature-rise shall not exceed 35 0C for oil and 40 dg. C up to 200 KVA and 40 0C for oil and 45 0C for above 200 KVA for winding. Inside of tank shall be painted with varnish or liquid resistant paint. For external surfaces one coat of thermo setting powder paint or one					
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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	coat of epoxy primer followed by two coats of polyurethane base paint shall be used. IS: 1180 (Part 3) shall be referred to for paint thickness for normal to medium corrosive atmosphere. For highly polluted atmosphere and special application external paint work shall be as per direction of Engineer-in-Charge. Design ambient condition : a) air temperature 50 °C, b) Relative Humidity 90 % Max, c) Seismic Zone as per location of site, d) Altitude as per location/site. Noise level Shall not exceed limits as per NEMA TR-1 with all accessories running measured as per IEC 551 / NEMA standard. The					
	transformer should have QR code which should contain drawing, test report OEM manual, Geo- Tag of manufacturing location etc. Marking Each transformer shall be provided with rating plate made of anodized aluminium/ stainless steel material securely fixed on the outer body, easily accessible, as per IS: 1180 Part-3. The entries on the rating plate shall be indelibly marked. Fitting and Accessories : The following fittings shall be provided:- a) Two earthing terminals with the earthing symbol b) Oil level gauge indicating oil level at minimum, 30°C and maximum operating temperature; c) Air release device (for non-sealed type transformers) d) Rating and terminal marking plates; e) Silica gel breather f) Drain-cum-sampling valve (¾" nominal size thread, IS 554) preferably steel with plug for three phase transformers; g) Thermometer pocket with cap; h) Oil filling holes having (1¼" nominal size thread) with cover (for sealed type transformers without conservator); i) Lifting lugs for the complete transformer as well as for core and winding assembly; j) Pressure relief device or explosion vent above 200 kVA; k) One filter valve on the upper side of the tank (for transformers above 200 kVA); l) Unidirectional flat rollers (for transformers above 200 kVA); m) Inspection hole (for transformers above 200 kVA); n) HV					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	side neutral grounding strip (where one of the HV bushing terminal is connected to earth); o) Buchholz relay for transformers above 800 kVA. p) Arcing horns or suitable rating lightning arrestors for HT side – 3 Nos. q) Bird guard; r) Oiltemperature indicator and winding temperature indicators for transformers above 200 kVA with suitable tripping mechanism above permissible limit s) Jacking pads (for transformer above 1 600 kVA); t) Additional Neutral separately brought out on bushing for earthing. u) Magnetic oil level gauge (for transformer above 1600 kVA) with low oil level alarm contact; v) Non return valve (for conducting pressure test); w) Pressure relief device or explosion vent x). Monogram Plate y) Inspection cover z). Detachable type radiators with top and bottom shutoff valve. aa) Oil Conservator with Oil level indicator, minimum level marking and drain plug for all transformers of capacity 50 KVA and above. bb) Necessary hardware, clamps, lugs etc. for termination on HV/MV etc. for all transformers.					
26.1.1	400 KVA	1	Each	995660.00	995660.00	24.9.4
26.2	Providing and laying in position cement concrete 1:3:6 (1 cement : 2 coarse sand : 6 graded stone aggregate 20 mm nominal size) in foundation of Transformer etc including form work etc as required.(Pedestal of overall size 1.50mtr x 1.50mtr x 2.0 mtr-1no)	4.5	Cum	7294.70	32826.00	Civil DSR'23, Vol 1/4.1.5
26.3	Providing brick work (in width 225 mm or more) with F.P.S. bricks of class designation 7.5 in cement mortar 1:4 (1 cement : 4 coarse sand) at all levels.	10.0	Cum	7370.65	73707.00	Civil DSR'23, Vol 1/6.1.1
26.4	Providing 15mm thick cement plaster of mix 1:4 (1 cement : 4 fine sand) at all levels.	30	sqmtr	399.45	11984.00	Civil DSR'23, Vol 2/13.2.1
26.5	Supplying and fixing of 11 mtrs long WPB GI pole of size 160mm x 152 mm having sectional weight of 32.81 Kg/mtr complete with base plate of size 500 x500 x10 mm thickness (19.62 Kg) and 2 Nos 12 mm dia earth stud welded with the pole & erection of GI pole of length exceeding 10 mtrs	2	Each	60721.00	121442.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	in cement concrete 1:3:6(1 cement,3 coarse sand,6 graded stone aggregate 40 mm nominal size)foundation i/c excavation & refilling etc as required.					
26.6	S/F of GI channel iron ISMC 100 mm x 50 mm having sectional weight of 9.56 Kg/Mtr for use as cross arm for mounting HT metering Unit, LA & AB switch i/c clamp bolt & nuts and painting etc as reqd.	40	Mtr	1689.00	67560.00	MR
26.7	Supplying and erection of galvanised stay set for 11 KV over head lines complete with 19/ 20 mm dia X 1.8 metres long stay rod, anchor plate of size 45 cm X 45 cm X 7.5 mm thick, thimble, stay clamps, turn buckle (20 mm X 600 mm), 7/ 4.00 mm dia G.I. stay wire and 11 KV strain insulator etc in cement concrete 1:3:6 (1cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc.as required.	2	Set	6130.00	12260.00	14.1
26.8	S/F 11 KV 400 Amps single air break. Off load, fitting type, pole mounting out door type horizontal mounting gang operated triple pole switch(polymer type), earth pole on hot dip galvanized channel iron base consisting of 3 Nos. of 11 KV polymer type HT pin insulator having non ferror knife & spring loaded contacts arcing horns capable of breaking the magnetizing current complete with terminal connectors for XLPE cable conductors i/c phase coupling square rod / connecting angle level medium class 25mm dia GI pipe for operating handle coupled with suitable GI pipe complete with pad locking arrangement including 95 sqmm aluminium lugs in both ON & OFF etc. confirming to IS : 1818/1972 complete with GI bolts nuts & washer etc as reqd.	1	Set	23409.00	23409.00	MR
26.9	Supplying and erection of a set of cross bracing frame work for 11 KV over head line double pole structure having four members fabricated out of 50 mm X 50 mm X 6 mm angle iron to form a rectangle of minimum size 1400 mm width X 2500 mm height , complete with 50 mm X 6mm M.S. flat iron clamps, bolts and nuts including	1	Set	9084.00	9084.00	14.8

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	drilling holes for insulator pins, bolts and nuts etc (as per drawing) and painting with primer and finish paint as required.					
26.10	S/F of 11 KV Horn gap fuse unit complete with hot dip galvanized channel iron base & with suitable HT fuse element for the transformer HT current & complete with GI bolts, nuts & washer etc . as required.	1	Set	13375.00	13375.00	MR
26.11	Supplying and erection of three piece nonlinear resistor polymer type lightning arrestor suitable for 3 wire, 12 KV overhead lines with rated voltage 12 KV (rms) with a nominal discharge current rating of 10 KA and complete with galvanised clamping arrangement, G.I. bolts, nuts, washers etc. as required.	1	Set	12813.00	12813.00	MR
26.12	Supplying and erection of 11 KV pin insulator complete with large steel head G.I. pin, nuts, washers etc. as required	12	Each	370.00	4440.00	14.10
26.13	Supplying and erection of 11 KV disc insulator for 11 KV over head lines with galvanised insulator fittings, ball and socket type and complete with galvanised strain clamps, bolts, nuts, washers etc. as required.	9	Set	1086.00	9774.00	14.11
26.14	Providing jumpering connection of 11 KV 4 pole structure HT PIN insulator to AB switch, AB switch to HG fuse, HG fuse to HT bushing of transformer with 100 sq.mm AAC conductor etc as reqd. the conductor between HG fuse to HT bushing of transformer must have encapsulated with Tri-colour sleeve etc as reqd.	1	Job	7042.00	7042.00	MR
26.15	Supplying and installation of a standing angle iron welded frame structure made out of 50 mm x 50 mm x 6 mm thick MS angle, suitable intermediate member of 1.5 mtr long and height of the angle iron should be 1.5 mtr from floor level and suitable fixed in C.C (1:3:6) foundation grouted in side of substation yard i/c 3 nos MS holding hook for hanging 3 Nos fire buckets of 9 liters capacity each of painted with Red on outside, white in side, with inscription – FIRE, painted the structure with synthetic enamel paint over a coat of red oxide etc as reqd.	2	Job	4861.00	9722.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

26.16	Supplying and laying / spreading of graded stone aggregate of size range 40 to 60 mm in 100mm thick in side the substation yard after spreading & leveling 150 mm thick of fine sand etc as reqd	40	Sqmtr	1888.00	75520.00	MR
26.17	Supplying & storing (at site) of 11 KV grade Rubber Hand Glove as reqd.	2	Each	439.00	878.00	MR
26.18	Supplying and Storing (at site) of 11 KV grade Discharge Rod along with necessary wires etc as reqd	1	Each	8953.00	8953.00	MR
26.19	Providing and fixing H.T. danger notice plate of 250 mm X 200 mm, made of mild steel, at least 2 mm thick, and vitreous enamelled white on both sides, and with inscription in single red colour on front side as required.	2	Each	340.00	680.00	2.22
26.20	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick, and vitreous enamelled white on both sides, and with inscription in single red colour on front side as required.	2	Each	315.00	630.00	2.21
26.21	P/F 2.4 mtr height wire mesh metal fencing covering of the transformer platform & DP structure with single iron post of 2.9 mtr long each of size 50 x 50 x 6mm placed at distance of not more than 2mtr embedded in cement concrete 1:2:4 (1: cement 2:coarse sand & 4: graded stone aggregate) blocks 40 x 30cm & duly fixed with MS wire mesh of size 1"x2" made of 10 SWG wire with angle iron of 25 x 5mm cross and vertical member with front open able hinged type double leaf gate of 2.4mt x 5mt made of iron angle 40 x 40 x 6 mm & flat 25mm x 5mm for cross members duly welded complete with locking arrangement i/c 50 x 50 x 6 mm angle iron support (2 Nos) painting with Alu. paint over one coat of red-oxide primer etc as reqd.	60	Sqmtr	2711.00	162660.00	MR
	Total=				1654419.00	
27	DG SET					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Supplying, Installation, Testing & Commissioning of 'Silent Type Diesel Generating set as per CPCB IV + or better norms along with having Prime Power Rating of KVA as below, 415 volts at 1500 RPM, 0.8 lagging power factor at 415 V suitable for 50 Hz, 3 phase system & for 0.85 Load Factor, including testing at factory and site with fuel, load for test and other necessary arrangements Complete as per CPWD specifications, should have QR code which should contain drawing, test report OEM manual, Geo-Tag of manufacturing location, rating plate as per relevant IS Code etc. and consisting of the followings:					
8.1	(A) Diesel Engine: Turbocharged Diesel engine 4 stroke water cooled, multi cylinder, dynamically balanced fly wheel, electric start of suitable BHP at 1500 RPM suitable for above output of alternator at 40 °C, 50% RH & at 1000 Meter MSL, capable of taking 10% over loading for one hour after 12 hours of continuous operation. The engine will be with Electronic governor, Dry type Air filter with service indicator, first filling of engine fuel (after commissioning) lubricating Oil, Coolant and other consumables complete with all the required accessories, the Electronic governor shall be as per ISO 8528. The engine shall comply to the latest CPCB norms (CPCB IV + or better) and Conforming to BS 5514, BS 649, IS 10000, IS 10002, IS 13018 and as per CPWD specifications.	1	Each	885383.00	885383.00	29.1.8
	(B) Engine mounted Instrument Panel fitted with and having digital display Plate for following: (i) Start-stop switch with key (ii) Water temperature indication (iii) Lubrication oil pressure indication (iv) Lubrication oil temperature indication (v) Battery charging indication and Voltage indication (vi) RPM indication (vii) Over speed indication (viii) Low lubrication Oil trip indication (ix) Engine Running Hours indication (x) Fuel Level					
Correction – Nil, Insertion – Nil, Deletion – Nil						
AE(P)(C)			AE(P)(E)		EE(C)	

	(C) Alternator: Synchronous alternator rated of appropriate KVA, 415 volts at 1500 RPM, 3 phase 50 Hz, AC supply with 0.8 lagging power factor at 40 °C, 50% RH & at 1000 Meter MSL. The alternator shall be having Screen Protected Drip Proof (SPDP) enclosure IP23, brushless, continuous duty, dynamically balanced rotor, capable of taking 10% over loading for one hour after 12 hours of continuous operation, self cooled, self-excited and self-regulated through AVR conforming to IS13364(Part 2)/IS: 4722/BS 2613 suitable for tropical conditions and with class- H insulation. (D) Base Frame & Foundation: Both the engine and alternator shall be mounted on suitable base frame made of MS channel with necessary reinforcement which shall be installed on suitable cement concrete foundation and vibration isolation arrangement as per recommendations of manufacturer. (E) FUEL TANK: Daily service fuel tank of suitable liters capacity as per CPWD Specifications, fabricated out of 3 mm thick M.S. sheet complete with all standard accessories and fuel piping between fuel tank and diesel engine with MS class 'C' pipes of suitable dia. Complete with valves, level indications & accessories as required as per specifications. (F) Exhaust System: Dry exhaust manifold with hospital type exhaust silencer and catalytic convertor. (G) Starting System: 12V/24V DC starting system comprising of starter motors: voltage regulator and arrangement for initial excitation complete with suitable numbers of batteries (180 AH capacity lead acid SMF type) as required as per specifications. The battery shall be housed inside the acoustic enclosure of DG Set.					
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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	(H) Acoustic and weather proof enclosure with arrangement for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air in to the atmosphere and the temperature rise inside the enclosure, noise level outside enclosure. The acoustic enclosure should be suitable for cable connection/connection through bus-trunking. Such arrangements on acoustic enclosure should be water proof & dust-proof conforming to IP-65 protection. The enclosure shall be as per CPCB IV + or better norms etc. and as per CPWD specifications. (I) AMF Panel: Free standing floor mounted IP 42 automatic mains failure control panel including auto by-pass, suitable for KVA as below for silent type DG set complete with relays, timers, set of CTs for metering & protection and energy analyser to indicate currents, phase and line voltages, frequency, power factor, KWH, Kilo Volt Ampere Reative Hour (KVARH), KVA (Phase & Total), KW & provision for overload, short circuit, restricted earth fault, under frequency, power (aluminium) and control (copper) cabling of suitable size upto 15 meter between AMF panel, LT Panel and DG Set including connection interconnection etc. as required, all complete and inter locking and communication/ Ethernet /RS485/SNMP port open protocol for BMS integration including suitable software, the panel shall be of DG Set OEM make etc. as per approved by Engineering in charge and including the following:					
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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	1. Suitable numbers and appropriate capacity 4 pole motorised electrically operated draw out with cradle type 3 position ACB/ MCCB with electronic release for O/C & E/F and shunt trip.2. Auto/Manual/Test/Off selector switch3. Protection for under and over voltage phase reversal (2 nos Over voltage relay, 2 Nos. reverse power relay and 2 Nos. under voltage relay).4. 3 Sets of current transformers 15 P 10 accuracy for protection and 15 VA class-I for metering.5. Energy analyser unit to indicate current, Voltage (LN & L_L), kW, kVA (Phase & Total), Frequency, KWH, PF).6. LED Indicating lamps for load on mains and load on set7. Fuse/ MCB for instruments					
	8. Battery charger, complete with transformer/ rectifier, D.C. voltmeter and ammeter, selector switch for trickle, off and boost and current adjustment. 9. Main supply failure monitor 10. Supply failure timer 11. Restoration timer 12. Control unit with three impulse automatic engine start/stop and failure to start lockout. 13. Impulse counter with locking and reset facility. 14. ON/OFF/Control circuit switch with indicator					
	15. Audio/Video annunciation for (i) High water temperature (ii) Low lubricating oil pressure (iii) Engine over speed (iv) Engine fails to start (v) Full load/maximum load warning 16. Protection for over/under Frequency, Loss of AC sensing, Over Current, Unbalancing load with suitable number of relays and accessories 17. Maintenance notification based on Engine Run Hour & due date.					
	18. Load Management through PLC to achieve auto opening and closing of incomer breakers, bus coupler switching of essential panel , interlocking providing signal to AMF Panel for load status and AMF shall give command to DG Set to auto start / auto stop depending upon load status					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	and requirement etc. and necessary hardware and software required to perform the operation shall be provided by the contractor including all control wiring.					
27.1.1	125 KVA					
	Total=				885383.00	
28	IP BASED EPBAX SYSTEM					
28.1	Supplying, installation, testing and Commissioning of IP at its core with IP switching technology and 100% non blocking communication system with 04 Port Voicemail, 04 Port FXS, 04 Port FXO, 1 PRI Trunk lines (30 Channels) Circuit with CLIP Facility, min 100 IP users License with provision for further additions, 100 analog users, 01 Number IP based Operator Console, 45 Party Conference, Speed Dial, Music on Hold, Internal/ External ring difference, Call Barring, Call Pickup. The system should be redundant which offer 100% duplication of power supply and CPU card and to match the hybrid IP-PBX as per technical specification including supporting accessories etc complete as required. The system should have valid TEC GR approval from DoT.	1	Each	1246949.00	1246949.00	38.2
28.2	Supplying, Installation, Testing & Commissioning of Type 1 IP Phone having 2 VoIP account, 120 x40 DOT matrix screen with backlight, Full HD duplex speaker phone, IPV6, Gigabit Ethernet, PoE etc. complete as required.	28	Each	11698.00	327544.00	38.3
	Total=				1574493.00	
29	CCTV & Networking					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

29.1	Supplying Installation Testing and Commissioning of 4MP IP IR Outdoor Bullet Camera having following specifications and features etc :- 1) Signal System: PAL/NTSC, Signal to Noise Ratio: > 50 dB, Camera should display Camera title, Date & Time in live & recorded video 2) Image Sensor: 1/2.8" or better progressive Scan CMOS get color image even at night condition (Minimum Illumination: 0.006 Lux@ F1.4, AGC ON, 0 lux with IR or better) True Day & Night High Performance Mechanical IR cut filter with auto switch, Integrated IR Source (Auto, Manual)- Inbuilt IR LED's with effective distance upto 50 meter or better and 30 meter for colour view in night, Imaging: 1/3s to 1/30000s electronic shutter support, Auto Gain Control, White Balance- Auto, Back Light Compensation, Multi zone Privacy Masking, HLC, Digital Watermarking. 3) Compression (Minimum): Video:- H.265 or better, Audio:- G.711U/A, G.711Mu, G.726, AAC, G.723 4) Wide Dynamic Range:- WDR (120dB or more) 5) Digital Noise Reduction:- DNR (3D) On/Off 6) Video Streaming & Frame Rates :- Triple streaming, configurable Main stream: 4MP (2560×1440)25/30fps Sub streams minimum: 720P@25/30 fps 7) Image Setting: Rotate Mode, saturation, brightness, contrast, sharpness adjustable through client software or web browser, Edge Analytics: Tripwire, Intrusion, Motion Detection 8) Cyber Security: AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, account lockout, video encryption, IP/MAC filtering, HTTPS, trusted upgrade 9) Onboard Storage: Camera should support built-in Micro SD/ SDHC/ SDXC Card slot upto 512 GB. It should be supplied with minimum 128GB memory Card. 10) Recording Management: Format SD, overwrite, storage management, video to NAS device, 11) Alarm Trigger : Motion/tampering detection; network disconnection detection; IP conflict						
Correction – Nil, Insertion – Nil, Deletion – Nil	AE(P)(C)		AE(P)(E)		EE(C)		

	detection; memory card state detection; memory space detection 12) Network Protocol: SFTP, IPv6, IPv4, DNS, RTCP, NTP, RTP, HTTP, HTTPS, SNMP TCP/IP, PPPoE, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, unicast, 13) System Capability: ONVIF, Camera shall support open source VMS 14) Ethernet: 1 RJ 45 10/100 Ethernet port 15) Audio : It should support 1 x Built-In Mic and 1/1 Alarm In/ Out for External Mic. and Speakers as per site requirement. 16) Power Input: The camera should support simultaneous dual power input—12 VDC (via power adapter) and PoE (802.3af)—to ensure continuous operation in the event of a failure in one power source. 17) Power Requirement: 12VDC/24 VDC/PoE(802.3af)/ePoE 18) Housing/ Enclosure:- IP67 weather proof, IK10, Metallic body 40.4.1 40.4.2 19) Operating Condition:- Ambient Temperature:- (-)05°C to 50°C, humidity 95% (max) (non-condensing) 20) IR life: 40000 hours or higher 21) Video Bit rate: 32 KBPS - 8 MBPS or better 22) Standards: BIS with ER, STQC Certified, CE, FCC and RoHS.					
29.1.1	4MP @ 25/30fps@1440P (2560 x 1440) Outdoor Bullet Camera with 2.8/3.6/6/8/12 mm fixed lens (as per site requirement)	19	Each	10063.00	191197.00	40.4.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

29.2	Supplying Installation Testing and Commissioning of 4MP IP IR Dome Camera having following specifications and features etc :- 1) Signal System: PAL/NTSC, Signal to Noise Ratio: > 50 dB, Camera should display Camera title, Date & Time in live & recorded video 2) Image Sensor: 1/2.8" or better progressive Scan CMOS to get color image even at night condition (Minimum Illumination: 0.006 Lux@ F1.4, AGC ON, 0 lux with IR or better) True Day & Night High Performance Mechanical IR cut filter with auto switch, Integrated IR Source (Auto, Manual)- Inbuilt IR LED's with effective distance upto 50 meter or better and 30 meter for colour view in night, Imaging: 1/3s to 1/30000s electronic shutter support, Auto Gain Control , White Balance- Auto, Back Light Compensation, Multi zone Privacy Masking, HLC, Digital Watermarking. 3) Compression (Minimum): Video:- H.265 or better, Audio:- G.711U/A, G.711Mu, G.726, AAC, G.723. 4) Wide Dynamic Range:- WDR (120dB or more). 5) Digital Noise Reduction:- DNR (3D) On/Off. 6) Video Streaming & Frame Rates :- Triple streaming , configurable Main stream: 4MP (2560×1440)25/30fps Sub streams minimum: 720P@25/30fps. 7) Image Setting: Rotate Mode, saturation, brightness, contrast, sharpness adjustable through client software or web browser, Edge Analytics: Tripwire, Intrusion, Motion Detection. 8) Cyber Security: AES 256-bit Encryption, Configuration encryption, trusted execution, Digest, security logs, account lockout, video encryption, IP/MAC filtering, HTTPS, trusted upgrade. 9) Onboard Storage: Camera should support built-in Micro SD/ SDHC/ SDXC Card slot upto 512 GB. It should be supplied with minimum 128GB memory Card. 10) Recording Management: Format SD, overwrite, storage management, video to NAS device, 11) Alarm Trigger : Motion/tampering detection; network disconnection detection; IP conflict detection; memory card state detection;					
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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	memory space detection. 12) Network Protocol: SFTP, IPv6, IPv4, DNS, RTCP, NTP, RTP, HTTP, HTTPS, SNMP TCP/IP, PPPoE, NFS, UDP, ICMP, SSL, DHCP, SMTP, RTSPS, unicast, 13) System Capability: ONVIF, Camera shall support open source VMS. 14) Ethernet: 1 RJ 45 10/100 Ethernet port. 15) Audio : It should support 1 x Built-In Mic and 1/1 Alarm In/ Out for External Mic. and Speakers as per site requirement. 16) Power Input: The camera should support simultaneous dual power input—12 VDC (via power adapter) and PoE (802.3af)—to ensure continuous operation in the event of a failure in one power source. 17) Power Requirement: 12VDC /24 VDC/PoE (802.3af)/ePoE. 18) Housing/ Enclosure:- IP67 weather proof, IK10, Metallic body. 19) Operating Condition:- Ambient Temperature:- (-)05°C to 50°C, humidity 95% (max) (non-condensing) 20) IR life: 40000 hours or higher. 21) Video Bit rate: 32 KBPS - 8 MBPS or better. 22) Standards: BIS with ER, STQC Certified, CE, FCC and RoHS					
29.2.1	4MP @ 25/30fps@1440P (2560 x 1440) Dome Camera with 2.8/ 3.6/ 6/8/12 mm fixed lens (as per site requirement).	50	Each	10365.00	518250.00	40.3.1
29.3	Supplying, Installation, Testing and Commissioning following capacity Surveillance grade Hard Disk with upto 256MB/s Transfer Rate, 256 MB Cache, 7200 RPM Disk Speed, 3.5 inch form factor, SATA Interface, BSMI, ICES-003/NNB-003, CE, FCC, KC, Maghreb, RCM, UKCA, VCCI, CB-Scheme, TUV, UL Certifications.					
29.3.1	8 TB (Terabytes)	4	Each	20119.00	80476.00	40.12.3
29.4	Supplying Installation Testing and Commissioning of 24 port Cat6 Patch Panel loaded. Must be of 1U height with clear label holders and white label with the panel. 24 Ports Cat-6 Patch Panel should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D etc. complete as required.	5	Each	5278.00	26390.00	39.11

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

29.5	Supplying, Installation, Testing and commissioning of following CAT6 Patch Cord should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D etc. complete as required.					
29.5.1	Copper Patch Cords of length 1m (3ft)	200	Each	151.00	30200.00	39.12.1
29.5.2	Copper Patch Cords of length 3m (10ft)	100	Each	227.00	22700.00	39.12.2
29.6	Supplying, installation, Testing and commissioning of following capacity 24 port Layer 2 indoor Network Switch having features and specifications etc. as mentioned here under: At least 24 X RJ-45 Gigabit Ethernet Ports and additional 2 X 10G Base -T with 4 X SFP Ports with non-blocking architecture by having Switching capacity of min. 128Gbps and packet forwarding rate of 95Mpps or higher, 16K MAC table. Console Port, USB port, Stacking support of min. 4 units per stack. Internal dual AC Power supply, STP, RSTP, MSTP, BPDU Filter, BPDU Restriction, Min. 9K Jumbo Frame, LBD, IGMP Snooping V1/V2/V3, MLD Snooping V1/V2. IGMP /MLD Groups 1K or more, IPv4/IPv6 Loopback Interface, 16 L3 IP Interface, Ipv6 ND, VRRPv3, UDP Helper, ECMP. VLAN: 802.1Q, Port based, Q-in-Q, Multicast VLAN, Protocol VLAN, VLAN Trunking, DHCP Snooping, Server, server Screening. RADIUS , TACACS+ Authentication, QoS: 802.1P, 8 queues per port, QoS : WRR, Strict+WRR, WRED, 802.1p. ACL: MAC based, IPv4C IPv6, TCP/UDP Port number, time based ACL, TFTP Client, SNMP V1, v2c, v3, SNMP traps, RMON, DHCP server, relay, client, LLDP, LLDP-MED, OAM, Dying Gasp, 802.3ah, sflow, RIP, OSPF v2/v3, policy based route, SSL, SSH. 6 kV surge protection on all Gigabit Ethernet ports and on all GE RJ-45 access ports. Certifications: FCC, CE marked, UL/EN, RoHS and relevant MTCTE (TEC)/BIS compliance/Certification as applicable etc. complete as required.					
29.6.1	24 port PoE Layer 2 Network Switch with PoE Support of 370W or higher with each copper port supporting	4	Each	125393.00	501572.00	39.3.1

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	802.3at PoE+ min.					
29.6.2	24 port Layer 2 Non-PoE Network Switch Each	6	Each	86163.00	516978.00	39.3.2
29.7	Supplying Installation Testing and Commissioning of following Channel Network Video Recorder (NVR) with camera licenses to record for all channels having specifications and features etc as mentioned below : 1) Network Video Recorder Embedded/ Installed OS (Linux) along with Camera Licenses to record per NVR and to provide a live view, storage and simultaneously Multi-channel playback of all IP camera or more and must be ONVIF with minimum support of 384 Mbps incoming Bandwidth. 2) NVR should support video compressions : H.265 or better, H.264, MJPEG. 3) Must support 1 channel RCA Input, 2 channel RCA Output for Two-way Talk with G.711U/A, G.711u, PCM, G726 audio compressions. 4) Intelligent auto power on when power resumes after power outage. 5) Storage: It should support minimum 8 SATA Slots with 16TB capacity/ Slot and RAID support of RAID 0/1/5/6/10 (4 SATA (32 Channel) & 8 SATA slot for 64 Channel). 6) Connectivity Interface : 2 Nos. x 10/100/1000 Mbps Ethernet Ports, 1x RS485, 1x RS232, 1x eSATA Port 7) Backup Interface : Its should have 4 Nosx USB port (2x USB3.0, 2xUSB2.0 8) Video Output Ports: 2x HDMI and 2 VGA 9) Alarm Ports: It should have 16/8 Ch In/ Out ports to connect various type of external sensors and output devices like hooter/ Siren etc. 10) Email & SMS Alert options: Option for SMS/ Email Alerts to minimum 5 designated mobile number for power failure, HDD failure, vandalism, tempring, network disconnection and panic 11) Web & Mobile Application: Web, Mobile app (For iPhone, iPad, Android Phone) for alerts and viewing. 12) Protocols: HTTP, HTTPS, TCP/IP, IPv4/IPv6, UDP, DHCP, DNS, SMTP, UPnP, IP Filter, PPPoE, FTP, DDNS, Alarm Server, IP Search, Multicast, Auto Registration, ONVIF (Profile T, Profile S, Profile G), CGI, SDK and OEM					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Cloud for remote monitoring without any public IP need. 13) Standards: CE, FCC, RoHS, BIS Certified 14) Power Supply : Should support AC100-240V, 50/60Hz Power supply.5) Operating Condition : -5°C to 50°C, humidity 90% (max) (non-condensing) 16) The VMS application shall support all the features & functionalities of the offered cameras. 17) VMS should consist Licenses for all channels to record Cameras with General, motion detection, intelligent, alarm and POS recording modes. VMS should be provided with Camera Licenses , with no dependency of VMS licenses by binding with the MAC address of the cameras to achieve the functionality. 18) The NVR OEM shall be responsible for providing a mobile application compatible with both Android and iOS devices, enabling remote monitoring and playback of cameras/NVR footage. 19) The OEM must provide its own DDNS server hosted in India, eliminating the need for a public IP address for remote monitoring over the Internet. 20) Must support Continuous, Alarm, Motion, Instant,Panic Recording Mode 21) It should support Resolution: 32MP; 24MP; 16MP;12MP; 8MP; 5MP; 4MP; 1080p; 720p; D1; CIF; QCIF 22) When alarm recording is enabled and an event occurs, you can click the alarm icon on monitoring page to view the alert details. The snapshot function is supported on monitoring and playback page 23) The Network Video Recorder (NVR) shall be configured to send email whenever a system message is created or an alarm event occurs. The email server shall be a valid SMTP server.					
	Each recipient email address shall be configured to receive any combination of critical, warning, or informational messages or alarm notifications. When an alarm occurs, the email message includes the NVR name, time of alarm and a list of camera that is configured to record upon alarm 24) It should have Web and GUI interface. 25) Built-In Artificial Intelligence: NVR should have built-in AI :- 2 Channel					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	face detection and recognition, - Minimum 4 Channel perimeter protection, - Minimum 8 Channel Smart Motion Detection 26) Face Recognition Database Capacity: It should support total Blacklist and Whitelist capacity of Minimum 20,000 Faces or more with Face Detection speed of 12 face images/sec and facility to add Name, gender, birthday, address, credential type, credential No., countries & regions and state to each face image. 27) Face & Human Attributes Search: Search Pictures/ Video by Gender, age group, glasses, expressions, face mask, beard, Top color, top type, hat, bag, age, gender and umbrella. 28) ANPR Capability: It should support ANPR Camera with License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle registration location etc vehicle attributes. 29) Alarm Notifications based on: Motion detection, video tampering, video loss, scene changing, PIR alarm, Camera external alarm, Face detection, face recognition, perimeter protection (intrusion and tripwire), ANPR, people counting, stereo analysis, crowd distribution, heat map, Disk Full, Storage Error, IP Conflict and abnormal behavior of fan, cybersecurity exception 30) Alarm Notification should be linked with Recording, snapshots, Camera external alarm output, buzzer, logs, presets and email. 31) General AI Based Search: Search Pictures by channel, time, event type, target classification (Fall Detection, People Approach Detection, People No. Exception Detection, People Staying Detection, Violence Detection. 32) Smart playback function: Should support smart search for the selected area in the video and smart playback to improve the playback efficiency 33) VCA (Video Content Analytic): Should support multiple video content analytics based on camera analytics 34) Analytics by NVR: Perimeter protection and face recognition.					
29.7.1	64 Channel Network Video Recorder (NVR) having display split :- Main	2	Each	82600.00	165200.00	40.11.2

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	screen: 1/4/8/9/16/25/36/64, 2nd screen: 1/4/8/9/16					
29.8	Supplying, Installation, Testing and commissioning of indoor Wireless Access Point for High density use having features and specifications etc. as mentioned here under- WiFi6 802.11ax 574Mbps (2.4GHz) + 2402Mbps (5GHz), WIFI 6 Certified / WiFi Alliance, MG 2.5G LAN POE Port having sonsole management function, factory reset, WPA/WPA2/WPA3™ Personal/Enterprise, WEP 64/128-bit, SSID broadcast disable, MAC address access control, Internal RADIUS server, SNMP, Customizable Captive Portal, Auto Channel, Works as Access Point, WDS, WDS with AP/Wireless Client/ MESH Web (HTTP), Secure Socket Layer (SSL), Traffic control, Support ATF/Fast Roaming/Band Steering, Supports enhanced security – WPA-PSK/WPA2 PSK/WPA3-PSK and RADIUS client, and Cipher negotiation, and MAC/ IP ACL for networks, Certifications: FCC, CE marked, UL/EN, RoHS and relevant MTCTE (TEC)/BIS compliance/Certification as applicable. Works as Standalone, Compatible with S/W & H/W Controller with additional features like - Real-Time Monitoring and Alerts, Rich Advanced Features, Centralized Device Management, Role-Based Administration, Real-Time Monitoring, VLAN and Access Control, Auto RF Management and Bandwidth Optimization, Multi-SSID and Captive Portal Authentication, etc. complete as required.	22	Each	35559.00	782298.00	39.8
29.9	Supplying and fixing of following size Wall Mount Rack having Fixed Structure with 0.8mm CRCA Sheet, completely knocked-down condition (CKD) Shape, Vertical Mounting Rail 1.6 mm with 'U'Marking, Minimum 2 cable entry/exit provision at Top and bottom with rubber protection, Front 5mm Toughened Glass with lock, wall mounting kit, Powder coated Color-RAL- 7035, complied with UL & RoHS, 2 x 6 sockets 16A power distribution units, 3 numbers closed cable organizer, Hardware mounting					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	screws packet of 20 x 1 number, etc. complete as required.					
29.9.1	9U Rack	5	Each	8960.00	44800.00	39.23.2
29.9.1	15U Rack	5	Each	13330.00	66650.00	39.23.3
29.10	Supplying, drawing, Installation, Testing and commissioning of CAT6 UTP LSZH 23AWG Twisted Pair Cable in existing conduit/ on surface, Category 6 Unshielded Twisted Pair, 4 pair should be complied as per UL/ETL verification program for compliance with ANSI/TIA-568.2-D standard. Outer diameter should be in the range of 6.1mm nominal with Operating Temperature Range : -5° to +60°C, Bending Radius : < 4 X Cable Diameter at -5°C ± 1°C and Pulling Force : 11.5Kg etc. complete as required.					
29.10.1	1 run of cable	4500	Mtr	60.00	270000.00	39.17.1
29.10.2	2 run of cable	3000	Mtr	96.00	288000.00	39.17.2
29.10.3	3 run of cable	500	Mtr	131.00	65500.00	39.17.3
29.11	Supplying, Installation, Testing and commissioning of CAT6 Copper Information Outlet (IO) with face plate of color as per site requirement, should have ETL/UL verification program certificate for compliance with ANSI/TIA-568.2-D. All copper Cable and Components should be from same OEM to maintain compatibility and interoperability etc. complete as required.	85	Each	151.00	12835.00	39.14
29.12	Supplying, Installation, Testing and commissioning of RJ45 Connector for CAT 6/6A Cables. RJ45 modular plug supports 4 twisted pairs, 8 positions, 8 connectors. Housing: PC, UL94V-2, transparent color, Use for 24- 26 AWG stranded wires etc. complete as required.	85	Each	9.00	765.00	39.16
	Total=				3583811.00	
30	Conference System & AV System					
	AUDIO System					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

30.1	SITC of Digital Chairman Business Conference Unit with camera control Option, Output frequency response 50- 16000Hz, Earphone load >16 Ω, Earphone volume 10 mV, Earphone output ϕ 3.5mm stereo jack, Max. power consumption 1.65W, Connection Cat 5 or 7P-DIN dedicated cable with buckle, Inbuilt Speaker, can be muted. Shuould have LED dislay for volume level and speaker on/off Status. should have 3-pin mini XLR mic input that can accepts the array microphones. The chairman units should have 2 buttons - Push to Talk & Mute All for a quick conference.Should have a Gooseneck Array Microphone for better Quality and sensitivity etc.complete as rqrd.	2	Each	36669.00	73338.00	MR
30.2	SITC ofDigital Delegate Business Conference Unit with camera control, Output frequency response 50 16000Hz, Earphone Load >16 Ω, Earphone volume 10 mV, Earphone Output ϕ 3.5mm stereo jack, Max. power consumption 1.65 W, Connection Cat 5 or 7P-DIN dedicated cable with buckle, Inbuilt Speaker.Can be muted. Should have LED dislay for volume level and speaker on/off Status. should have 3-pin mini XLR mic input that can accepts the array microphones. The delegate units have a single Push to Talk button for a quick conference. Should have a Gooseneck Array Microphone for better Quality and sensitivity etc.complete as rqrd.	28	Each	36669.00	1026732.00	MR
30.3	SITC of Digital Business Conference System Controller with camera control, Supply voltage AC110V or AC220V, Max conference microphones 512, Frequency response: 20- 20000Hz, Signal-to- noise ratio: >80dBA, Dynamic range:>85dB, Audio crosstalk: >70dB, Total harmonic distortion: <0.05% Original input: 6.3 mm balanced Signal strength: 0.775 V. The system should have both automatic Voice Activation option for the Chairman & delegate Units as well as manual activation control. System should have	1	Each	215764.00	215764.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	balanced audio output and at least 4 digital input for the Delegate & Chairman Units. Should be configured both from the Front Panel as well as through PC software or better. Should have RS-232/ RS-485 Control Option or better etc.complete as rqrd.					
30.4	SITC of 2-channel feedback suppression unit with MagicLevel Curve reduction to reduce feedback evenly across the spectrum. It allows for better deployment of the conference system in venues with acoustical challenges.No. of Input 2.Input Connectors Female XLR / TRS Jack,CMRR >40 dB,A/D Dynamic Range 113 dB(A)Sample Rate,48 kHz No of Outputs,2 Power Consumption 9 W. 24 Programmable Filters per Channel, Stereo or Dual IndependentChannel Processing, Live and Fixed Filter Modes, Selectable Filter Lift Times, Application-specific filter types include: Speech and Music Low, Med and High, Input channel Metering, 24 LED per Channel Filter Metering, XLR and TRS Inputs and Outputs.Type IV Dynamic Range,Input Connectors Female XLR and 1/4" TRS Input Type Electronically bal/unbal RF filtered Sample Rate,Input Impedance Bal 40k ohm, unbal 20k ohm Frequency Response,Max Input 1+20dBu Interchannel Crosstalk,CMRR >40dB, typically >55dB@1kHz Operating Voltage>119dB, A-weighted, 22kHz; BW: >117dB.unweighted, 22kHz BW 48kHz,20Hz-20kHz, +-Q5dB,>80dB typical,100VAC 50/60Hz: 120VAC 60Hz: 230VAC 50/60Hz,Output 2 total Power input 220V-50Hz,Output Connectors Male XLR and 1/4" TRS Distortion <1.5%@1KHz,Output Type Electronically balunbal, RFfiltered Signal to noise ratio >71dB,Max Output +20dBu Amount of frequency 5Hz+10%,shift A/D Converter dbx Type IV conversion system,A/D Dynamic Range >114dB,A-weighted, >112dB unweighted Output impedance 200 Ohms,Input Type Electronically bal/unbal RF filtered Weight 3.2kg,Power Consumption 9W Size	1	Each	101400.00	101400.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	480x230x44mm.From the powerful DSP module to the no-nonsense user interface,the feedback compressor provides all the processing and control necessary for both installation and live use.The feedback compressor is an absolute must for any live sound application..Including OEM Authorization etc.complete as rqrd.					
30.5	SITC of 4" Expandable Column Speaker - IP64,60W continuous (240W peak) power with a 150 Hz–18 kHz response. Its 120° x 30° coverage and 111 dB max SPL ensure focused, intelligible sound in challenging environments.Freq. Response (-3 dB) : 150 Hz - 18 kHz, Freq. Range (-10 dB) : 110 Hz - 18 kHz, Rated Power : 60W AES, 240W Peak, H Dispersion : 120°, V Dispersion : 30°, Nominal Impedance : 8 Ω, Max Output : Cont 105 dB, Peak 111 dB.4" Full Range Driver, 60W AES, 240W Peak, 1" Copper Voice Coil - Ferrite Magnet, 4 Driver Column, Environmental Resistance Coating etc.complete as rqrd.	6	Each	62884.00	377304.00	MR
30.6	SITC Of 2 X 350W Constant Voltage Compatible Installation Amplifier.Input CMRR > 60 dB, Freq. resp.: 20Hz - 20kHz ±3dB. THD : better than 0.18% (1 kHz), THD : better than 0.2% (FR), Nominal system gain: 32 dB, Input Impedance — 20kΩ, >300 Damping Factor, 1kHz, 8Ω, Signal Limiters Present, Protection Against Short Circuit & DC,Outputs Peak Limiting, Input Load Protection,5A Power Consumption, Nominal @ 240V,4 Ohms, 10.4A Power Consumption, Nominal @ 120V, 4 Ohms, See Power Consumption & Thermal,Emission Chart for a detailed specification etc.complete as rqrd.	1	Each	117907.00	117907.00	MR
30.7	SITC Of 12 Channel Analogue Mixing Desk With Dual FX, 12 Line Inputs (8 mono + 2 stereo), 8 Microphone Inputs, 8 Mono Inputs (Ch 1-8), 04 Stereo Inputs (Ch 9-10 ,11-12), 01 Stereo Record Input, USB/Wireless Media Input,<0.02% Total Harmonic Distortion, 20-20 kHz at + 15 dBu, Freq. Response : 20 Hz - 20 kHz, HF EQ, 8 kHz, Shelf, ±15dB,	1	Each	78605.00	78605.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Mid EQ, 250 Hz - 6 kHz , bell, ± 15 dB, Low EQ, 180 Hz, Shelf, ± 15 dB, 79dB Crosstalk @1 kHz, 01 Stereo Output, 06 Aux Sends(Aux 5&6 are Fx Auxes which can be switched to Fx 1 & Fx 2), 04 Group Outs, 01 Phones Outs, 01 Stereo Record Out etc.complete as rqr.					
30.8	SITC Of Multi-frequency 2 channel UHF receiver with 8 simultaneous operating channels and a RF range of 80m. The IR Synchronisation feature allows quick sync to transmitters. The front panel has a simple and practical RF and AF signal strength indicator. The unit fits in a standard semi-U chassis with the rack mount kit.Diversity Principle True Diversity,Frequency Range,8 Channels Simultaneous Use,Frequency Selection,Auto Selection with IR Sync,Frequency Bands,GB: 606 – 648 MHz,E: 823 – 865 MHz,Frequency Range 40 Hz - 20 kHz, etc.complete as rqr.	2	Each	25940.00	51880.00	MR
30.9	SITC Of 218.4cm (86 inch) 8GB/128GB,Ultra Resolution Output. Zero bonding technology for natural writing experience. Front audio stereophonic speakers. Industrial grade aluminium frame. Multiple signal input HDMI, SPDIF, RS232, AV I/O, Earphone. Infrared touch technology for rich writing experience. Password Lock protected. 400cd/m ² $\pm 10\%$ high brightness. Built in Android OS with optional windows OS. 4mm protect and anti-scratch glass. 20 Point Touch. ≤ 5 ms response.,Bonding Technology Zero Bonding,Screen Type TFT LCD(Direct-LED Backlight),Aspect Ratio 16:9,Pixel Pitch 0.4928 (H) X 0.4928 (W),Response ≤ 8 ms,Resolution 3840 x 2160 pixels.Contrast Ratio 5000:1 Dynamic, 1200:1 Static.Brightness(cd/m ²) 400cd/m ² $\pm 10\%$. etc.complete as rqr.	1	Each	299177.00	299177.00	MR
30.10	SITC of OPS Devices, intel core i5, 10 GB DDR 16 RAM, 512GB RAM, WIFI BT and DOS Supported with Licence windows and ubuntu / Linux Dualos, Input 1xHDMI, 1xDP, 2xUSB, 1Xmic, 1x line out etc.complete as rqr.	1	Each	126216.00	126216.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

30.11	SITC of 30X optical zoom AI PTZ camera offering 4K resolution, smooth auto-tracking, and multiple output options, perfect for conferences, classrooms, and live events. Must have all relevant Camera Control RS232 & RS485 License like Sony or PELCO licenses. Image Sensor 1/2.8" 4K Exmor CMOS, Effective Picture Elements Output 8 Megapixels, S/N Ratio > 50dB, Gain Auto / Manual, TV Lines 1400 (Center/Wide), Shutter Speed 1/1 to 1/32,000 sec, Exposure Control Auto, Manual, ATW, One Push 30X 1X 30X, Optical Zoom 30X, Digital Zoom 1X, Total Zoom 30X, Focal Length f= 4.5 mm (Wide) to 135 mm (Tele), Aperture (Iris) F = 1.8 (Wide) to 4.7 (Tele), Minimum Working Distance 0.1 m (Wide), 1.2 m (Tele), Pan / Tilt Angles Pan : ±170°, Tilt : +90° / -30°, Pan / Tilt Speed (Manual Pan : 0.1° to 100° / sec, Tilt : 0.1° to 100° / sec, Preset Speed Pan : 200° / sec, Tilt : 200° / sec, Image Processing Noise Reduction (2D / 3D), Flip, Mirror, Power Frequencies 50 Hz, 60 Hz, Audio - Channel 2ch Stereo, Audio - Codec AAC-LC, Video Outputs 3G-SDI, HDMI, IP, USB, Audio Outputs 3G-SDI, HDMI, IP, USB. etc. complete as reqd.	1	Each	226744.00	226744.00	MR
30.12	SITC Of transmitter and receiver 4K2K@30Hz 4:4:4, 10.2Gbps or better, Supports HDCP 1.4 or better, Extender Set (Transmitter, Receiver). Supports HDMI 1.4, DVI 1.0 and HDCP 1.4, One-way POC support (from transmitter to receiver), One-way IR support, Supports Bypass. Inputs Transmitter: Receiver: 1x HDMI 1x IR, 1x CAT5e/6, Input Features Supports 4K2K@30Hz 40m, 1080P 70m, Outputs Transmitter: Receiver: 1x HDMI 1x HDMI, 1x IR, 1x CAT5e/6, Output Features 4K2K@30Hz. Power Connection 12V DC 1A, Working Temperature 0° ~ +40°, Humidity Range 20% ~ 90%, Storage Temperature -20° ~ +60°, Dimensions 79.5mm × 69mm × 16.5mm - W/D/H, Weight 132 / 130 g, Mounting Desktop etc. complete as	2	Each	164380.00	328760.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	rqrd.					
30.13	SITC Of 1.5mtr optical HDMI CABLE.with standard accessories etc.complete as rqrd.	6	Each	1512.00	9072.00	MR
30.14	SITC Of 5mtr optical HDMI CABLE.with standard accessories etc.complete as rqrd.	1	Each	4535.00	4535.00	MR
30.15	SITC Of 2 core Shielded Signal cable.SINGLE PAIR 1. TYPE : SHEILDED,ARMOURED, SINGLE PAIR SIGNAL CABLE,CONFORMING TO STANDARDS IS:8130, IS:5831, IS:3975, IS: 1554 2. CONDUCTOR : MULTISTRANDED(7NOS. X 0.53MM DIA), ANNEALED TINNED COPPERCONDUCTOR. CONFORMING TO IS 8130..Including OEM Authorization etc.complete as rqrd.	100	Mtr	101.00	10100.00	MR
30.16	SITC Of 19u rack internal control wiring, L angle Support, dummy IU Space for each and every equipment, MS door for both side and suitable power supply unit for the above equipments etc.Including OEM Authorization etc.complete as rqrd.	1	Each	45954.00	45954.00	MR
30.17	SITC of required adequate XLR, TRS, EP Stereo, RCA connectors for all speakers etc.complete as rqrd.	1	Lot	12597.00	12597.00	MR
	CLASS ROOM-5 NOS					
30.18	SITC of 4" Expandable Column Speaker - IP64,60W continuous (240W peak) power with a 150 Hz–18 kHz response. Its 120° x 30° coverage and 111 dB max SPL ensure focused, intelligible sound in challenging environments.Freq. Response (-3 dB) : 150 Hz - 18 kHz, Freq. Range (-10 dB) : 110 Hz - 18 kHz, Rated Power : 60W AES, 240W Peak, H Dispersion : 120°, V Dispersion : 30°, Nominal Impedance : 8 Ω, Max Output : Cont 105 dB, Peak 111 dB.4" Full Range Driver, 60W AES, 240W Peak, 1" Copper Voice Coil - Ferrite Magnet, 4 Driver Column, Environmental Resistance Coating etc.complete as rqrd.	20	Each	62884.00	1257680.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

30.19	SITC of 2 X 1500W Class H Amplifier, Input CMRR > 60 dB, Freq. resp.: 20Hz - 20kHz ± 3 dB, THD : better than 0.03% (1 kHz), THD : better than 0.03% (FR), Nominal system gain: 36 dB, Input Impedance — 20k Ω , >500 Damping Factor, 1kHz, 8 Ω , Signal Limiters Present, Protection Against Short Circuit /Temperature / DC Outputs, Gorilla Limiters Present, X Series Pre-amps, Mains In-rush Control present, 5.1A Power Consumption, Nominal @ 240V, 4 Ohms, 10.1A Power Consumption, Nominal @ 120V, 4 Ohms, See Power Consumption & Thermal Emission Chart for a detailed specification etc. complete as reqd.	5	Each	148039.00	740195.00	MR
30.20	SITC Of 10 Channel Compact Analogue Mixing Desk With Dual FX. 10 input channels, 6 Mic/Line XLR inputs (k Ω), 2 Stereo line inputs (10k Ω), Foot Switch, USB audio playback & recording, Wireless media input. plus 48V phantom power, 3-band input EQ, Fx sends, Stereo Pan Selection on CH 1/2. Class-C PSL Preamps, Oliver FX Engine with built in preset library, Individual return channels for both FX1 & FX2, Iphone, Android, PC & Mac Sound card compatibility etc. complete as reqd.	5	Each	23110.00	115550.00	MR
30.21	SITC Of 218.4cm (86 inch) 8GB/128GB, Ultra Resolution Output. Zero bonding technology for natural writing experience. Front audio stereophonic speakers. Industrial grade aluminium frame. Multiple signal input HDMI, SPDIF, RS232, AV I/O, Earphone. Infrared touch technology for rich writing experience. Password Lock protected. 400cd/m ² $\pm 10\%$ high brightness. Built in Android OS with optional windows OS. 4mm protect and anti-scratch glass. 20 Point Touch. ≤ 5 ms response., Bonding Technology Zero Bonding, Screen Type TFT LCD (Direct-LED Backlight), Aspect Ratio 16:9, Pixel Pitch 0.4928 (H) X 0.4928 (W), Response ≤ 8 ms, Resolution 3840 x 2160 pixels. Contrast Ratio 5000:1 Dynamic, 1200:1 Static. Brightness (cd/m ²) 400cd/m ² $\pm 10\%$. etc. complete as reqd.	5	Each	299177.00	1495885.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

30.22	SITC of OPS Devices, intel core i5, 10 GB DDR 16 RAM, 512GB RAM, WIFI BT and DOS Supported with Licence windows and ubuntu / Linux Dualos, Input 1xHDMI, 1xDP, 2xUSB, 1XMic, 1x line out etc.complete as rqrdr.	5	Each	126216.00	631080.00	MR
30.23	SITC of 30X optical zoom AI PTZ camera offering 4K resolution, smooth auto-tracking, and multiple output options, perfect for conferences, classrooms, and live events. Must have all relevat Camera Control RS232 & RS485 License like Sony or PELCO licenses. Image Sensor 1/2.8" 4K Exmor CMOS, Effective Picture Elements Output 8 Megapixels , S/N Ratio > 50dB, Gain Auto / Manual,TV Lines 1400 (Center/Wide) , Shutter Speed 1/1 to 1/32,000 sec, Exposure Control Auto, Manual, ATW, One Push 30X 1X 30X, Optical Zoom 30X , Digital Zoom 1X, Total Zoom 30X, Focal Length f= 4.5 mm (Wide) to 135 mm (Tele), Aperture (Iris) F = 1.8 (Wide) to 4.7 (Tele) , Minimum Working Distance 0.1 m (Wide), 1.2 m (Tele), Pan / Tilt Angles Pan : ±170°, Tilt : +90° / -30 , Pan / Tilt Speed (Manual Pan : 0.1° to 100° / sec, Tilt : 0.1° to 100° / sec, Preset Speed Pan : 200° / sec, Tilt : 200° / sec, Image Processing Noise Reduction (2D / 3D), Flip, Mirror , Power Frequencies 50 Hz, 60 Hz,Audio - Channe 2ch Stereo, Audio - Codec AAC-LC,Video Outputs 3G-SDI, HDMI, IP, USB, Audio Outputs 3G-SDI, HDMI, IP, USB etc.complete as rqrdr.	5	Each	226744.00	1133720.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

30.24	SITC Of Digital podium withScreen Size : 21.5”Diagonal,Resolution : 1920 x 1080,PC Connection : USB Port,Brightness : 250 cd/m2,Input : DVI, HDMI,Touch : Finger and Stylus with capacitive Touch,Stylus Type : Battery Free Pen,Display Colors : 16.7M,Response Time : 5ms,Contrast Ratio : 1000/1,Operating System : Windows, Linux, Mac.Laptop Interface : Inbuilt,Video Port For laptop : 1x HDMI(4K), 1x USB,Audio Port For Laptop : 1x 3.5mm Stereo Female Port,Buttons: Video Selection,buttons x 4, Microphone Control,Buttons, Volume Control Buttons, projector Control,Buttons, Screen up/Down Buttons.LAN Port : 1x RJ-45,USB 2.0 Ports : 4 x USB 2.0 Ports,1xUSB , 1xUSB ,Power Socket : 3 Pin AC 220,Power Socket,Input / Output Ports : 4x HDMI Inputs, 2x HDMI Outputs.Electrical,Power : 100 – 250V AC,Contents,3.5mm Male to Male x 1, USB 2.0 M to M x4.Cartridge : 20mm Condenser,Frequency Response : 40~20000 Hz.Polar Pattern and Microphone Type :Cardioids,Polarized Condenser ,Connectors : 3-Pin XLR with 48V Phantom Power and 200 Ohms impedance.Sound Pressure Level : 138 DB SPL@ 1% Threshold..with standard accessories etc.complete as rqrd.	5	Each	214147.00	1070735.00	MR
30.25	SITC Of transmitter and receiver 4K2K@30Hz 4:4:4, 10.2Gbps or better , Supports HDCP 1.4 or better , Extender Set (Transmitter, Receiver).Supports HDMI 1.4, DVI 1.0 and HDCP 1.4, One-way POC support (from transmitter to receiver), One-way IR support, Supports Bypass.Inputs Transmitter: Receiver:1x HDMI 1x IR,1x CAT5e/6,Input Features Supports 4K2K@30Hz 40m, 1080P 70m,Outputs Transmitter: Receiver:1x HDMI 1x HDMI,1x IR,1x CAT5e/6,Output Features 4K2K@30Hz.Power Connection 12V DC 1A,Working Temperature 0? ~ +40?Humidity Range 20% ~ 90%,Storage Temperature -20? ~ +60?,Dimensions 79.5mm × 69mm ×	10	Each	164380.00	1643800.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	16.5mm - W/D/H,Weight 132 / 130 g,Mounting Desktop etc.complete as rqrd.					
30.26	SITC Of 1.5mtr optical HDMI CABLE.with standard accessories etc.complete as rqrd.	30	Each	1512.00	45360.00	MR
30.27	SITC Of 5mtr optical HDMI CABLE.with standard accessories etc.complete as rqrd.	5	Each	4535.00	22675.00	MR
30.28	SITC Of 2 core Shielded Signal cable.SINGLE PAIR 1. TYPE : SHEILDED,ARMOURED, SINGLE PAIR SIGNAL CABLE,CONFORMING TO STANDARDS IS:8130, IS:5831, IS:3975, IS: 1554 2. CONDUCTOR : MULTISTRANDED(7NOS. X 0.53MM DIA), ANNEALED TINNED COPPERCONDUCTOR. CONFORMING TO IS 8130..Including OEM Authorization etc.complete as rqrd.	250	Mtr	101.00	25250.00	MR
30.29	SITC of required adequate XLR, TRS, EP Stereo, RCA connectors for all speakers etc.complete as rqrd.	5	LOT	12597.00	62985.00	MR
300 SEATER AUDITORIUM						
30.30	SITC of Twin 8" High Performance Installation Line Array, Frequency Response (-3 dB) 50 Hz - 22 kHz, Frequency Range (-10 dB) 47 Hz - 22 kHz, Rated Power Passive 1200W Continuous, 4800W Peak, Bi-amp LF: 1000W Continuous, 4000W Peak HF: 200W Continuous, 800W Peak, Maximum SPL 140 dB (with the Alpha Max Preset), Sensitivity 103 dB, Nominal Impedance Passive: 8 ohms, Bi-amp LF: 8 ohms, HF: 8 ohms, Coverage Pattern 140° x 20°, LF Driver 2 x 8" Low Distortion Transducers, 3" VC - Ferrite, HF Driver 1 x 1.75" neodymium compression driver, 2" VC, Crossover Frequency 1.1 kHz or Bi-amplified etc.complete as rqrd.	4	Each	220093.00	880372.00	MR
30.31	SITC of 18" or better Passive Subwoofer . Freq. Response : 34 Hz - 800 Hz or more , Freq. Range : 41 Hz - 200 kHz, or more Rated Power : 1200W AES, 4800W Peak, Omni-directional Coverage, Cardioid presets available, Nominal Impedance : 8 Ω, Crossover : 80 - 120 Hz Active, Max Output : Cont 129 dB, Peak 135	2	Each	176861.00	353722.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	dB.18" Low Frequency Long Excursion Driver, 1200W AES, 4800W Peak, 4" Copper Voice Coil - Ferrite Magnet, 3L Resistance Coating, .with standard accessories etc.complete as rqrd.					
30.32	SITC of Array Frame for Suspending up to 6 Enclosures with 10:1 Design Factor. Includes 4 x Quick Release Pins, 2 x Shackles, 2 x Drop Levers etc.complete as rqrd.	2	Each	109696.00	219392.00	MR
30.33	SITC Of 10" or better Outdoor Coaxial Speaker - IP64, Freq or better . Response (-3 dB) : 67 Hz - 20 kHz, Freq or better . Range : 55 Hz - 20 kHz or better , Rated Power : 450W, 1800W Peak or better , H Dispersion : 100° or better , V Dispersion : 100° or better , Crossover : Passive, 1.2 kHz or better . Nominal Impedance : 8 Ω, Transformer Taps : 100/70 Taps : 15W / 30W/ 40W or better , Max Output : Cont 122 dB or better , Peak 128 dB,LF : 10" High Power Coaxial Driver, 400W AES, 1600W Peak or better , 2" Copper Voice Coil - Ferrite Magnet, Environmental Resistance Coating, Terra-Coating for enhanced resistance ,against environmental factors, Large Effective Piston Area, placed in a volume optimised enclosure for enhanced bass response, HF : 1" Voice Coil - Ferrite, 50W AES, 200W Peak or better ..with standard accessories etc.complete as rqrd.	6	Each	78605.00	471630.00	MR
30.34	SITC of 7" COAXIAL SPEAKER - IP67, Freq.Response (-3dB):80Hz-18kHz , Freq.Range(-10dB): 61Hz-20kHz, Rated Power:200W,800W Peak, H Dispersion:100°(-6dB, V Dispersion:100°(-6dB), Crossover Frequency: 2.2kHz Passive or Bi-amplified, Nominal Impedance: LF/FR-8Ω, HF-8Ω, 100V/70V Transformer Taps:100W,50W, 25W,10W, Maximum SPL:115dB, 121dB Peak, Shielded Screw Terminals,or better etc.complete as rqrd.	2	Each	47163.00	94326.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

30.35	SITC of 15 inch Powered Speaker, Frequency Response (-3 dB) 57 Hz - 20 kHz , Frequency Range (-10 dB) 45 Hz - 21 kHz, Amplifier Power 850W Continuous, 1700W Peak, Maximum SPL 128 dB, Coverage Pattern 100° x 60°, Controls Individual & Master Gain Knobs, Power Switch, LF Driver 15" LF Driver, 2.5" VC - Ferrite, HF Driver 1.4" Titanium Compression Driver - 1" VC, Connectors 2 x Balanced XLR Inputs 1 x Balanced XLR Link Output Power Input, AC Power Input Universal power SITC 100 - 240 VAC, 50 - 60 Hz etc.complete as rqrd.	2	Each	66028.00	132056.00	MR
30.36	SITC of 2 - Channel High Performance Amplifier Systems for Install Applications, Power at 4 Ohms (Stereo Mode, All channels driven) 2500W, Power at 8 Ohms (Stereo Mode, All channels driven) 1300W, Bridged Power at 8 Ohms 4100W, Bridged Power at 4 Ohms 6400W, Dampning Factor > 400 at 8ohms, Signal to Noise Ratio (1 kHz, 8 Ohms) - 105 dB, THD < 0.02% THD / 4ohms and 8 ohms, Controls Sensitivity Selection - High Pass Cut Off - Stereo, Bridge, Parallel Switch". etc.complete as rqrd.	2	Each	188651.00	377302.00	MR
30.37	SITC of 2 - Channel High Performance Amplifier Systems for Install Applications, Power at 4 Ohms (Stereo Mode, All channels driven) 1650W, Power at 8 Ohms (Stereo Mode, All channels driven) 900W, Bridged Power at 8 Ohms 3000W, Bridged Power at 4 Ohms 4000W, Dampning Factor > 400 at 8ohms, Signal to Noise Ratio (1 kHz, 8 Ohms) - 105 dB, THD < 0.02% THD / 4ohms and 8 ohms, Controls Sensitivity Selection - High Pass Cut Off - Stereo, Bridge, Parallel Switch" etc.complete as rqrd.	2	Each	133628.00	267256.00	MR
30.38	SITC of 20 Channel Analogue Mixing Desk With Dual FX, 20 input channels, 16 Mic/Line XLR inputs (3kΩ), 2 Stereo line TRS Jack inputs (10k Ω), USB audio playback & recording, wireless media input, 1 stereo out - L/R(75Ω), 4 group outputs(150Ω), 3 Aux outputs (75Ω), 1 Phones output (150Ω),Dedicated input	1	Each	94326.00	94326.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	metering, +48V phantom power/channel, 20dB pad, 3-band input EQ.with standard accessories etc.complete as rqrd.					
30.39	SITC Of 8-in, 8-out DSP Dante Processoroffer quick & reliable solutions to systems integrators. The 8IO dante processor features an auto mixer, matrix mixer, feedback suppression and Dante audio networking in one purpose-built DSP processor. It has 8 mic/line analog inputs & 8 analog outputs to ably complement a wide range of applications such as hospitality, boardrooms, large conference rooms, courtrooms, auditoriums and multi-purpose halls.Input Channels 8 Balanced Mic/Line inputs,Output Channels 8 Balanced Line outputs,Connectors 3.81 mm Pheonix Conectors, 12-pin,Input / Output Impedance Input - 11.5 K Ω , Output - 150 Ω ,Max. Input Level 14 dBu - Line,-7 dBu - Mic,Phantom Power +48V DC, selectable per input,THD + N Line: -90 dBu (12dBu, 1kHz, A), Mic: -86 dBu (7dBu, 1kHz, A) etc.complete as rqrd.	1	Each	235814.00	235814.00	MR
30.40	SITC of High-performance Vocal Microphone with adapted sensitivity for deep vocals, Type Dynamic, Frequency Response 24 Hz - 15 Khz, Polar Pattern Cardioid, Sensitivity -51 dBV/Pa (1.85 mV), Impedance 600 Ω , Max SPL 168 dB, 1 kHz at 1% T.H.D., Connector Three-pin balanced XLR etc.complete as rqrd.	4	Each	23581.00	94324.00	MR
30.41	SITC of Adjustable 18" Cardioid Gooseneck Microphone, Type Electret Condenser, Frequency Response 20 Hz - 17 kHz, Polar Pattern Cardioid, Sensitivity -36 $\pm$ 3 dB* (15.8mV) 0dB =1V /Pa,1kHz, Impedance 100 Ω , Max SPL 140 dB, 1 kHz at 1% T.H.D., Gooseneck Base with Switch, Frequency Response 20~20,000 Hz, Power Requirement Phantom power 48V or battery power 1.5V*2 (ST-5030i work with 12~48V Phantom power), Current Consumption-Stand-by 2.4mA, Current Consumption-Operating 6.6mA, Switches Microphone selection:ECM MIC	1	Each	31442.00	31442.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	unbalanced input, ECM MIC balanced input, Dynamic MIC input Magnetic switch: power on/off, etc.complete as rqr.					
30.42	SITC Of Multi-frequency 2 channel UHF receiver with 8 simultaneous operating channels and a RF range of 80m. The IR Synchronisation feature allows quick sync to transmitters. The front panel has a simple and practical RF and AF signal strength indicator. The unit fits in a standard semi-U chassis with the rack mount kit.Diversity Principle True Diversity,Frequency Range,8 Channels Simultaneous Use,Frequency Selection,Auto Selection with IR Sync,Frequency Bands,GB: 606 – 648 MHz,E: 823 – 865 MHz,Frequency Range 40 Hz - 20 kHz, etc.complete as rqr.	1	Each	25940.00	25940.00	MR
30.43	SITC of Wireless Handheld Receiver with the below specifications:- Diversity Principle: True Diversity, No. of Channels : 2, Frequency response 20-20 Khz, Frequency Selection: Auto, Modulation : Wideband FM, Attenuation : 0 to 14 Db selectable , LED Display, Range : 100 meters, With RF Shielding, Wireless Bodypack Transmitter with RF Power Output : 30mW, Frequency response: 20 Hz to 20Khz, Volume & Mute Button on Transmitter, Battery Operation time: 8 hour with rechargeable battery, Range : 100 meters, PLL Synthesized Circuits or better. etc.complete as rqr.	2	Each	69172.00	138344.00	MR
30.44	SITC Of 2 core Shielded Signal cable.24 AWG (25/0.10mm) x 2 core ATC copper conductor, PE insulated, core twisted in circular form, covered with special moisture proof polymer, spiral shielded (97%) with ATC copper, outer Jacketed with Matt finish High Flex Special PVC.No of Conductors Conductor (No. / size of wire)25/0.10 mm ,Cross Sectional Area 0.22 sqmm (24 AWG),Insulation Material HOPE Insulation OD 1.10 mm,Shield Conductor 2,ATC Copper-(0.10mm)105 wires (approx) Shield Type Serve Shield - also called Helical, or spiral	200	Mtr	101.00	20200.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Jacket Material High Flex Matt Finish PVC,Jacket OD 6.00 mm+-.10mm..with standard accessories etc.complete as rqrd.					
30.45	SITC of 12 pair Snake cable 33 Meter etc.complete as rqrd.	2	Each	105814.00	211628.00	MR
30.46	SITC of 12CH Patch Box etc.complete as rqrd.	2	Pc	17636.00	35272.00	MR
30.47	SITC Of required adequate XLR, TRS, EP Stereo, RCA connectors for all speakers..with standard accessories etc.complete as rqrd.	1	Lot	12597.00	12597.00	MR
30.48	SITC Of 32U Equipment Rack..with standard accessories etc.complete as rqrd.	1	Pc	174140.00	174140.00	MR
	VIDEO SOLUTION					MR
30.49	SITC Of 8,000 ANSI Lumens offering bright images in any environment,Up to a 300" ultra-large screen with a lower cost-per-inch,Supports a 21:9 aspect ratio, ideal for Microsoft Teams Rooms,Installation flexibility: H/V lens shift, 1.6x optical zoom, and H/V keystone correction 2nd generation laser phosphor technology with a lifespan up to 30,000 hours,Centralized LAN control for efficient management.Projection System: 3LCD (3x0.64" with MLA),Native Resolution: 1920x1200,,Brightness (Center Lumens): 8500,Contrast Ratio: 3000000:1,Display Color: 1.07 Billion Colors,Light Source Type: Laser Phosphor,Light Source Life (hours) with Normal Mode: 20000,Light Source Life (hours) with SuperEco Mode: 30000 (Eco),Lens: F=1.5-2.08, f=17.2-27.7mm,Projection Offset: 0%+/-5%,Throw Ratio: 1.2-2.0,Optical Zoom: 1.6X Digital Zoom: 1.0x-4.0x Image Size: 30"-300", Throw Distance: 0.78-12.99m,(100"@2.58m) etc.complete as rqrd.	1	Each	730621.00	730621.00	MR
30.50	SITC Of a Motorized screens with tubular motor & rf remote.Wide format 16:10 HD series 226" or better 120" X192"..with standard accessories etc.complete as rqrd.	1	Each	221706.00	221706.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

30.51	SITC Of 65" 4K UHD(3840 X 2160) Slim DLED display, 600 Cd/m2, Android 9.0, Quad-Core ARM Cortex-A55 CPU, ARM Mali-G31 MP2 GPU, 2GB DDR4 memory, 16GB storage, HDMI 2.0 X 4, DP 1.2a X 1, USB-A 3.0 x 1, USB-A 2.0 x 1 USB-A 2.0 (Internal) x1, USB-C 3.0 x 1, HDMI Out x 1, RJ45 X 1, RS232 X 1, Audio IN X1, Audio Out x 1, Optic SPDIF, RJ12 x 1, 20W in built speaker, 24/7 operation, Built in Wifi & Bluetooth, HTML5 CMS Launcher, Android CMS Launcher, Scheduler, USB-Autoplay, Auto-Launch, HDMI-CEC, HDMI-Wakeup, OSD and UI Rotation, Video Rotation, NoSignalPowerOff, Pixel shift, Videowall support, Real Time Clock etc.complete as rqrd.	4	Each	111024.00	444096.00	MR
30.52	SITC Of 4x4 HDMI or better 4K 18Gbps Matrix Switcher is a high-performance device designed to provide seamless switching and distribution of up to four HDMI 2.0 sources to four HDMI 2.0 displays or better . Supporting the latest HDMI standards, this matrix switcher delivers exceptional video quality with advanced control and audio management features, making it ideal for professional AV setups,4 X HDMI 2.0 Input - 4 X HDMI 2.0 Output - Supported HDCP 2.2/1.4, DVI 1.0 - Supported 18Gbps bandwidth - Supported 4K@60Hz Input and Output - Support Scaling - Compact Design - Control WEB GUI, TCP/IP, RS232, Front Panel Buttons and IR remote - EDID Management- Supported 4 sets De-Embedded audio to analog and Coax audio ports- ARC audio return to the coaxial ports output only,Supports Up to 4K@60Hz 4:4:4 and HDCP 2.2: Each input and output supports resolutions up to 4K@60Hz with 4:4:4 chroma subsampling, providing high-definition video with accurate colors and sharp details. The matrix also supports HDCP 2.2, ensuring compatibility with modern 4K content-protected devices.- Individual Output Scaling: Each HDMI output can be individually scaled from 4K to 1080p, enabling compatibility with a variety	1	Each	163256.00	163256.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	of display resolutions. This is ideal for environments that use both UHD and HD displays..with standard accessories etc.complete as rqrd.					
30.53	SITC Of Extender Set Transmitter, Receiver, 4K2K@30Hz 4:4:4, 10.2Gbps- Supports HDCP 1.4 or better , provides 4K video and image transmission up to 40 meters and Full HD image quality up to 70 meters. Supports HDMI 1.4, DVI 1.0 and HDCP 1.4,- One-way POC support from transmitter to receiver,- One-way IR support,- Supports Bypass ,Inputs Transmitter: , Input Features Supports 4K2K@30Hz 40m, 1080P 70m or better ,Outputs Transmitter:1X HDMI,1X IR,1X CAT5E/6, Receiver :1x hdmi , Output Features 4K2K@30Hz, Power Connection 12V DC 1A or better ..with standard accessories etc.complete as rqrd.	4	Each	41570.00	166280.00	MR
30.54	SITC Of Digital podium withScreen Size : 21.5”Diagonal,Resolution : 1920 x 1080,PC Connection : USB Port,Brightness : 250 cd/m2,Input : DVI, HDMI,Touch : Finger and Stylus with capacitive Touch,Stylus Type : Battery Free Pen,Display Colors : 16.7M,Response Time : 5ms,Contrast Ratio : 1000/1,Operating System : Windows, Linux, Mac.Laptop Interface : Inbuilt,Video Port For laptop : 1x HDMI(4K), 1x USB,Audio Port For Laptop : 1x 3.5mm Stereo Female Port,Buttons: Video Selection,buttons x 4, Microphone Control,Buttons, Volume Control Buttons, projector Control,Buttons, Screen up/Down Buttons.LAN Port : 1x RJ-45,USB 2.0 Ports : 4 x USB 2.0 Ports,1xUSB , 1xUSB ,Power Socket : 3 Pin AC 220,Power Socket,Input / Output Ports : 4x HDMI Inputs, 2x HDMI Outputs.Electrical,Power : 100 – 250V AC,Contents,3.5mm Male to Male x 1, USB 2.0 M to M x4.Cartridge : 20mm Condenser,Frequency Response : 40~20000 Hz.Polar Pattern and Microphone Type :Cardioids,Polarized Condenser ,Connectors : 3-Pin XLR with 48V Phantom Power and 200 Ohms impedance.Sound Pressure	1	Each	214147.00	214147.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Level : 138 DB SPL@ 1% Threshold..with standard accessories etc.complete as rqrd.					
30.55	SITC Of Projector mount, complete with standard accessories as required..with standard accessories as required and as per the direction of Engineer-In Charge	1	Each	20155.00	20155.00	MR
30.56	SITC Of 1.5mtr optical HDMI CABLE..with standard accessories as required and as per the direction of Engineer-In Charge.	12	Each	1512.00	18144.00	MR
30.57	SITC Of 5mtr optical HDMI CABLE..with standard accessories as required and as per the direction of Engineer-In Charge.	2	Each	4535.00	9070.00	MR
30.58	SITC Of 10mtr optical HDMI CABLE..with standard accessories as required and as per the direction of Engineer-In Charge	1	Each	15116.00	15116.00	MR
	DISPLAY					
30.59	Supplying, Installation, Testing and Commissioning of following size LED display (LED monitor) industrial grade with 3840x2160 resolution or better, USB playback, bluetooth and miracast connectivity, 4X HDMI 2.0, DP 1.2, HDR 10/10+, brightness: 500-nits or better, Video wall mode should be available, contrast ratio: 1200:1, OPS slot, viewing angle (H/V): 170°/ 170°, response time less than 12ms, Display control shall be on monitor screen and programmable with remote (remote shall be supplied with system), Key Board, Optical Mouse, etc. as required.					
30.59.1	42 inch or larger	12	Each	51459.00	617508.00	42.4.2
	Total=				17841182.00	
31	VRF TYPE AIR CONDINTIONING SYSTEM					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

31.1	Supplying, Installation, Testing & Commissioning of Modular type Variable Refrigerant Flow/Variable Refrigerant Volume air cooled Outdoor units suitable for cooling/heating having 100% hermetically sealed inverter type twin Rotary/Scroll Compressor(s), minimum two compressors (with individual separate PCB) for above 14HP modules, microprocessor based Controller, top discharge type condensing unit(s), with R-410-A Refrigerant or equivalent, vibration Isolators with suitable foundation etc. complete as required. To have better efficiency condenser fan shall be capable to operate at different speed with respect to load. The unit shall deliver the rated capacity and in confirmation as per IS 18728:2024 and CPWD Specifications and work even at 50°C ambient temperature without tripping. The system shall be able to deliver 100% of the rated capacity upto 39 °C. The unit shall be suitable to work on 400V +/- 10%, 3 Phase, 50Hz AC power supply and BMS compatible. The unit shall be filled with first charge of the refrigerant and ready for use as required. The condenser should be coated with a hydrophilic film to prevent water accumulation on the surface of the heat exchanger, enhance water dispersion, and reduce the risk of degradation, thereby improving overall performance and durability. The Indian Seasonal Energy Efficiency Ratio (ISEER) of the unit shall be as per Energy Conservation and Sustainable Building Code (ECSBC) 2024 as below and complete as per CPWD specification, connections, inter connections etc. as required. (For capacity 40 and 70 ISEER 7.6 for Super ECSBC Building) For Cooling or Heating or Both					
31.1.1	14 HP to 22 HP	260	HP	21659.00	5631340.00	31.3.3

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

31.2	Supplying, Installation, Testing and Commissioning of following minimum capacity 4 way Cassette Type Indoor ceiling mounted unit equipped with synthetic washable media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX Copper coil, electronic expansion valve, outer cabinet, drain pump, grill, necessary supports, vibration Isolation, Corded remote control etc., suitable for operation on single phase 230 V $\pm$ 10%, 50Hz AC supply, complete, as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement in auto mode. The cooling capacity of indoor unit will be at air inlet conditions of 27 0C DB and 19 0C WB temperature. (Make will be same as of Outdoor)					
31.2.1	2.0 TR	2	Each	39734.00	79468.00	31.4.5
31.2.2	2.6 TR	43	Each	40814.00	1755002.00	31.4.7
31.2.3	4.1 TR	7	Each	45781.00	320467.00	31.4.9
31.2.4	4.6TR	9	Each	52799.00	475191.00	31.4.10
31.3	Supplying, Installation, Testing and Commissioning of following minimum capacity and external static pressure VRF/VRV ceiling mounted mid high static ductable type Indoor unit equipped with washable synthetic media pre filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration Isolators, drain pan, drain pump, other necessary supports etc., suitable for operation on single phase AC supply 230 V $\pm$ 10%, 50 Hz complete as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement automatically. The cooling capacity of indoor unit will be at air inlet conditions of 27 0C DB and 19 0C WB temperature. (Make will be same as of Outdoor) High Static Ductable units (minimum 49 to 77 pascal external					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	static pressure)					
31.3.1	4.0 TR	4	Each	45997.00	183988.00	31.11.8
31.4	Supplying, Installation, Testing and Commissioning of following minimum capacity and external static pressure VRF/VRV ceiling mounted high ductable type Indoor unit equipped with washable synthetic media pre-filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, corded remote control, outer cabinet, vibration Isolators, drain pan, drain pump, other necessary supports etc., suitable for operation on single phase AC supply 230 V $\pm$ 10%, 50 Hz complete as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The cooling capacity of indoor unit will be at air inlet conditions of 27 0C DB and 19 0C WB temperature. (Make will be same as of Outdoor)					
31.4.1	5.5 TR	6	Each	74394.00	446364.00	31.12.1
31.5	Supplying, Installation, Testing and Commissioning of following minimum capacity High wall type Indoor unit equipped with and comfort washable synthetic media pre filter, fan section with low noise fan/dynamically balanced blower, multispeed motor, coil section with DX copper coil, electronic expansion valve, outer cabinet, cord less remote control, drain pan, necessary accessories etc., suitable for operation on 230 V $\pm$ 10%, 50 Hz, single phase AC supply, complete as required. The Indoor units must shut down upon receiving a signal from the BMS System/Fire Signals. The system shall be capable to adjust air flow as per room requirement automatically. The cooling capacity of indoor unit will be at air inlet conditions of 27 0C DB and 19 0C WB temperature. (Make will be same as of Outdoor)					
31.5.1	1.0 TR	2	Each	17816.00	35632.00	31.8.3
31.6	Supplying, Installation, Testing and Commissioning of Y/T/Multi Joints. Joints shall be of same Original Equipment Manufacturer (OEM) make					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	as of ODU's and IDUs					
31.6.1	Indoor Units	75	Each	4535.00	340125.00	31.13.1
31.6.2	Outdoor Multi Joint	10	Each	8098.00	80980.00	31.13.2
31.7	Supplying, Installation, testing and commissioning including vacuumization and Nitrogen testing of following nominal sizes of soft/hard drawn copper refrigerant piping for VRV/VRF system, complete with fittings, with suitable adjustable ring type hanger supports, jointing/brazing including accessories, insulated with XPLE Class-O tubular insulation/with Class-O closed cell elastometric nitrile rubber tubular sleeves sections of 19 mm thick insulation as given below for Suction and Liquid lines, all accessories as per specifications etc. as required :					
31.7.1	6.4 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	50	Mtr	256.00	12800.00	31.14.1
31.7.2	9.5 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	520	Mtr	346.00	179920.00	31.14.2
31.7.3	12.7 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	200	Mtr	487.00	97400.00	31.14.3
31.7.4	15.86 mm dia (OD) (Soft drawn) with tube thickness 1.2 mm	400	Mtr	615.00	246000.00	31.14.4
31.7.5	19 mm dia (OD) (Hard drawn) with tube thickness 1.2 mm	110	Mtr	739.00	81290.00	31.14.5
31.7.6	22.2mm dia(OD) (Harddrawn)with tube thickness1.2mm	200	Mtr	904.00	180800.00	31.14.6
31.7.7	28.58mm dia(OD) (Harddrawn) with tube thickness1.2mm	100	Mtr	1157.00	115700.00	31.14.8
31.7.8	34.9 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm	200	Mtr	1286.00	257200.00	31.14.11
31.7.9	41.27 mm dia (OD) (Hard drawn) with tube thickness 1.62 mm	50	Mtr	1368.00	68400.00	31.14.12
31.8	Supply & Installation Testing and Commission of Control wiring of 2 core x 1.5 sqmm copper cable through suitable conduits in between indoor and outdoor units etc. complete as required.	1100	Mtr.	181.00	199100.00	MR
31.8.1	2 x 1.5 sq. mm					
31.9	Supply, Installation, Testing and Commissioning of hard PVC drain pipe with 19 mm thick nitrile tube insulation.(With necessary Lbow, Sockets & Reducers.) etc complete as required.					
31.9.1	25 mm dia	300	Mtr	222.00	66600.00	MR
31.9.2	32 mm dia	400	Mtr	262.00	104800.00	MR
31.9.3	40 mm dia	50	Mtr	262.00	13100.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

312.10	Supplying, installation, balancing and commissioning of factory fabricated GSS sheet metal rectangular/ round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports, bends, transitions, reducers, end caps, collars etc as required complete in all respect in confirmation to IS : 655 and approved drawings and specifications of following sheet thickness complete as required.					
31.10.1	Thickness 0.63 mm sheet	100	Sq.m	1191.00	119100.00	30.12.1.1
31.10.2	Thickness 0.80 mm sheet	150	Sq.m	1382.00	207300.00	30.12.1.2
31.11	Supplying and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m ³ , with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminium sheet fixed to inside surface of ducts with cadmium plated nuts, bolts, stick pins, CPRX compound in confirmation to SMACNA/IS and as per specifications complete etc. as required.	45	Sq.m	890.00	40050.00	30.21
31.12	Supplying and fixing of following thickness duly laminated aluminium foil of mat finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying suitable adhesive for Nitrile rubber. The joints shall be sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required.					
31.12.1	19 mm	300	Sq.m	810.00	243000.00	30.23.1
31.13	Supplying, Fixing, installation, testing and commissioning of powder coated extruded aluminium Supply Air Grills with aluminium volume control dampers in confirmation to SMACNA/IS and as per specifications complete etc. as required.	5	Sq.m	9623.00	48115.00	30.15
31.14	Supplying & fixing of powder coated extruded aluminium Return Air Grills with louvers but without volume control dampers complete in confirmation to SMACNA/IS and as per specifications complete etc. as required.	5	Sq.m	6285.00	31425.00	30.16
	Total=				11660657.00	

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

32	Fire Alarm System & PA System					
32.1	Supplying, installation, testing & commissioning of intelligent analog addressable photothermal detector complete with mounting base complete as required.	300	Each	3004.00	901200.00	28.2.4
32.2	Supplying, installation, testing & commissioning of intelligent addressable thermal detector with rate of rise cum fixed temperature thermistor complete with base as required.	30	Each	2866.00	85980.00	28.2.9
32.3	Supplying, installation, testing & commissioning of addressable manual call point complete as required.	10	Each	4063.00	40630.00	28.2.14
32.4	Supplying, installation, testing & commissioning of addressable horn cum strobe complete as required.	10	Each	3682.00	36820.00	28.2.15
32.5	Supplying, installation, testing & commissioning of response indicator on surface/recessed MS Box having two LED, metallic cover complete with all connections etc as required.	150	Each	306.00	45900.00	28.2.5
32.6	Supplying, installation, testing and commissioning of micro processor based intelligent addressable main fire alarm panel, central processing unit with the following loop modules and capable of supporting not less than 240 devices (including detectors) and minimum 120 detectors per loop and loop length up to 2 km, network communication card, minimum 320 character graphics/ LCD display with touch screen or other keypad and minimum 4000 events history log in the non volatile memory (EPROM), power supply unit (230 $\pm$ 5 % V, 50 hz), 48 hrs back-up with 24 volt sealed maintenance free batteries with automatic charger. The panel shall have facility to connect printer to printout log and facility to have seamless integration with analog/digital voice evacuation system (which is part of the schedule of work under SH: PA System) and shall be complete with all accessories . The panel shall be compatible for IBMS system with open protocol BACnet/ Modbus over IP complete as per specifications.					
32.6.1	Two Loop Panel.	1	Each	250420.00	250420.00	28.2.1.2

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

32.7	Supplying & laying of 2x1.5 sqmm fire survival armoured cable, 600/1000V rated with annealed copper conductor having glass mica fire barrier tape covered by an extruded layer of Cross Linkable Ethylene Propylene Rubber (EPR) insulation and LSZH inner bedding, steel wire armouring & LSZH outer sheath complete as required.	4500	Mtr	386.00	1737000.00	28.5.1
	PUBLIC ADDRESS SYSTEM					
32.8	Supplying, installation, testing & commissioning of 6 zone, voice alarm controller with USB, MP4 player (including 6 zone button paging station) with seamless integration facility with main fire alarm panel for voice evacuation complete as required.	1	Each	132115.00	132115.00	28.3.1
32.9	Supplying, installation, testing & commissioning of 1.5/3/6W metal box ceiling/wall speakers complete as required.	95	Each	1891.00	179645.00	28.3.3
32.10	Supplying, installation, testing & commissioning of digital audio amplifier 75 Watt, 25V rms operating at 240 Volt AC Supply complete as required.	4	Each	152368.00	609472.00	28.3.7
32.11	Supplying, installation, testing & commissioning of Voice command keypad 6 zone, with microphone assembly complete as required.	1	Each	85450.00	85450.00	28.3.9
32.12	Supplying and drawing of cable Fire Retardant PVC insulated copper conductor cable in the existing surface / recessed steel conduit of following pairs, cores and size including connections and interconnections etc. as required.					
32.12.1	speaker cable Two pair, 2-core, 1.5 sqmm	1500	Mtr	97.00	145500.00	28.5.3.2
	Total=				4250132.00	
33	WET RISER SYSTEM WITH SPRINKLER SYSTEM					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

33.1	Supplying, installation, testing and commissioning of Electric driven Main Fire Pump conforming to IS 12469: 2019 suitable for automatic operation and consisting of following, complete in all respects, as required : (b) Horizontal type, multistage, centrifugal, splitcasing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal as required. (c) Suitable HP Squirrel cage induction motor, TEFC, synchronous speed 1500 RPM, suitable for operation on 415 volts, 3 phase 50 Hz, AC supply with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-12615: 2018. (d) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required. (e) Suitable cement concrete foundation duly plastered with anti vibration pads					
33.1.1	2280 lpm at 70 m Head	2	Set	388181.00	776362.00	27.1.5
33.2	(a) Supplying, installation, testing and commissioning of diesel engine driven main fire pump conforming to IS 12469: 2019 suitable for automatic operation and consisting of following, complete in all respects, as required : (Diesel Driven Pump) (b) Horizontal type, multistage, centrifugal pump of cast of iron body and bronze impeller with stainless steel shaft, mechanical seal as required. (c) Suitable HP, 1500 RPM water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12 /24 volts electric starting equipment, diesel tank, exhaust pipe extended upto 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications, painted with post office red colour etc. as required. (d) M.S fabricated, common base plate, coupling, coupling guard, foundation bolts etc. as required.					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	(e) Suitable cement concrete foundation duly plastered and with anti vibration pads.					
33.2.1	2280 lpm at 70 m Head	1	Set	642112.00	642112.00	27.2.5
33.3	Supplying, installation, testing and commissioning of electric driven pressurisation pump conforming to IS 12469: 2019 suitable for automatic operation and consisting of following, complete in all respects, as required : (Jockey Pump) (b)Horizontal type, multistage, centrifugal pump of cast iron body and bronze impeller with stainless steel shaft, mechanical seal as required.(c)Suitable HP squirell cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz AC supply with IP 55 class of protection for enclosure, horizontal foot mounted type with Class 'F' insulation, conforming to IS-12615: 2018.(d)M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.(e) Suitable cement concrete foundation duly plastered and with anti vibration pads.					
33.3.1	300 lpm at 70 m Head	2	Set	134448.00	268896.00	27.3.5
33.4	Fabrication, supplying, Installation testing & commissioning of Electrical control panel of cubical construction, floor mounted type, fabricated out of 2mm thick CRCA sheet, compartmentalised with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, inter-connection with suitable size copper conductor cable/solid copper strip, having switchgears and accessories, mountings and internal wiring, earth terminals, numbering etc. complete in all respect, suitable for main fire pump, pressurisation pump & diesel pump set complete as per CPWD specification with following in coming and Outgoings, suitable for operation on 415V, 3 phase, 50Hz Ac Supply with enclosure protection class IP 42 as required :					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Incomings 400A, 50kA 4 Pole MCCB, Ics=100% Icu Rating Digital Voltmeter 0-500V with selector switch Ammeter (0-400 A) with selector switch & CTs etc. LED type RYB phase indicating lamps, ON, OFF, trip indicating lamps Set of Copper Bus Bar 500Amps Outgoings (Note : All outgoing feeders for pumps should have digital Ammeter with selector switches, and LED type ON, OFF, trip indicating lamps) Main Fire Pumps 125 Amp, 50kA TPN MCCB, Ics=100% Icu, with fully automatic Star/Delta starter suitable for 60 hp pump with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation. - 2 sets Jockey Pump 63 Amp, 50kA TPN MCCB, Ics=100% Icu, with Suitable HP fully automatic Star/Delta starter with overload protection, current sensing type single phase preventor complete with all accessories and internal wiring required for automatic operation, selector switch for local/remote, auto/manual/OFF operation. - 2 sets					
33.4.1	Diesel Engine Control Control for diesel engine comprising - Automatic/Manual selector switch & 3 attempts starting device, timers and relays as required, push buttons, start/stop in manual mode Indicating lamp for high/ Low Lub. Oil pressure, High Water Temp and Engine on indication Battery charger suitable for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC volt meter, and 0-20 A DC Ammeter All standard relays and accessories for automatic operation of diesel engine. System Controller Designing, Supply, Installation, Testing and commissioning of system controller to control operation of main electric fire pump, diesel pump, Pressurization pump, Terrace pump in	1	Each	388843.00	388843.00	27.5.4

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	sequence as per specification consisting of relays, timers. Sensors, annunciation window for fault indication, complete as per specification					
33.5	Providing laying, testing & commissioning of 'C' class heavy duty MS Pipe conforming to IS 1239/Class - II of IS: 3589 i/c fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. in ground including welding, excavation & providing cement concrete blocks as supports, anticorrosive treatment with coaltar/asphalt tape as per IS 10221, refilling the trench etc. of following sizes complete as required.					
33.5.1	200 mm. dia (wall thickness = 6.3 mm)	20	Mtr	7251.00	145020.00	27.6.1
33.5.2	150 mm. Dia	300	Mtr	5104.00	1531200.00	27.6.1
33.6	Providing, laying, testing & commissioning of 'C' class heavy duty MS pipe conforming to IS 3589/IS 1239 including Welding, fittings like elbows, tees, flanges, tapers, nuts bolts, gaskets etc. and fixing the pipe on the wall/ceiling with suitable clamp/support frame and painting with two or more coats of synthetic enamel paint of required shade complete as required :					
33.6.1	25 mm dia	400	Mtr	920.00	368000.00	27.7.1
33.6.2	32 mm dia	200	Mtr	1039.00	207800.00	27.7.2
33.6.3	40 mm dia	200	Mtr	1259.00	251800.00	27.7.3
33.6.4	50 mm dia	200	Mtr	1557.00	311400.00	27.7.4
33.6.5	65 mm dia	200	Mtr	1955.00	391000.00	27.7.5
33.6.6	80 mm dia	100	Mtr	2277.00	227700.00	27.7.6
33.6.7	100 mm dia	300	Mtr	3077.00	923100.00	27.7.7
33.6.8	150 mm dia	350	Mtr	4299.00	1504650.00	27.7.8
33.6.9	200 mm dia (wall thickness 6.3 mm)	30	Mtr	6620.00	198600.00	27.7.9
33.6.10	250 mm dia (wall thickness 6.3 mm)	20	Mtr	8023.00	160460.00	27.7.10
33.7	Supplying and fixing single headed internal hydrant valve with instantaneous Gunmetal/ Stainless Steel coupling of 63 mm dia with cast iron wheel ISI marked conforming to S 5290 (Type -A) with blank Gunmetal/ Stainless Steel cap and chain as required :					
33.7.1	i)Single headed Stainless steel	8	Each	6632.00	53056.00	27.9.2
33.8	Supplying and fixing Single headed external yard hydrant valve with 1 No. 63 mm dia instantaneous FM Gunmetal/Stainless Steel coupling and cast iron wheel, ISI marked,					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

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	conforming to IS 5290 (type A) with blank Gunmetal/Stainless Steel cap and chain as required :					
33.8.1	Single headed Stainless steel	6	Each	6632.00	39792.00	27.10.2
33.9	Supplying, fixing, testing and commissioning of butterfly valve of PN 1.6 rating with bronze/gunmetal seat duly ISI marked complete with nuts, bolts, washers, gaskets conforming to IS 13095 of following sizes as required :					
33.9.1	65 mm dia	2	Each	4712.00	9424.00	27.11.3
33.9.2	80 mm dia	8	Each	5406.00	43248.00	27.11.4
33.9.3	100 mm dia	14	Each	7271.00	101794.00	27.11.5
33.9.4	150 mm dia	12	Each	9737.00	116844.00	27.11.6
33.9.5	200 mm dia	2	Each	16248.00	32496.00	27.11.7
33.9.6	250 mm dia	2	Each	21721.00	43442.00	27.11.8
33.1	Supplying, fixing, testing & commissioning of double flanged sluice valve of rating PN 1.6 with non rising spindle, bronze/gun metal seat, ISI marked complete with nuts, bolts, washers, gaskets and conforming to IS 780 of following sizes as required :					
33.10.1	80 mm dia	2	Each	11386.00	22772.00	27.12.4
33.10.2	150 mm dia	8	Each	24088.00	192704.00	27.12.6
33.10.3	200 mm dia	2	Each	41386.00	82772.00	27.12.7
33.11	Providing, installation, testing and commissioning of non-return valve of following sizes confirming to IS: 5312 complete with rubber gasket, GI bolts, nuts, washers etc.as required :					
33.11.1	80mm dia	2	Each	8255.00	16510.00	27.14.4
33.11.2	150mm dia	4	Each	18884.00	75536.00	27.14.7
33.11.3	200 mm dia	2	Each	30896.00	61792.00	27.14.8
33.12	Providing, installation, testing and commissioning of stainless steel Y-strainer fabricated out of 1.6 mm thick stainless steel, Grade 304, sheet with 3 mm dia holes with tainless teel flange.					
33.12.1	80 mm dia	2	Each	5117.00	10234.00	27.15.1
33.12.2	200 mm dia	2	Each	23571.00	47142.00	27.15.4
33.13	Supplying and fixing 63 mm dia, 15 m long RRL hose pipe with 63 mm dia male and female couplings duly bound with GI wire, rivets etc. conforming to IS 636 (type-A) as required :					
33.13.1	i)Stainless Steel (Grade 304)	28	Each	4667.00	130676.00	27.16.2
33.14	Supplying and fixing first-aid Hose Reel with MS construction spray painted in post office red, conforming to IS 884 complete with the following as required.					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	20 mm nominal internal dia water hose thermoplastic (Textile reinforced) type -2 as per IS: 12585					
	20 mm nominal internal dia gun metal globe valve & nozzle.					
	Drum and brackets for fixing the equipments on wall.					
	Connections from riser with 25 mm dia stop gun metal valve & M.S. Pipe and socket.					
33.14.1	30 mtr	8	Each	9440.00	75520.00	27.17.1
33.15	Supplying & fixing 63 mm dia gun metal short branch pipe with 20 mm nominal internal diameter size nozzle conforming to IS 903 suitable for instantaneous connection to interconnect hose pipe coupling as required :					
33.15.1	Stainless Steel (Grade 304)	14	Each	1756.00	24584.00	27.18.2
33.16	Supplying and fixing of fire brigade connection of cast iron body with gun metal male instantaneous inlet couplings complete with cap and chain as reqd. for suitable dia MS pipe connection conforming to IS 904 as required :					
33.16.1	4 way - 150 mm dia M.S. Pipe	2	Each	14820.00	29640.00	27.19.2
33.17	Supplying and fixing air vessel made of 250 mm dia, 8 mm thick MS sheet, 1200 mm in height with air release valve on top and flanged connection to riser, drain arrangement with 25 mm dia gun metal wheel valve with required accessories, pressure gauge and painting with synthetic enamel paint of approved shade as required.	4	Set	19402.00	77608.00	27.20
33.18	Providing & fixing of pressure switch in M.S. pipe line including connection etc. as required.	4	Each	1670.00	6680.00	27.22
33.19	Providing & fixing flow switch in following sizes M.S. pipe including connection etc as required.					
33.19.1	150mm dia	2	Each	9644.00	19288.00	27.23.2
33.19.2	Providing and fixing in position industrial type pressure gauges with gun metal / brass valves complete etc. as required.	10	Each	1491.00	14910.00	30.8

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

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33.20	Providing, fixing, testing & commissioning of installation control valve of cast iron body, brass/bronze working parts comprising of water motor alarm, bronze seat clapper, clapper arm and hydraulically driven mechanical gong bell to sound continuous alarm when the wet riser/sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc of following sizes as required:					
33.20.1	150mm dia	1	Each	50805.00	50805.00	27.24.3
	SPRINKLER SYSTEM					
33.21	Providing, fixing, testing & commissioning of 15mm dia quartzoid bulb type sprinklers of rating 68 °C with required accessories :					
33.21.1	Pendent Sprinkler	250	Each	599.00	149750.00	27.21.1
33.21.2	Upright Sprinkler	200	Each	599.00	119800.00	27.21.2
33.21.3	Horizontal side wall sprinkler	12	Each	699.00	8388.00	27.21.3
33.22	Supplying, installation, testing & commissioning of sprinkler flexible pipe (UL Listed) of stainless steel complete with 15 NPT on reducer thread with maximum working pressure of 175 PSI test pressure of 875 PSI (Burst) with branch line (Inlet) 25mm NPT male thread to sprinkler head (Outlet) 15mm NPT female thread with reducer, nipple, 2 side brackets, center bracket, stockbar of following sizes complete as required.					
33.22.1	1200mm	200	Each	1800.00	360000.00	27.25.3
33.22.2	1500mm	50	Each	1969.00	98450.00	27.25.4
33.23	Supplying, installation, testing and commissioning of 4.5 kG capacity stored pressure type carbon dioxide type fire extinguishers made from brand new seamless drawn steel cylinder as per IS 7285 with ISI mark, fitted with wheel valve as per IS 3224 with ISI mark, with discharge bend and horn and complete with initial charge as per IS 15683 with ISI mark, fire rating- 55B and wall bracket complete as required.	20	Each	8396.00	167920.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

33.24	Supplying, installation, testing and commissioning of ABC stored pressure type Fire extinguishers of 6 KG capacity with MAP-90% and fire rating - 6A:183B, fitted with discharge control valve and pressure gauge, filled with mono ammonium phosphate powder as per EN 3615 approved and supplied complete with initial charge as per IS: 15683 with ISI mark and wall bracket complete as required.	20	Each	4285.00	85700.00	MR
33.25	Supplying, installation, testing and commissioning of 2 kg capacity Eco Friendly, Stored pressure type filled with HFC 236 (clean agent fire extinguishant having Zero Ozone depletion potential) Clean Agent Fire Extinguishers with safety seal, pressure guage, controllable discharge mechanism, helium leak detection tested and conforming to IS 15683, with fire rating - 1A:21B etc. complete as required.	10	Each	16869.00	168690.00	MR
	Total=				10834910.00	
34	LIFT					
34.1	Supplying, Installation, Testing & Commissioning of following capacity passenger cum bed lift Machine room less (MRL) Bed lift with regenerative drive as per CPWD General Specification for Electrical Works (Part-III Lift & Escalator) 2003, BIS Codes, NBC 2016 as amended upto date having provision for barrier free access as per Harmonised Guidelines & Standards for Universal Accessibility in India - 2021 of MoHUA, serving different floors in the lift shaft as per detailed specifications enclosed and as under including all other equipment and accessories complete as required :- (i) Speed-1.0 MPS (ii) Floors-4(G+3) (iii) Travel-12 metres(approx) (iv) Stops & opening : 4 stops and 4 openings (v) Controller: A.C. variable voltage & variable frequency (vi) Automatic rescue device (ARD) complete with dry maintenance free batteries as required. (vii) Operation: Microprocessor based single automatic push button/simplex selective collective/ duplex collective					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	selective with/without attendant (viii) Power-415 Volts+10%, 3 phase, 50 Hz, 4 wires system (ix) Car Enclosure: Stainless steel scratch proof (Moon Rock/Honeycomb/ Hairline Finish) on all sides and stainless steel decorative ceiling with fans (indirect throw) and LED fitting. (x) The car flooring should be smooth and antiskid as approved by engineer-in-charge. (xi) Type of doors: (a) Car: Power operated, centre opening horizontal sliding stainless steel scratch proof (Moon Rock/Honeycomb/ Hairline Finish). (b) Landing doors: stainless steel scratch proof . (xii) A hand rail not less than 600mm long at 900mm above floor level to be fixed adjacent to control panel in the lift car. (xiii) Voice announcement system in the car to announce the position of the elevator in the hoist way as the car passes or stops at floor served by the elevator.						
	(xiv) Closed loop Control System, protection against power fluctuation, self diagnostic control, Landing doors 2 hours Fire rated, Overload detection and protection, Overspeed Governor, Dot Matrix LED D & P Indicators In Car & Landings, BMS Compatibility, tamper proof infrared curtain covering almost the entire height of the lift car door, Alarm horn, Anti Nuisance Operation, CCTV camera system with 4 MP IP camera, suitable NVR and HDD for 30 days storage backup , Firemen switch, 2/3 way intercom, Emergency Stop Switch with battery backup for fan and light fitting for 1 hour, pit ladder. (xv) The lift doors shall have a vision panel to enable persons with hearing impairment to signal for help or assistance in the event of an emergency. (xvi) An appropriate technological support be provided (Through emergency messaging services or alarms etc.) to respond to the emergency requirements of person						

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	with hearing impairment or deafness. (xvii) In case of failure of ARD or other electronic devices, a provision of manual rescue be provided.					
34.1.1	20 passenger (1360kg)	1	Each	2581451.00	2581451.00	21.3.1
	Total=				2581451.00	
35	UPS					
35.1	Online UPS- Input supply: Three Phase, Output supply: Three Phase. Supplying, installation, Testing & Commissioning of following capacity at full load (Unity Power Factor) at operating temperature 0 to 40 °C, Relative humidity 0 to 95%, Online double conversion true sine wave Uninterrupted hot swappable (allow for the replacement or addition of battery modules without shutting down the entire system) modular Power Supply (UPS) system with N+1 modules (N denotes total number of modules required for rated capacity). The UPS shall include a Rectifier, inverter, battery bank suitable for 30 minutes back up (Battery VAH capacity shall not be less than 1600 VAH per KVA of UPS rating per Hour backup time) on full load (Battery shall be VRLA, SMF in ABS Container) and Static Bypass switch along with manual bypass, suitable isolation transformer for additional protection against neutral faults etc. UPS shall have inbuilt phase sequence correction. The UPS systems offered are to be of the latest technology with Digital Control Microprocessor based for reliable operation using Insulated Gate Bipolar Transistor (IGBT)'s both for the rectifier & inverter (3 Level) with PWM (Pulse Width Modulation). The quality of design, manufacturing and inspection process should confirm to the relevant International standards such as IEC/EN/VDE. The operating efficiency of the UPS systems shall be >96% while operating on battery mode and delivering quality power to the 100% non-linear loads. Current total harmonic effect (THD) on the input grid shall be < 5% at 50 %load. (The required LC (inductor (L) and a capacitor (C)) filters shall be included					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	in UPS cost), extreme power factor kit to be included to limit the input power factor (PF) to 0.99 and output power factor shall be unity (i.e. kw rating of the UPS shall be kva rating x 1), however UPS shall be suitable to take load at 0.7 lagging to 0.7 leading power factor loads. UPS shall be suitable for incoming supply AC : 3Phase 400V +/- 20%, 50 Hz +/-5 Hz, AC Output voltage: 3Phase 415 Volt, 50 Hz +/- 0.2Hz, Overload capacity of 120% for 10 mins, Sine wave output. Non condensing, noise level less than 60db at 1 meter distance, protections: Input Under voltage over voltage, abnormal out voltage, battery over charging, output over current, short circuit protection, battery deep discharge protection, 10KV surge. UPS must comply with low voltage electromagnetic compatibility (EMC) achieved as per EN 6204, EN6204 Part I and Part 2, it shall be a Voltage and Frequency Independent (VFI)-type UPS. . Communication RS232/RS485/SNMP port open protocol for BMS integration, all hardware & software for IoT Communication as per approved by Engineering in charge. Required battery racks and interconnecting copper conductor cables of suitable size and connectors and all required accessories are inclusive of the cost). This system must provide a means for logging and alarming of all monitored points plus email notification. Forced air-cooling with integral inbuilt fans with redundancy (if one fan fail UPS should be able to handle at least 80% of the load, Noise Level 65 DB at 1 meter distance. The system shall be in compliance IEC 62040- 1,2 & 3, IS: 16242 and CPWD Specification. Display Panel (minimum) (In-build 5 inch or more LC Display / LED) to display : a) Input: Voltage, current, Frequency. b) Bypass: Voltage, Frequency. c) Output: Voltage, frequency, Current. d) Battery: Voltage, Capacity. e) Load: KVA, KW, Percentage. f) Temperature: STS, Inverter, PFC. g) Event Logging &						
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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	Statistical Data (On LCD/LED): UPS should capture and display up to 3000 events like: Over temperature / DC Bus Fail / Fan Fail / Fuse Fail / Overload / Short-circuit / Device Fail / Inverter Fail / Rectifier Fail / Bypass Fail, etc. h) Statistical Data: No. of power failures / Transfers to Bypass / Total Running time, etc. i) Mains Mode of Operation / Battery Mode of Operation / Bypass feeding the load / UPS Fault / Battery charging and discharging, overload, battery voltage and battery capacity. j) Audible Alarms : Mains Failure, Battery Low Alarm, UPS Overload, Fault, Shutdown, Input Over, Under Voltage, Output Over, Under Voltage, Battery Over, Under Voltage, Over Load and short circuit, Over Temperature. The UPS should have QR code which should contain drawing, test report OEM manual, Geo- Tag of manufacturing location etc .					
35.1.1	30 KVA (Each Power module shall be < 10 KVA)	1	Each	505748.00	505748.00	26.2.3
	Total=				505748.00	
36	EMERGENCY LIGHT & ILLUMINATED SIGNAGE					
36.1	Supplying and fixing of self contained rechargeable LED emergency egress routes lighting type ceiling suspended Exit/Entry Signage made of 22 SWG CRCA white powder coating housing having wattage more than 11 watt with constant voltage charger i/c rechargeable Ni-Mh/Ni-cd battery capable of Emergency back-up upto 3 hours, double side directional arrow as required. single phase 230V 50Hz-IP 42, confirms to IS 9583-1981 & CE certified/ROHS compliance, complete with all other accessories i/c connection etc as required.	28	Each	5963.00	166964.00	MR
	Total=				166964.00	
37	STREET LIGHTING					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

37.1	Supplying Installation Testing & Commissioning of 7 mtrs. height GI Octagonal pole having top dia of 70 mm and bottom dia of 155 mm with sheet thickness of 4 mm made out of HT Steel sheet conforming to grade S355JO, E 350. The pole shaft shall be continuously tapered one section with single longitudinal welding and with 260 mm X 260 mm X 16 mm thick base plate including erection in Rainforced cement concrete 1 : 2 : 4 (1 cement : 2 coarse : 4 graded stone aggregate 20 mm nominal size) foundation with 4 nos foundation bolts M24 x 750 mm long J bolts including excavation and refilling with integral controlgear having Bakelite sheet complete with DIN rail, 6 Amp SP MCB , cable entry pipe of 50mm HDPE pipe in foundation, 1.0 mtr Long single arm Bracket,with tilt angle of 15 deg. etc. (Design & drawing must be approved by Engineer-in-Charge) etc. as required.	30	Each	33602.00	1008060.00	MR
37.2	Supplying Installation Testing & Commissioning of 7 mtrs. height GI Octagonal pole having top dia of 70 mm and bottom dia of 155 mm with sheet thickness of 4 mm made out of HT Steel sheet conforming to grade S355JO, E 350. The pole shaft shall be continuously tapered one section with Double longitudinal welding and with 260 mm X 260 mm X 16 mm thick base plate including erection in Rainforced cement concrete 1 : 2 : 4 (1 cement : 2 coarse : 4 graded stone aggregate 20 mm nominal size) foundation with 4 nos foundation bolts M24 x 750 mm long J bolts including excavation and refilling with integral controlgear having Bakelite sheet complete with DIN rail, 6 Amp SP MCB , cable entry pipe of 50mm HDPE pipe in foundation, 1.0 mtr Long double arm Bracket,with tilt angle of 15 deg. etc. (Design & drawing must be approved by Engineer-in-Charge) etc. as required.	8	Each	34758.00	278064.00	MR

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

37.3	LED Street light fixture, powder coated pressure die cast aluminium body (System lumen efficacy ≥ 105 <120 lm/Watt) Supplying, installation, Testing & Commissioning of Street light LED fixture powder coated pressure die cast aluminium body with driver as per the requirement with Driver efficiency >85%, Input voltage: 140-270 Volt AC, frequency 50/60 hz, Operating temp range -5 0C to 50 0C, internal surge protection of 5 KV L,N,E as per IEC 61000-4-5, Driver efficiency >85%,THD < 10% as per IEC 61000-3-2, P. F. ≥ 0.95 , IP-66,IK-10, CRI >70, under voltage and over voltage protection, EMIEMC As per CISPR -15, lenses for beam angle as per IESNA type I/II/III as per the width of the road and the project requirement., suitable to fit in up to 65mm dia pipe, life time (LED, Driver & electrical circuitry) of minimum 50000 Burning Hours with 70% of initial Lumen maintained till life ends as per LM80 extrapolation IES TM-21-11 report, CCT 3000°K / 4000°K / 5700°K /6500°K (As per ANSI Bin),SDCM (Standard Deviation Colour Matching) <5, Maximum power consumption should not more than the specified rating and Fixture shall be of relevant BIS standard complete in all respect i/c external connections with 1.5 sq.mm FRLS/HFFR, PVC insulated copper conductor single core cable and earthing etc. as required with Minimum 5 year OEM warranty. System lumen efficacy ≥ 105 <120 lm/Watt output .LM79 & LM80 Test report and all testing required for LED fixtures as per BIS shall be submitted. Shape size and CCT shall be as approved by Engineer-in-Charge as per requirement. (Thermal management: heat sink of aluminium housing such that LED junction temperature shall not rise above 90°C).					
37.3.1	72 watt	46	Each	1920.00	88320.00	8.12.13

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

37.4	Supplying, installation, testing & commissioning of CPRI approved outdoor IP54 street light panel having canopy at the top suitable for 415V, 3 Phase, 4 Wire, 50 Hz AC supply system of suitable size fabricated in compartmentalized design from CRCA sheet steel for frame work and covers, i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having astronomical Timer based system, with max 12 kW per phase load, 65A TP contactor rating and 63A FP MCB rating, suitable cable termination blocks, Auto/Manual switch, complete with outgoing 32A SP MCB- 4 Nos., inbuilt short circuit protection, Class H insulation, accessories and foundation etc as required.	1	Each	54762.00	54762.00	MR
37.5	Supplying and drawing following sizes of FRLS/HFFR PVC insulated copper conductor, single core cable in the existing surface/ recessed steel/ PVC conduit as required.					
37.5.1	3 x 1.5 sq. mm	400	Mtr	104.00	41600.00	1.17.3
	Total=				1470806.00	
38	SOLAR PV POWER GENERATION					
38.1	Solar Photovoltaic Power Plant Supplying Installation, Testing and Commissioning of on-grid Solar Photovoltaic Power Plant conforming to various applicable standards BIS, IEC, MNRE guidelines, the Central Electricity Authority Regulations and CPWD Specifications as amended up to date, consisting of Mono/Poly Crystalline silicon solar cells module, net metering facility, necessary control, protections, earthing, cabling, mounting structure, junction boxes, power conditioning units, Real time online web interfaced Data Monitoring System, Distribution panels, grid connecting arrangement, conduits, pipes, cable trays and other accessories etc. as required.a) High Energy Efficiency Solar Photovoltaic Module of capacity 330 Wp or above, manufactured in India, conforming to IS 14286/IEC 61215, IS/IEC 61730-Part-1, IS/IEC 61730-Part-2. Solar Photovoltaic Module conversion					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	efficiency shall not be less than 23% at STC with temperature coefficient of Pmax better than -0.30% per 0C. PV modules used in solar power plants/ systems must be warranted for their output peak watt capacity, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years. Solar Modules shall be designed to operate in relative humidity upto 100% with temperature between -10 0C and +85 0C. Further, each PV module used in any solar power project must have Radio frequency identification tag with information such as name of manufacturer, month and year of manufacturing, country of origin (separately for Solar cell and module), I-V curve, Unique Serial No and Model No of the module, Wattage, Im, Vm and FF, name of test lab issuing IEC certificate.					
	b)Power Conditioning Unit (PCU) of 350-800 V DC Input voltage range and 415 V AC, three phase, 4 wire, 50Hz +/- 2.5 Hz, output voltage suitable to generate AC with a variation of 10% at nominal voltage. Power with efficiency not less than 97%, total harmonic distortion less than 3% and suitable for ambient temperature from 0 to 50 0C, Minimum IP-65 for outdoor and Minimum IP 21 for indoor, Built-in meter and data logger, MPPT, switching devices IGBT/MOSFETs and controller Microprocessor /DSP. PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown. The PCU shall be able to withstand unbalanced load conforming to IEC standard with shutdown/standby mode. It must be provided with grid islanding along with manual disconnect pole isolation switch besides automatic disconnection. Minimum protections: Mains Under / Over Voltage, Over current, Over/Under grid frequency, Over temperature, Surge voltage induced at output due to external source, Short-circuit, Lightening, Anti Islanding (for grid synch. Mode) and other protections as per applicable standards. LCD/LED display of minimum					
Correction – Nil, Insertion – Nil, Deletion – Nil						
AE(P)(C)		AE(P)(E)		EE(C)		

	parameters: DC input voltage, DC current, AC Voltage and current (all 3 phases, in case of 3 phase), Instantaneous & cumulative AC output power, Daily DC energy produced and other parameters applicable standard. Communication interface RS 485 / RS 232.					
	c) Module mounting structure: The roof top solar plant generation units shall be installed by using supporting Aluminium/Galvanized MS structure (mass of zinc coating shall be as per IS4759) having minimum head room clearance of 2.4 meter above the terrace level / ground level. The mounting structure would be designed to sustain wind load and seismic parameter of the site of installation. All the structure shall be design as per applicable BIS code and the material shall also confirm the applicable BIS Code. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. The suitable arrangements for maintenance and cleaning shall be provided. d) Real time online web interfaced Data Monitoring System complete with accessories for various parameters such as Solar Irradiance, temperature, AC Output Voltage and current, Output Power, Power factor, DC Input Voltage and Current, Time Active, Time disabled, Time Idle, Power produced and other parameters as per standard practices. e) Array junction box & Main junction box with IP 65 protection and termination arrangement for incoming and outgoing cable along with glands, lugs and other accessories etc. as required. Each junction box shall be made of GRP/FRP/Powder Coated Aluminium /cast aluminium alloy with full dust, water & vermin proof arrangement with High quality Suitable capacity Metal Oxide Varistors(MOVs) (semiconductor diode with resistant applied voltage)/ surge arrestors and suitable Reverse Blocking Diodes, isolation switches isolate the DC input to Inverter, copper					

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

	bus bar etc. f) Lightning, surge voltage protection, earthing protection and grid islanding.					
	g) Cables: Connections & Interconnections by required size IR/UV protected XLPE insulated copper conductor 1.1 kV grade armored power and control cables(ISI Marked) along with supplying & fixing of necessary channel/conduit, GI cable trays, supports, lugs, thimble and other accessories etc. as required. h) DC Distribution Board And AC Distribution Panel Board: IP65, free standing, metal cladded, having copper bus bar, having required protection and control gears, connection-interconnection, etc. as required.	60	kWp	54280.00	3256800.00	DSR-2217.1
	Total=				3256800.00	

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

PART – E:

Proforma for Quoting Rates

Correction – Nil,			
Insertion – Nil,			
Deletion – Nil	AE(P)(C)	AE(P)(E)	EE(C)

NIT No: 17/NIT/CE/CPWD/BBSR/2026-27					
Name of Work: Construction of IGNOU Regional Centre-cum-skill Centre Building at Rairangpur , Mayurbhanja district ,Odisha.					
Estimated cost put to Tender				Rs. 29,60,65,813/-	
PERFORMA FOR QUOTING THE RATES					
Name of Contractor					
Sr. No.	Name of component	Estimated cost (Rs.)	Percentage above/ below the Total Estimated Cost	% in figures	Total Cost (Rs.)
1	CIVIL PART	Rs. 21,83,63,033/-			
2	ELECTRICAL PART	Rs. 7,77,02,780/-			
Total Estimated Cost		Rs. 29,60,65,813/-			

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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**Central Public Works Department
Office Memorandum
No. DG/CON/Construction-2023/02**

ISSUED BY THE AUTHORITY OF DIRECTOR GENERAL, CPWD

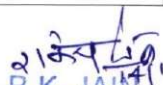
Nirman Bhawan, New Delhi

Dated: 14.11.2023

Subject: Amendments in Clause 32, Schedule F of Clause 11 and 32 of GCC 2023 Construction Works.

The following amendments in Clause 32, Schedule F of Clause 11 and 32 are made in the GCC 2023 for Construction Works.

Existing Provision	Modified Provision
Clause 32 Employment of Technical Staff and employees	Clause 32 Employment of Technical Staff and employees
Contractors Superintendence, Supervision, Technical Staff & Employees	Contractors Superintendence, Supervision, Technical Staff & Employees
Sl. No. (i) and (iii)	No change
(iv) No Provision	(iv) Building Information Model (BIM) professional shall be deployed by the contractor for the projects wherever required as mentioned in Schedule F. The BIM professional shall be available for the work as and when required by Engineer-in-Charge. The BIM professional will study 3D architectural models, architectural drawings generated from 3D models, service drawings and structural drawings. The BIM professional will interact with architects, planning & site engineers to get the clashes removed. The recovery shall be made from bill of contractor in case of non-deployment of BIM Professionals/technical staff as mentioned in Schedule 'F' of NIT without giving any notice in writing. The decision of Engineer-in-Charge in this respect is final and binding on the contractor.


R.K. JAIN
 (EE (Contact))

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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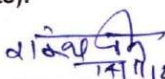
2/2 SCHEDULE 'F' Clause 11 Specifications to be followed for execution of work No provision	SCHEDULE 'F' Clause 11 Specifications to be followed for execution of work i. Building information model (BIM) is applicable and BIM professional to be deployed by contractor (NIT approving authority to write Yes or No)
SCHEDULE 'F' Clause 32 Requirement of Technical Representative(s) and recovery Rate Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10 year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers. No Provision	SCHEDULE 'F' Clause 32 Requirement of Technical Representative(s) and recovery Rate No Change. No Change. Minimum recovery for not deploying Building Information Model (BIM) professional shall be Rs. two lac per month or as mentioned above, whichever is higher.

This issues with the approval of DG CPWD.


 14.11.2023
 (V.P. Sahu)
 Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17 (1)/2023/Construction e-file 9162768

All CPWD and PWD officers for information and necessary action.
 (Through CPWD website).


 14/11/2023
 R.K. JAIN
 (EE (Contact))

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

AE(P)(C)

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Central Public Works Department

Office Memorandum

No. DG/CON/Construction 2023/03

ISSUED BY THE AUTHORITY OF DIRECTOR GENERAL, CPWD

Nirman Bhawan, New Delhi

Dated 06.12.2023

Subject: Modifications in Clause 12 and Schedule F for Clause 12 of GCC 2023 for Construction Works

The following amendments are made in the GCC 2023 Construction Works.

Existing provision	Modified provision
CONDITIONS OF CONTRACT Definitions 2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:- (i) to (xv) (xvi) No provision (xvii) No provision	CONDITIONS OF CONTRACT Definitions 2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:- (i) to (xv) No change (xvi) Extra items are those items which are not available in the contract. a. Non Schedule Extra Items are those items which are not available in the Standard Schedule of Rates specified in Schedule F. b. Scheduled Extra Items are those items which are available in the Standard Schedule of Rates specified in Schedule F. (xvii) Completion cost: The completion cost includes gross amount of work done, amount of extra items and deviations and escalation admissible as per agreement etc.
Clause 12 Deviations/ Variations Extent and Pricing The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the	Clause 12 Deviations/ Variations Extent and Pricing No Change

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R.K. JAIN
 (EE (Contact))

Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.	
The completion cost of any agreement for Maintenance works including works of upgradation, aesthetic, special repair, addition/ alteration should not exceed 1.25 times of Tendered amount. Any further deviation beyond this limit upto 1.5 times of tendered amount shall be approved by the authority mentioned in schedule 'F' with recorded reason and in exceptional case, ADG shall have full power to approve the deviation beyond 1.50 times of tendered amount with recorded reason and take suitable corrective action.	Deleted
No provision	The completion cost shall, in no case, exceed 1.5 times the contract amount. Contractor will devise a system to keep a watch on quantum of work taken up vis-a-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 does not exceed above limit. Work executed beyond above limit will neither be recorded nor be paid.


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Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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	Engineer-in-Charge will verify and confirm the alerts before assigning deviations and / or extra items to the contractor. If additional work(s) is required to complete defined scope of work beyond above limit then Engineer-in Charge may take up such work(s) separately. The contractor will not have any claims whatsoever on this account.
12.1 The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered, be extended, if requested by the contractor, as follows : i. In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus ii. 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge	12.1 The time for completion of the works shall, in the event of any deviations and extra items resulting in additional cost over the contract amount will be extended, if requested by the contractor, as follows : i. In the proportion to the additional cost of work, bears to the original contract amount plus ii. 25% of the time calculated in (i) above.
12.2 Deviation, Extra Items and Pricing In the case of extra item(s) (items which are not available in the contract), the contractor may within fifteen days of the receipt of order or occurrence of the item(s), submit claim for market rate(s), supported with proper analysis of rate and manufacturer's specification for the work, invoices, vouchers, etc. (as applicable), failing which the rate(s) approved later by the Engineer-in-Charge shall be final and binding. Where the contractor submits claim for market rate(s) in the manner prescribed above, the Engineer-in-Charge shall, within 45 days of the receipt of the claims, after giving consideration to the analysis of	12.2 Deviation, Extra Items and Pricing a) Non Schedule Extra Items - The contractor may, within fifteen days of the receipt of order to execute extra item or occurrence of the item(s), submit analysis of rate of extra item(s) based on the rates of materials available in basic rate of Standard Schedule of Rate mentioned in schedule F and market rates of the materials which are not available in standard schedule of rate mentioned in schedule F. For this purpose, the basic rate of materials available in Schedule of Rates mentioned in Schedule F will be enhanced or reduced by the applicable cost index, as the case


 06/11/2023
 R.K. JAIN
 (EE (Contact))

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Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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rates and other documents submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined.

may be.

The rates of the materials which are not available in Standard Schedule of Rates, mentioned in Schedule F, shall be based on, tax paid bills for the material as defined in manufacturer's specification.

Material rates from Standard Schedules of Rates shall be given priority in the analysis of rates.

The rate of extra item will be:-

- i. Analyzed rates as above multiplied by (tender amount divided by estimated cost put to tender), if tendered amount is below the estimated amount put to tender.
- ii. Analyzed rate, if the tendered amount is above the estimated amount put to tender.

Failing which the rate(s) approved later by the Engineer-in-Charge shall be final and binding.

Where the contractor submits **analysis of rate of extra items** in the manner prescribed above, the Engineer-in-Charge shall, within 60 days of the receipt of the **analysis of rate**, after giving consideration to the analysis of rates and other documents submitted by the contractor, determine the rate(s) of **extra items**. The contractor shall be paid in accordance with the rates so determined.

However provisional rates on the basis of invoice will be allowed by the Engineer-in-Charge. Invoice shall be accepted only for materials not available in the Standard Schedule of Rates mentioned in Schedule F. The extra items rate shall be finalized only after submission of tax paid bills by

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R.K. JAIN
(EE (Contact))

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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	the contractor to the Engineer-in-Charge as required above. The Engineer-in-Charge may apply the discount available in the market on the rate of materials taken from tax paid bills.
(b) No Provision	b) Scheduled Extra Items i. For percentage rate tenders, the extra item(s) shall be paid as per the Standard Schedule of Rates, mentioned in Schedule F, enhanced or reduced by the applicable cost index and further enhanced or reduced by percentage above/ below quoted by the contractor on estimated cost put to tender. ii. For item rate tenders, the extra item(s) shall be paid as per the said schedule rate enhanced or reduced by the applicable cost index and multiplied by (tender amount divided by estimated cost put to tender).
The rate(s) of extra items so determined by the Engineer-in-Charge shall be final and binding on the contractor, and shall not be arbitrable.	Deleted


 R.K. JAIN
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Deviation, deviated quantities, Pricing In the case of contract items which exceed the limit laid down in Schedule F, the contractor may within fifteen days of the receipt of order or occurrence of the excess, claim revision of the rates, supported with proper analysis of rate and invoices, vouchers, etc. (as applicable), for the quantity in excess of the above-mentioned limit. The Engineer-in-Charge shall within 45 days of receipt of the claims, after giving consideration to the analysis of rates and other documents submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined. The rate(s) so determined by the Engineer-in-Charge shall be final and binding on the contractor, and shall not be arbitrable.	c) Deviation, deviated quantities, Pricing In the case of contract items which exceed the limit laid down in Schedule F, the contractor may within fifteen days of the receipt of order or occurrence of the excess, claim revision of the rates, supported with proper analysis of rates and other documents, as per procedure described in para 12.2(a) or 12.2(b) (as applicable), for the quantities in excess of the above-mentioned limit. The Engineer-in-Charge shall within 45 60 days of receipt of the claims, after giving consideration to the analysis of rates and other documents submitted by the contractor, determine the rates and the contractor shall be paid in accordance with the rates so determined. In case, the contractor fails to submit his claim for revision of rates within 15 days of the receipt of order or occurrence of the excess, the Engineer-in-Charge shall determine the rate(s) of such items in accordance with para 12.2 (a) and 12.2 (b) without giving any notice to the contractor. The rates so determined by the Engineer-in-Charge shall be final and binding. The rate(s) of extra items and deviated items so determined by the Engineer-in-Charge shall be final and binding on the contractor.
12.3 In the case of contract items which exceed the limit laid down in Schedule F, the Engineer-in-Charge shall after giving notice to the contractor within 30 days of submission of that bill by the contractor which contains such item(s), and after taking into consideration any reply received from the contractor within 15 days of the issue of such notice, reduce the rate for quantity in excess of the above-mentioned limit on the basis of market rates, within 30 days of the expiry	Deleted


R.K. JAIN
 (EE (Contact))

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Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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of the said period of 15 days, and the contractor shall be paid in accordance with the rates so determined. The rate(s) so determined by the Engineer-in-Charge shall be final and binding on the contractor, and shall not be arbitrable	
12.4 The cost of any operation necessarily admissible for such operations.	12.3 The cost of any operation necessarily admissible for such operations.
12.4 No provision	12.4 Cost index Latest available Cost index at the time of beginning of execution of extra item and deviation shall be used in sub-clauses 12.2 (a), 12.2 (b) and 12.2 (c) for calculation of rates of extra items.
12.5 No provision	12.5 Labour rates Labour rates will be based on latest available circulars issued by Central Govt. or State Govt. whichever are higher as well as applicable for the work.
PROFORMA OF SCHEDULES (Separate Performa for Civil, Elect.& Hort. Works in case of Composite Tenders) SCHEDULE 'F' Clause 12 Authority to decide deviation upto 1.5 time of tendered amount	PROFORMA OF SCHEDULES (Separate Performa for Civil, Elect.& Hort. Works in case of Composite Tenders) SCHEDULE 'F' Clause 12 Deleted
12.2 & 12.3 Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building work	12.2 (c) Deviation Limit beyond which clauses 12.2 (c) shall apply for building work

21/12/23
R.K. JAIN
(EE (Contract))

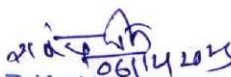
12.4	
(i) Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)	(i) Deviation Limit beyond which clauses 12.2 (c) shall apply for foundation work (except items mentioned in earth work subhead in DSR and related items)
(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items	(ii) Deviation Limit for items mentioned in earth work subhead of DSR and related items

This OM is applicable for all NITs issued w.e.f. date of issue of this OM.
This issues with the approval of DG CPWD.


06/12/2023
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/Construction/2023 e-file no 9163323
All CPWD and PWD officers for information and necessary action.
(Through CPWD website).


06/11/2023
R.K. JAIN
(EE (Contact))

केन्द्रीय लोक निर्माण विभाग

कार्यालय ज्ञापन

No. DG/CON/Construction 2023/04

ISSUED BY THE AUTHORITY OF DIRECTOR GENERAL, CPWD

Nirman Bhawan, New Delhi

Dated: 08.12.2023

Subject: Modifications in Conditions of Contract, Clause 5 and schedule F in clause 5 of GCC 2023 Construction Works

The following amendments are made in the GCC 2023 for Construction works.

Existing Provision	Modified Provision
CONDITIONS OF CONTRACT	CONDITIONS OF CONTRACT
Definitions	Definitions
2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:-	2. No change:-
(i) to (xvii)	(i) to (xvii) No Change
(xviii) No provision	(xviii) Concurrent delay: Concurrent delays are those delays occurring in the work concurrently in any combination or combination of all delay fall under different sub clauses 5.2, 5.3 and 5.5.
Clause 5 Time and Extension for Delay	Clause 5 Time and Extension for Delay
The time allowed for execution of the Works as specified in the Schedule 'F' or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the work shall commence from such time period as mentioned in schedule 'F' or from the date of handing over of the site, notified by the Engineer-in-Charge, whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, the performance guarantee shall be forfeited by the Engineer in Charge and shall be absolutely at the disposal of the Government without prejudice to any other right or remedy available in law.	The time allowed for execution of the Works as specified in the Schedule 'F' or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the work shall commence from such time period as mentioned in schedule 'F' or from the date of handing over of the site, notified by the Engineer-in-Charge, whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid and such default continues even after time period specified in the notice in writing by the Engineer-in-Charge then the performance guarantee shall be forfeited by the Engineer-in-Charge and shall be absolutely at the disposal of the Government without prejudice to

दिनांक 08.12.2023
R.K. JAIN
(EE (Contact))

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Correction – Nil,
Insertion – Nil,
Deletion – Nil

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	any other right or remedy available in law. The contract shall stand determined when such decision of forfeiture of the performance guarantee is issued to the contractor.
5.1 As soon as possible but within 7 (seven) working days of award of work and in consideration of a. Schedule of handing over of site as specified in the Schedule 'F' b. Schedule of issue of designs as specified in the Schedule 'F', i. the Contractor shall submit a Time and Progress Chart for each mile stone. The Engineer-in-Charge may within 7 (seven) working 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 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. ii. 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.	5.1 The contractor as soon as possible but within 7 (seven) days of issue of letter of award of work shall submit a time and progress chart to the Engineer-in-Charge. Such chart shall be made in due consideration of a. Schedule of handing over of site as specified in the Schedule 'F' b. Schedule of issue of design(s) and drawing(s) as specified in the Schedule 'F', i. The Contractor shall submit a Time and Progress Chart for each milestone. The Engineer-in-Charge may within 7 (seven) days of receipt of such chart, make modifications thereafter, if any, and communicate the approved chart to the contractor, failing which the chart submitted by the contractor shall be deemed to be approved by the Engineer-in-Charge. 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. ii. In case of non-submission of time and progress chart by the contractor, the chart prepared by the Engineer-in-Charge shall be deemed to be final.

21/11/2023
R.K. JAIN
(EE (Contact))

Page 2 of 9

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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iii. The approval by the Engineer-in-Charge of such programme shall not relieve the contractor of any of the obligations under the contract. iv. 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 as per Schedule F to be decided by the NIT approving authority shall be made on per week or part basis in case of delay in submission of the monthly progress report v. No provision	iii. The approval by the Engineer-in-Charge of such programme shall not relieve the contractor of any of the obligations under the contract. iv. The contractor shall submit the Time and Progress Chart containing upto date progress of work using the mutually agreed software or in the format decided by Engineer-in-Charge. Such chart shall be submitted by the contractor on or before 5th day of each month failing which a recovery as mentioned in Schedule 'F' shall be made at the earliest from running account bill without any notice in this regard. v. While recording the hindrances in the progress of the work, due consideration should be given to the cause of hindrance. The hindrances shall be segregated in following categories : a) delays due to reasons beyond the control of both parties (sub-clause 5.2) b) delays attributable to the Department and concurrent delays (sub-clause 5.3). c) delays solely attributable to the contractor (sub-clause 5.5)
5.2 If the work(s) be delayed by:- i. force majeure, or ii. abnormally bad weather, or iii. serious loss or damage by fire, or iv. civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or v. delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in	5.2 Delays due to reasons beyond the control of both parties: If the work(s) delayed by:- i. force majeure, or ii. abnormally bad weather, or iii. serious loss or damage by fire, or iv. civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or v. delay on the part of other contractors or tradesmen engaged by Engineer-in- Charge in

R.K. JAIN
(EE (Contact))

Page 3 of 9

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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executing work not forming part of the Contract, or vi. any other cause like above which, in the reasoned opinion of the Engineer-in-Charge is beyond the Contractor's control	executing work not forming part of the Contract, or vi. any other cause like above which, in the reasoned opinion of the Engineer-in-Charge is beyond the Contractor's control.
Then upon the happening of any such event causing delay, the contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.	Then upon the happening of any such event causing delay, the contractor shall within 03 (three) days give online notice thereof through ERP Portal to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the work(s). The contractor shall have no claim on account of any hindrance in case notice(s) are not given by the contractor through ERP portal. The Engineer-in-Charge, on receipt of such notice(s) after considering the factual ground situation, shall either acknowledge or reject the notice(s) In case of rejection, the reason(s) for rejection shall be communicated by Engineer-in-Charge to the agency. The decision of Engineer-in-Charge with regard to nature of event causing delay, its start date and end date, as has been finalized during acknowledgement of notice, shall be final and binding. The end date of such events shall be recorded by Engineer-in-Charge either during acknowledgment of notice or subsequent to acknowledgement if end date of hindrance is after the date of acknowledgement of notice. In absence of notice by the contractor, Engineer-in-Charge or his representative(s) may record the events causing delay within 05 (five)

R.K. JAIN
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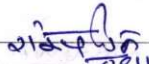
Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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	days of occurrence of hindrance on ERP portal provided further that not recording of events causing delay by the Engineer-in-Charge does not ipso facto entitle the contractor for any hindrance.
The contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed in sub clause 5.2.	No change.
5.3 In case the work is hindered in the opinion of the contractor, by the Department or for any reason / event, for which the Department is responsible, the authority as indicated in Schedule 'F' shall, if justified, give a fair and reasonable extension of time and reschedule the mile stones for completion of work.	5.3 Delays attributable to the department In case the work is hindered, in the opinion of the contractor, by the Department or for any reason / event, for which the Department is responsible, then upon the happening of such event causing delay, the Contractor shall within 3 (three) days give online notice there of through ERP Portal to the Engineer-in-Charge but shall nevertheless use constantly his best endeavours to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the work. The contractor shall not be entitled for any hindrance in case notice(s) are not given by the contractor through ERP portal. The Engineer-in-Charge, on receipt of such notice(s) after considering the factual ground situation, shall either acknowledge or reject the notice(s). In case of rejection, the reason(s) for rejection shall be communicated by Engineer-in-Charge to the agency. The decision of Engineer-in-Charge with regard to nature of event causing delay, its start date and end date, as has been finalized during acknowledgement of notice, shall be final and binding.


 R.K. JAIN
 (EE (Contact))

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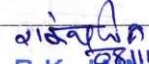
Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

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	The end date of such events shall be recorded by Engineer-in-Charge either during acknowledgment of notice or subsequent to acknowledgement if end date of hindrance is after the date of acknowledgement of notice. In absence of notice by the contractor, Engineer-in-Charge or his representative(s) may record the events causing delay within 05 (five) days of occurrence of hindrance on ERP portal provided further that not recording of events causing delay by the Engineer-in-Charge does not ipso facto entitle the contractor for any hindrance.
Such extension of time or rescheduling of milestone/s shall be without prejudice to any other right or remedy of the parties in contract or in law, provided further that for concurrent delays under this sub clause and sub clause 5.2 to the extent the delay is covered under sub clause 5.2 the contractor shall be entitled to only extension of time and no damages.	Such extension of time or rescheduling of milestone(s) shall be without prejudice to any other right or remedy of the parties in contract or in law, provided further that for concurrent delay(s) under this sub clause and sub clause 5.2 to the extent the delay is covered under sub clause 5.2, the contractor shall be entitled to only extension of time and shall have no claim of damages.
5.4 Request for rescheduling of Mile stones or extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed forms i.e. Form of application by the contractor for seeking rescheduling of milestones or Form of application by the contractor for seeking extension of time (Appendix - XVI) respectively to the authority as indicated in Schedule 'F'. The Contractor shall indicate in such a request the period by which rescheduling of milestone/s or extension of time is desired.	5.4 Rescheduling of milestone(s) and 'extended date of completion' The request for rescheduling of Milestone(s) and extension of time, shall be made by the Contractor through ERP Portal once in a month on the basis of hindrances accepted by Engineer-in-Charge under sub-clause 5.2 and sub-clause 5.3. The Contractor shall indicate in such a request number of days by which rescheduling of milestone(s) and/or extension of time is desired.
With every request for rescheduling of milestones, or if at any time the actual progress of work falls behind the approved programme by more than 10% of the stipulated period of completion of contract, the contractor shall produce a revised programme without causing any delay in execution	Deleted


R.K. JAIN
 (EE (Contact))

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Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

AE(P)(C)

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of the work. A recovery as specified in Schedule 'F' shall be made on per day basis in case of delay in submission of the revised programme. No provision	The authority as indicated in Schedule 'F', after examining the request, shall give a fair and reasonable extension of time for completion of work and simultaneously reschedule the milestone(s), if required so. The authority shall consider all the hindrances accepted as per sub-clauses 5.2, 5.3 and 5.5. The authority shall decide rescheduling of milestone(s) and extension of time within 21 (Twenty One) days of the request submitted by the contractor through ERP portal. In event of no request by the contractor for rescheduling of milestone(s) and extension of time, the authority as indicated in Schedule F, after affording opportunity to the contractor, may give fair and reasonable extension of time based on hindrances accepted by Engineer-in-Charge and reschedule the milestone(s) once in a month. Such justified extension of time shall determine the 'extended date' of completion of work.
5.4.1 In any such case the authority as indicated in Schedule 'F' may give a fair and reasonable extension of time for completion of work or reschedule the mile stones. E-in-C shall finalize/ reschedule a particular mile stone before taking an	5.4.1 Provided that the end date of any event causing delay shall not fall beyond the date of request for extension of time or rescheduling of milestone(s) by the contractor. In case end date of event falls beyond the date of submission of said request, then period for extension up to date of application shall be considered in the said request for events eligible for consideration and remaining period shall be applied in subsequent request of extension of time or rescheduling of milestone(s). Engineer-in-Charge shall finalize/ reschedule a particular mile stone

21/11/2023
R.K. JAIN
(EE (Cont

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Correction – Nil,
Insertion – Nil,
Deletion – Nil

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action against subsequent mile stone. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in Schedule 'F' in writing, within 21 days of the date of receipt of such request from the Contractor in prescribed form. In event of non-application by the contractor for extension of time E-in-C after affording opportunity to the contractor, may give, supported with a programme (as specified under 5.4 above), a fair and reasonable extension within a reasonable period of occurrence of the event.	before taking an action against subsequent mile stone. Such extension or rescheduling of the milestones shall be communicated to the Contractor by the authority as indicated in Schedule 'F' in writing, within 21 (twenty one) days of the date of receipt of such request from the Contractor on ERP Portal.
5.5 In case the work is delayed by any reasons, in the opinion of the Engineer- in-Charge, by the contractor for reasons beyond the events mentioned in clause 5.2 or clause 5.3 or clause 5.4 and beyond the justified extended date, without prejudice to right to take action under Clause 3, the Engineer-in-Charge may grant extension of time required for completion of work without rescheduling of milestones. The contractor shall be liable for levy of compensation for delay for such extension of time.	5.5 Delays attributable solely to the contractor In case the work is delayed by reasons solely attributable to the contractor, then Engineer-in-Charge or his representative(s) may record the event causing delay within 05 (five) days of occurrence of delay in the ERP portal. Contractor shall take the notice of the same for necessary action. He may submit his version, if any within 05 (Five) days. Engineer-in-Charge, considering the version of the contractor, will take decision on such recording of the event and the decision of the Engineer-in-Charge shall be final and binding. The contractor shall be liable for levy of compensation for such delays (i.e. for the period beyond the justified extended date of completion as determined in sub clause 5.4 and this default of contractor shall be dealt in conjunction with clause 2 of the contract. In case the work is delayed, due to hindrances attributable solely to the contractor, beyond the justified extended date (as stated in sub clause 5.4), the authority indicated in Schedule 'F', without prejudice to provisions to take action under Clause 3, may grant extension of

21/11/2023
R.K. JAIN
(EE (Contact))

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Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

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	time required for completion of work without rescheduling of milestone(s) and extend the date of completion.
PROFORMA OF SCHEDULES (Separate Performa for Civil, Elect.& Hort. Works in case of Composite Tenders)	PROFORMA OF SCHEDULES (Separate Performa for Civil, Elect. & Hort. Works in case of Composite Tenders)
SCHEDULE 'F'	SCHEDULE 'F'
Clause 5	Clause 5
Authority to decide:	
i. Extension of time (Engineer in Charge or Engineer in Charge of Major Component in case of Composite Contracts, as the case may be)	i. Authority to convey the decision of shifting of milestone and extension of time (Engineer-in-Charge or Engineer-in-Charge of Major Component in case of Composite Contracts, as the case may be)
ii. Rescheduling of mile stones (Superintending Engineer/ PM/CPM in Charge or Superintending Engineer/ PM/CPM in Charge of Major Component in case of Composite Contracts, as the case may be)	ii. Authority to decide rescheduling of milestone and extension of time (SE/SE&PD/CE/ CE&ED).
iii. Shifting of date of start in case of delay in handing over of site (Superintending Engineer/ PM/CPM in Charge or Superintending Engineer in Charge of Major Component in case of Composite Contracts, as the case may be)	iii. Shifting of date of start in case of delay in handing over of site (SE/SE&PD/CE/CE&ED).

This OM is applicable for all NITs uploaded after date of issue of this OM.

This is issued with the approval of DG CPWD.


 08.12.2023
 (वी. पी. साहू)

अधीक्षण अभियंता (सी.एंड एम.)

Issued from file No. CSQ/CM/17(1)/2023/ Construction e-file 9161772

के.लो.नि.वि. तथा लो.नि.वि. दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु (के.लो.नि.वि.वेबसाइट के माध्यम से)।


 R.K. JAIN
 (Contact)

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केन्द्रीय लोक निर्माण विभाग

कार्यालय झापन

No. DG/CON/Construction 2023/05

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 08.02.2024

Subject: Modifications in Conditions of Contract and Clause 19 of GCC 2023 for Construction Works

The following amendments are made in the GCC 2023 for Construction Works:

Existing provision	Modified provision
CONDITIONS OF CONTRACT Definitions 2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:- (i) to (xviii) (xix) No provision (xx) No provision	CONDITIONS OF CONTRACT Definitions 2. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them:- (i) to (xviii) No change (xix) Adolescent Person: A person who has completed his/her fourteenth year of age but has not completed his eighteenth year. (xx) Hazardous works: Hazardous process/works are the works as defined in the clause (cb) of the Factory Act, 1948.
Clause 19 Labour Laws to be complied by the Contractor The contractor shall comply with the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971. The contractor shall also obtain a valid licence under the said Act before the commencement of the work, and continue to have a valid licence until its completion. The contractor shall also comply with provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979.	Clause 19 Labour Laws to be complied by the Contractor No change No change No change

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

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The contractor shall also abide by the provisions of the Child and Adolescent Labour (Prohibition and Regulation) Act, 1986. The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996. Any failure to fulfil these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.	The contractor shall also abide by the provisions of the Child and Adolescent Labour (Prohibition and Regulation) Act, 1986, amended by Amendment Act No. 35 of 2016 and thereafter time to time. No change No change
Clause 19A No labour below the age of eighteen years shall be employed on the work.	Clause 19A No person below the age of fourteen years shall be employed on the work. However Adolescent Persons can be employed on non-hazardous works/process.
C.P.W.D. Contractor's Labour Regulations 2. DEFINITIONS i. (c) Who is an out worker, that is to say, person to whom any article or materials are premises under the control and management of the principal employer. No person below the age of 18 years shall be employed to act as a workman.	C.P.W.D. Contractor's Labour Regulations 2. DEFINITIONS i. (c) No change. No person below the age of fourteen years shall be employed on the work. However Adolescent Persons can be employed on non-hazardous works/process.

This issues with the approval of DG CPWD.

[Signature]
08.02.2024
(वी. पी. साहू)

अधीक्षण अभियंता(सी.एंड.एम.)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file 9169019

केलोनवि तथा लोनवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनवि वेबसाईट के माध्यम से)

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Central Public Works Department

Office Memorandum

No. DG/CON/Construction 2023/06

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

01.03.2024

NIRMAN BHAWAN, NEW DELHI

Dated: 20.02.2024

Subject: Modifications in Conditions of Contract, Clause 19 and 20 of GCC 2023 for Construction Works

The following amendments are made in the GCC 2023 for Construction Works:

Existing provision	Modified provision
CONDITIONS OF CONTRACT Definitions 9. Signing of Contract:- The successful tenderer/contractor, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of:- (i) to (iii) No Provision	CONDITIONS OF CONTRACT Definitions 9. Signing of Contract:- The successful tenderer, on acceptance of his tender by the Accepting Authority, shall, within 15 days from the stipulated date of start of the work, sign the contract consisting of:- (i) to (iii) No change In the event of successful tenderer being a firm/company, then the agreement shall be signed by all the partners or directors thereof individually. In the event of the absence of any partner/director, it shall be signed on his behalf by a person holding a power of attorney (duly notarized by notary public or board resolution in case of company) authorizing him to do so.
Clause 19 B Payment of Wages (i) The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as defined in the C.P.W.D. Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.	Clause 19 B Payment of Wages (i) The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as defined in the C.P.W.D. Contractor's Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971 and Gazette Notification 19.01.2017, S.O 188 (E) extra ordinary part 2 – sec. 3 (ii) amended time to time.

21/02/24
29/02/2024
R.K. JAIN
(EE (Contract))

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

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(v) The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.	Thus higher of the wages either notified by Govt. of India, Ministry of Labour and/or that notified by the local administration of the State Govt. both relevant to the place of work and the period of reckoning shall be paid by the contractor to the labourer . (v) The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, Gazette Notification 19.01.2017, S.O 188 (E) extra ordinary part 2 – sec. 3 (ii) and or the modifications thereof or any other laws relating thereto and the rules made there under from time to time.
Clause 20 Minimum Wages Act to be Complied With The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation and Abolition) Act, 1970, amended from time to time and rules framed there under and other labour laws affecting contract labour that may be brought into force from time to time.	Clause 20 Minimum Wages Act to be Complied With The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation and Abolition) Act, 1970, Gazette Notification 19.01.2017, S.O 188 (E) extra ordinary part 2 – sec. 3 (ii) amended from time to time and rules framed there under and other labour laws affecting contract labour that may be brought into force from time to time.

This issues with the approval of DG CPWD.

[Signature] 01.03.2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023 e-file no. 9163323

To all the concerned officers of CPWD/PWD for information and necessary action please. (Through CPWD Website)

[Signature]
R.K. JAIN 14/2/2024
(EE (C&M))

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

**Central Public Works Department
Office Memorandum**

No. DG/CON/Construction 2023/07

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

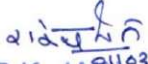
NIRMAN BHAWAN, NEW DELHI

Dated: 01.03.2024

Subject: Modifications in Clause 7 of GCC 2023 for Construction Works

The following amendments is made in the GCC 2023 for Construction Works :

Existing provision	Modified provision
Clause 7 Payment on intermediate certificate to be regarded as Advances No payment shall be made for work, estimated to cost Rs. twenty lacs or less till after the whole of the work shall have been completed and certificate of completion given. fixed for the same by the Engineer-in-Charge.	Clause 7 Payment on intermediate certificate to be regarded as Advances No change.
The contractor shall not be entitled to be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Schedule 'F', in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved.	The contractor shall not be paid any such interim payment if the gross work done together with net payment/ adjustment of advances for material collected, if any, since the last such payment is less than the amount specified in Schedule 'F', in which case the interim bill shall be prepared on the appointed date of the month after the requisite progress is achieved.
No provision	However, to expedite the progress of work, Engineer-in-Charge, on the request of contractor, may make interim payment(s) even before the net payment limit specified in schedule 'F' is achieved. In such case(s) no interest / compensation shall be recoverable from contractor. Such payment by Engineer-in-Charge shall not be construed as waiver of limit specified in schedule 'F' for subsequent interim payment(s).


R.K. JAIN
 (EE (Contact))

Correction – Nil,
Insertion – Nil,
Deletion – Nil

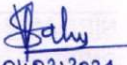
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Engineer-in-Charge shall arrange to have the bill verified by taking or causing to be taken, prescribed time limit.	No Change
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This issues with the approval of DG CPWD.


01/03/2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023/Const. e-file no. 9135972

To all the concerned officers of CPWD/PWD for information and necessary action please. (Through CPWD Website)

21/03/24
R.K. JAIN
(EE (Contact))

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

**Central Public Works Department
Office Memorandum**

No. DG/CON/Construction 2023/08

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

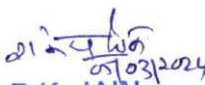
NIRMAN BHAWAN, NEW DELHI

Dated: 05.03.2024

Subject: Modifications in Clause 19 of GCC 2023 for Construction Works

The following amendments are made in the GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 19 Labour Laws to be complied by the Contractor	Clause 19 Labour Laws to be complied by the Contractor
The contractor shall comply with the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971.	No change
The contractor shall also obtain a valid licence under the said Act before the commencement of the work, and continue to have a valid licence until its completion.	No change
The contractor shall also comply with provisions of the Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979.	No change
The contractor shall also abide by the provisions of the Child and Adolescent Labour (Prohibition and Regulation) Act, 1986, amended by Amendment Act No. 35 of 2016 and thereafter time to time.	No change.
The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.	No change


R.K. JAIN
 (EE (Contact))

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

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No provision	The contractor shall also comply with the provisions of Sexual Harassment of Women at Workplace (Prevention Prohibition and Redressal) Act, 2013 and amendment thereafter time to time.
Any failure to fulfill these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.	Any failure to fulfil these requirements shall attract the penal provisions of the relevant act and in this contract
Clause 19 M No Provision	Clause 19 M Sexual Harassment of Women at Workplace The contractor shall comply with all provision(s) and guideline(s) of Sexual Harassment of Women at Workplace (Prevention Prohibition and Redressal) Act, 2013 and amendment thereafter time to time or any other rules framed under any labour law affecting women worker(s).

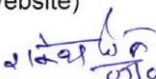
This issues with the approval of DG CPWD.


05/03/2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023 e-file no. 9163323

To all the concerned officers of CPWD/PWD for information and necessary action please. (Through CPWD Website)


21/2/24
05/03/2024
R.K. JAIN
(EE (Contact))

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

Central Public Works Department
Office Memorandum

No. DG/CON/Construction 2023/09

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 01.04.2024

Subject: Modifications in Clause 1, 8 and 41 of GCC 2023 for
Construction Works

The following amendments are made in the GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 1 Performance Guarantee	Clause 1 Performance Guarantee
Sl. No. (i) to (iv)	Sl. No. (i) to (iv) No Change
(v) On substantial Completion of any work which has been completed to such an extent that the intended purpose of the work is met and ready to use, then a provisional Completion certificate shall be recorded by the Engineer-in-Charge. The provisional certificate shall have appended with a list of outstanding balance item of work that need to be completed in accordance with the provisions of the contract.	(v) As per requirement of the client or otherwise specified in the contract, part completion certificate may be issued for the building(s)/ infrastructure project for the part(s) which have been completed in all respect and are ready for use. However, statutory approvals, Completion drawing of various services, wherever required, shall be obtained before handing over of building(s)/ part(s) of the project. Scope of the completed part(s) shall be mentioned in such part completion certificate.
This provisional completion certificate shall be recorded by the concerned Engineer-in-charge with the approval of Superintending Engineer /Project Manager / Chief Engineer/ Chief Project Manager, if required. After recording of the provisional Completion Certificate for the work by the competent authority, the 80 % of performance guarantee shall be returned to the contractor, without any interest.	The part completion certificate shall include outstanding balance work that need to be completed in accordance with the provisions of the contract. This part completion certificate shall be recorded by the authority as per contract value of work . After recording of the part Completion Certificate for the work by the competent authority, the proportionate amount of 80% of performance guarantee shall be returned to the contractor, without any interest.
However in case of contracts involving Maintenance of building and services /any other work after construction of same building and services/ other work, then 40% of performance guarantee shall be returned to the contractor, without any interest after recording the provisional Completion certificate.	However in case of contracts involving Maintenance of building and services /any other work after construction of same building and services/ other work, then proportionate amount of 40% of performance guarantee shall be returned to the contractor, without any interest after recording the part Completion certificate.

21590246
R.K. JAIN 04/2024
EE (Contract)

Correction – Nil,
Insertion – Nil,
Deletion – Nil

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Clause 8 Completion Certificate Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued.	Clause 8 Completion Certificate Within ten days of the completion of the work or on part completion of one or more building(s) out of independent building in a project or infrastructure project, as per requirement of client or otherwise specified in schedule F, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and shall furnish the contractor with a part or final completion certificate as the case may be, indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates.
But no final certificate sum actually realized by the sale thereof.	No change.
Clause 41 Release of Security deposit after labour clearance The Security Deposit security deposit and refund the balance amount.	Clause 41 Release of Security deposit after labour clearance No change.
No Provision	In case, if part completion certificate of work is recorded then security deposit shall be released only after recording final completion certificate of the work and after completion of defect liability period whichever is later or specified otherwise in the contract.

This issues with the approval of DG CPWD.

Sahu
01.04.2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file 9163323

All CPWD and PWD officers for information and necessary action.(Through CPWD website)

21/04/2024
R.K. JAIN
EE (Contract)

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

**Central Public Works Department
Office Memorandum**

No. DG/CON/Construction 2023/10

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 03-06-2024

Subject: Modifications in Clause 36 of GCC 2023 for Construction Works

The following amendment is made in the Clause 36 of GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 36 If relative working in CPWD then the contractor not allowed to tender The contractor shall not be <u>permitted</u> to tender for works in the CPWD circle (<u>Division in case of contractors of Horticulture/Nursery categories</u>) responsible for award and execution of contracts in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of the <u>Superintending Engineer</u> and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working <u>with him in any capacity</u> or are subsequently employed by him and who are near relatives to any <u>Gazetted Officer in the C.P.W.D. or in the Ministry of Housing and Urban Affairs</u>. Any breach of this condition by the contractor would render him liable to be <u>removed from the approved list of contractors of this Department. If however the contractor is registered in any other department, he shall be debarred from tendering in CPWD for any breach of this condition.</u> NOTE: By the term "near relatives" is meant wife, husband, parents and grandparents, children and grandchildren, brothers and sisters, uncles, aunts and cousins and their corresponding in-laws.	Clause 36 If relative working in CPWD then the contractor is not allowed to participate in the tendering process The contractor (enlisted or non-enlisted in CPWD) shall not be allowed to participate in the tender for work(s) in the CPWD Zone/circle /Division/Sub-Division responsible for award and/or execution of contract(s) in which his near relative is posted as Divisional Accountant or as an officer in any capacity between the grades of the Chief Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working or are subsequently employed by him and who are near relatives to any Officer working in the CPWD. Any breach of this condition by the contractor would render him liable to be debarred for a period upto two years from tendering in CPWD as decided by the accepting authority mentioned in Schedule F and his decision will be excepted from clause 25.
	No change.

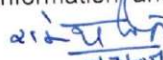
This issues with the approval of DG, CPWD.


03.06.2024
(V.P. Sahu)

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file 9135972

All CPWD and PWD officers for information and necessary action. (Through CPWD website)


R.K. JAIN
EE (Contract)

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

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EE(C)

Central Public Works Department

Office Memorandum

No. DG/CON/Construction 2023/11

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 03-06-2024

Subject: Additions in 'General Rules and Directions' of GCC 2023 for Construction Works

The following additions are made in GCC 2023 for Construction Works under 'General Rules and Directions':

Existing provision	Modified provision
General Rules and Directions Sl. No. 1 to 16 No Provision	General Rules and Directions No Change 17. Price Preference to SC/ST individual contractor for item rate/percentage rate tender: Price preference in quoted item rate/percentage rate tender shall be applicable to the individual enlisted/non-enlisted SC/ST contractor as under:- i. For work(s) upto and equal to an estimated cost of Rs.2.70 lakh a price preference upto 5% (with reference to the lowest valid tender) may be allowed in favor of individual SC/ST enlisted/non-enlisted contractor. No earnest money is required in such case(s). ii. For work(s) beyond an estimated cost of Rs. 2.70 lakh and upto and equal to estimated cost of Rs. 6.20 lakh, the price preference upto 5% (with reference to the lowest valid tender) may be allowed in favour of individual enlisted SC/ST contractor. However, earnest money at a reduced rate of ½% may be accepted in such cases. iii. The price preference upto 5% (with reference to the lowest valid price bid) may be allowed in favour of individual SC/ST contractor. The above concession shall be allowed only after proper verification of the individual contractor's claim of belonging to SC/ST community.
Schedule F No Provision	Schedule F Price Preference to SC/ST individual contractor is valid upto (date)

This issues with the approval of DG CPWD.

(V.P. Sahu)
03-06-2024

Superintending Engineer (C&M)

Issued from file No. CSQ/CM/17(1)/2023/Construction

e-file 9163323

All CPWD and PWD officers for information and necessary action.(Through CPWD website)

(R.K. JAIN)
R.K. JAIN
EE (Contract)

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/Construction 2023/12
ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 09.10.2024

Subject: Modifications in Clause 10A of GCC 2023 for Construction Works

The following amendment is made in the Clause 10A of GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 10A Materials to be provided by the contractor The contractor shall as specified in Schedule F. No Provision	Clause 10A Materials to be provided by the contractor (i) No Change (ii) Maintenance of Material at Site (MAS) Register (a) MAS register of the key materials including Cement, Steel Bitumen, Paint, Primer, Distemper, Varnishes, Tile Adhesive, Admixture, Anti termite chemical Water proofing compound material and other items as required by Engineer-in-Charge, and shall be maintained as per proforma in Appendix-XX of GCC. All the entries in the MAS registers are made by the designated staff of the contractor and same is reviewed weekly by the authorized representative and fortnightly by the Engineer-in-Charge. However, contractor is responsible for maintenance and safe custody of MAS registers.
(b) No provision	(b) The self-attested copies of tax paid bill of all the materials entered in the MAS register shall be submitted by the contractor at the time of review by representative of Engineer-in-Charge. In case of any doubt, genuineness of the tax paid bills; it can be verified by the representative of the Engineer-in-Charge or the Engineer-in-Charge, however, onus of genuineness of tax paid bills rest with the contractor.

[Signature]
RK SINGH
EE(Manual)

1
2

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

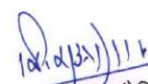
Appendix-XX

REGISTER OF MATERIAL AT SITE (MAS)

1. Division/Sub-division
2. Name of Work
3. Name of Article/Item
4. Estimated Requirements

S. No.	Date of Receipts (Details of Challans/ Bills, Specific location where Plants and Materials received/ Vehicle No.	Received from/ Issued to	Quantity Received	Date of issue	Specific location where Plants & Materials Displayed / Delivered / issued	Quantity Issued	Balance Quantity	Signature of authorized representative of contractor	Signature of authorized representative of Engineer-in-Charge/ AE/EE/	Remarks
1	2	3	4	5	6	7	8		9	10

This issues with the approval of DG, CPWD.


(दिनेश कुमार उज्जैनिया)
अधीक्षण अभियंता (सी.एंड एम.)

**Issued from file No. CSQ/CM/17(1)/ Construction/2024
e-file 9184028 (DFA/9301389)**

केलोनिवि तथा लोनिवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनिवि वेबसाईट के माध्यम से)


09.10.24
R K SINGH
EE(Manual)



Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

केन्द्रीय लोक निर्माण विभाग

कार्यालय ज्ञापन

No. DG/CON/Construction-2023/13

ISSUED BY THE AUTHORITY OF DIRECTOR GENERAL, CPWD

Nirman Bhawan, New Delhi

Dated: 29.10.2024

Subject: Modifications in Conditions of Contract, Clause 10A of GCC Construction Works 2023.

Following amendments are made in the GCC Construction Works 2023:-

Existing Provision	Modified Provision
Clause 10A: Materials to be provided by the Contractor (i) The contractor shall, thereof and in case of default, the Engineer-in-Charge may cause the same to be supplied and all costs which may attend such removal and substitution shall be borne by the Contractor. The contractor shall at his own expense, provide a material testing lab at the site for conducting routine field tests. The lab shall be equipped at least with the testing equipment as specified in schedule F. No Provision	No Change Field Laboratory: The contractor shall at his own expense, setup a material testing lab equipped with the testing equipment as specified in schedule F at site for conducting routine field test. External Laboratory: Letter for submitting sample(s) for testing of material shall be sent through e-mail to the Lab by authorized representative of Engineer-in-Charge or Engineer-in-Charge of the work along with name(s) of test(s) to be done on the material. The contractor shall collect the sample(s) from the site and submit it to the lab; make necessary payment for the testing charges. He will inform on the same day through email to authorized representative of Engineer-in-Charge and Engineer-in-Charge regarding submission of sample (s) and


 29.10.24
 R K SINGH
 EE(Manual)

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Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

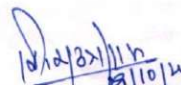
AE(P)(E)

EE(C)

No Provision	payment made to the lab. If he either fails to collect or submit the sample(s) to the lab within 03 days or in time as prescribed in the specifications, whichever is earlier, the Engineer-in-Charge shall collect and submit the sample(s) and make necessary payment for testing charges to the lab. In such case, Engineer-in-Charge shall make recovery on account of collection and submission of sample(s) to the lab and paid testing charges etc. from the next R/A bill / Final bill of the contractor. This action of Engineer-in-Charge shall be final and binding. If the contractor fails three times in collection and/or submitting sample(s) and/or fails to make payment for testing charges, the contractor shall be debarred from tendering in CPWD for a period of two years.
Sl. no. (ii) (a) and (b)	No change

This OM is applicable for all NITs uploaded after date of issue of this OM.

This is issued with the approval of DG CPWD.


(दिनेश कुमार उज्जैनिया)
अधीक्षण अभियंता (सी.एंड एम.)

Issued from file No. CSQ/CM/17(1)/2024/Construction e-file- 9184436 (DFA/9303295)

केलोनिवि तथा लोनिवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।

(केलोनिवि वेबसाईट के माध्यम से)


R K SINGH
28.10.24
EE(Manual)

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

केन्द्रीय लोक निर्माण विभाग

कार्यालय ज्ञापन

No. DG/CON/Construction 2023/14

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 03.01.2025

Subject: Modifications in General Rules and Directions of GCC 2023 for Construction Works.

The following amendments are made in the General Rules and Directions of GCC 2023 for Construction Works:

Existing provision	Modified provision
Applicable for Item Rate Tender only (CPWD - 8) 4 The rates rupee one. In case the lowest tendered amount (worked out on the basis of quoted rate of Individual items) of two or more contractors is same, then such lowest contractors may be asked to submit sealed revised offer quoting rate of each item of the schedule of quantity for all sub sections/sub heads as the case may be, but the revised quoted rate of each item of schedule of quantity for all sub sections/sub heads should not be higher than their respective original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis of revised offer. If the revised their tenders. In case of any be forfeited. In case all lowest contractors. Contractor of the work.	Applicable for Item Rate Tender only (CPWD - 8) 4 No change In case the lowest tendered amount (worked out on the basis of quoted rate of Individual items) of two or more contractors is same, then such lowest contractors may be asked to submit revised price bid online using e-tender website , quoting rate of each item of the schedule of quantity for all sub sections/sub heads as the case may be, on the revised template which has been sent to them by the Tender Inviting Authority (TIA) , but the revised quoted rate of each item of schedule of quantity for all sub sections/sub heads should not be higher than their respective original rate quoted already at the time of submission of tender. The lowest tender shall be decided on the basis of revised offer. No change
Applicable for Percentage Rate Tender only [CPWD- 7] 4B In case the lowest tendered amount (estimated cost $\pm$ amount worked on the basis of percentage above/below) of two or more contractors is same, such lowest contractors will be asked to submit sealed revised offer in the form of letter mentioning percentage above/ below on estimated cost of tender including all sub sections/sub	Applicable for Percentage Rate Tender only [CPWD- 7] 4B In case the lowest tendered amount (estimated cost $\pm$ amount worked on the basis of percentage above/below) of two or more contractors is same, such lowest contractors will be asked to submit revised price bid online quoting percentage above/ below on estimated cost of tender including all sub sections/sub heads as the case may

R K SINGH
 EE(Manual)

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Correction – Nil,
 Insertion – Nil,
 Deletion – Nil

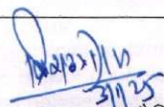
AE(P)(C)

AE(P)(E)

EE(C)

heads as the case may be, but the revised percentage quoted above/below on tendered cost or on each sub section/ sub head should not be higher than the percentage quoted at the time of submission of tender. The lowest tender shall be decided on the basis of revised offers.	be on the revised template which has been sent to them by the Tender Inviting Authority (TIA), but the revised percentage quoted above/below on tendered cost or on each sub section/ sub head should not be higher than the percentage quoted at the time of submission of tender. The lowest tender shall be decided on the basis of revised offers.
In case of any be forfeited.	
If the revised their tenders.	No change
In case all process of the work.	

This issues with the approval of DG, CPWD.


(दिनेश कुमार उपजैनिया)
अधीक्षण अभियंता (सी.एंड एम.)

**Issued from file No. CSQ/CM/17(1)/ Construction/2024
e-file 9185053 (DFA/9307326)**

केलोनवि तथा लोनवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनवि वेबसाईट के माध्यम से)


R K SINGH
EE(Manual)

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/ Construction 2023/15

ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 31.01.2025

Subject: Modifications in Clause 7A of GCC 2023 for Construction Works.

The following amendments are made in the Clause 7A of GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 7A No Running Account Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge.	Clause 7A (a) No Running Account Bill/Final Bill shall be paid for the work till the applicable labour licenses, registration with EPFO, ESIC and BOCW Welfare Board, whatever applicable are submitted by the contractor to the Engineer-in-Charge. (b) The following documents shall also be part of the bill submitted by the contractor (these documents shall be owned by the contractor) before making payment:- 1. Details of person employed with date of their employment up to previous month. 2. Documents of payment made to the employees directly into their bank accounts up to previous month. 3. Documents of attendance through biometric attendance or other mode up to previous month. 4. Documents of deposition of EPF and ESI deductions in the employee's accounts up to previous month. 5. Any penalty imposed on the agency for delay in disbursing payment and deposition of EPF and ESI deductions in the employee's accounts up to previous month. 6. Any other document(s) required as per statutory requirements and/or as directed by Engineer-in-Charge. (c) In case, any of the documents submitted by the contractor is found false/forged at a later date, action for debarment of contractor will be taken by the SE/CE concerned.

This issues with the approval of DG, CPWD.

(दिनेश कुमार उज्जैनिया)

अधीक्षण अभियंता (सी.एंड एम.)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file 9184028 (DFA/9313089)

केलोनवि तथा लोनवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।

(केलोनवि वेबसाईट के माध्यम से)

R K SINGH
EE(Manual)

Correction – Nil,

Insertion – Nil,

Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/Construction 2023/16
ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

Dated: 10.02.2025

Subject: Modifications in Clauses 7, 8, 9 and Schedule F of clause 8 of GCC 2023 for Construction Works.

The following amendments are made in the Clauses 7, 8, 9 and Schedule F of clause 8 of GCC 2023 for Construction Works:

Existing provision	Modified provision
Clause 7 Existing provisions No provision	Clause 7 No change In case of correction / rejection / short documents, it will be mandatory for Engineer-in- Charge to give recorded reasons for correction / rejection / submission of additional documents within seven days after submission of running bill by the contractor.
Clause 8 Completion Certificate (Issued vide OM No. DG/Construction-2023/09 dated 01.04.2024) Within ten days of the completion of the work or on part completion of one or more building(s) out of independent building in a project or infrastructure project, as per requirement of client or otherwise specified in schedule F, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and shall furnish the contractor with a part or final completion certificate as the case may be, indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates.	Clause 8 Completion Certificate Within ten days of the completion of the work or on part completion of one or more building(s) out of independent building in a project or infrastructure project, as per requirement of client or otherwise specified in schedule F, the contractor shall give notice of such completion to the Engineer-in-Charge and the Engineer-in-Charge, within seven days of receipt of intimation of completion from contractor will inspect the work and satisfy himself about completion of part /full work, then intimate to the concerned authorities as mentioned in Schedule F for inspection and issuance of part / final completion certificate. The concerned authorities will inspect the work and issue part/final completion certificate within thirty days of the receipt of such intimation. The Engineer-in-Charge shall furnish to the contractor a part / final completion certificate as the case may be, indicating defects (a) to


R K SINGH
EE(Manual)

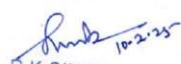
Page 1 of 3

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

But no final certificate sum actually realized by the sale thereof.	be rectified by the contractor and/or (b) for which payment will be made at reduced rates. No change.
Clause 9 Payment of Final Bill The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-Charge, will, as far as possible be made within the period of three months the period being reckoned from the date of receipt of the bill by the Engineer-in-Charge or his authorized Asstt. Engineer, complete with account of materials issued by the Department and dismantled materials.  R K SINGH EE(Manual)	Clause 9 Payment of Final Bill i. The final bill shall be submitted by the contractor to the Engineer-in-Charge in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final completion certificate furnished by the Engineer-in-Charge whichever is earlier. At the time of submission of the final bill, receipt will be given by the O/o Engineer-in-Charge. ii. In case of correction / rejection / short documents, it will be mandatory for Engineer-in- Charge to give recorded reasons for correction / rejection / submission of additional documents within fifteen days after submission of final measurement and/or final bill by the contractor. iii. Final bill will be accepted with all pre-requisite documents such as sanctioned copies of extra items and deviation in quantities, escalation statements, recovery statement, theoretical statement, final completion certificate, final extension of time case, mandatory tests statement, dismantled materials account and other documents as mentioned in clause 7A etc. iv. An undertaking alongwith the final bill will be submitted by the contractor that "I / we hereby undertake that all the measurements/claims payable under this contract have been included in the final bill and will not submit any other bill/claims in future under this agreement thereafter". v. No further claims shall be entertained from the contractor after submission of the final bill and these shall be deemed to have been waived off and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer in charge will, be made within the

If the final bill is submitted by the contractor within the period specified above and delay in payment of final bills is made by the department after prescribed time limit, a simple interest @ 5 % (five percent) per annum shall be paid to the contractor from the date of expiry of prescribed time limit, provided the final bill submitted by the contractor is found to be in order.	period of three months. The period of three months will be reckoned from the date of receipt of the bill in complete shape after necessary corrections / additional documents, by the Engineer-in-Charge. vi. In case of foreclosure / determination of contract, if the contractor fails to submit the EOT case, final measurement /bills within 30 days of foreclosure/ determination, the EOT case and final bill will be prepared and decided by the department. The final bill shall only be paid after withholding amount equivalent to maximum compensation to be levied on the contractor. vii. If the final bill, in complete shape, is submitted by the contractor within the period specified above and delay in payment of final bill is made by the department after prescribed time limit, a simple interest @5% (five percent) per annum may be paid to the contractor from the date of expiry of prescribed time limit, provided the final bill submitted by the contractor contains all the documents as mentioned in para – (iii) & (iv) above.
Schedule F Clause 8 No Provision	Schedule F Clause 8 Competent Authorities to inspect and issue part / final completion certificate (To be filled by NIT approving authority).

This issues with the approval of DG, CPWD.

(दिनेश कुमार उज्जैनिया)
अधीक्षण अभियंता (सी.एंड एम.)

Issued from file No. CSQ/CM/17(1)/2025/Construction
e-file 9190123 (DFA/9315615)

केलोनिवि तथा लोनिवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनिवि वेबसाईट के माध्यम से)

R K SINGH
EE(Manual)
10.2.25

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/ Construction 2023/17
ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

NIRMAN BHAWAN, NEW DELHI

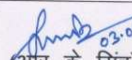
Dated: 03.03.2025

Subject: Modifications in Clause 14 of GCC 2023 for Construction Works 2023.

The following amendments are made in the Clause 14 of GCC 2023 for Construction Works 2023:

Existing provision	Modified provision
Clause 14 Carrying out part work at risk & cost of contractor If contractor: (iii) The Engineer- in-Charge without invoking action under clause 3 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to Government, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to : (a) Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or (b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.	Clause 14 Carrying out part work at risk & cost of contractor If contractor: (iii) The Engineer- in-Charge without invoking action under clause 3 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to Government, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to : (a) Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or (b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor. The contractor, from whom a part work / part incomplete work of any item(s), has been taken out of his hands, shall not be allowed to participate in the tendering/quotation process of part work / part incomplete work of any item(s).

This issues with the approval of DG, CPWD.


(आर. के. सिंह)
कार्यपालक अभियन्ता (एम.)

Issued from file No. CSQ/CM/17(1)/2023/Construction e-file-9184028 (DFA/9319526)

केलोनवि तथा लोनवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनवि वेबसाईट के माध्यम से)

R K SINGH
EE(Manual)

Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)

केन्द्रीय लोक निर्माण विभाग
कार्यालय ज्ञापन

No. DG/CON/Construction 2023/20
ISSUED BY AUTHORITY OF DIRECTOR GENERAL, CPWD

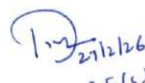
VIDYUT BHAWAN, NEW DELHI

Dated: 27.02.2026

Subject: Modifications in General Rules & Directions, Clause 1 and Schedule E of GCC 2023 Construction Works

The following modifications are made in the General Rules & Directions, Clause 1 and Schedule E of GCC 2023 Construction Works.

Existing provision	Modified provision
General Rules & Directions 11 (i) The Contractor whose tender is accepted, will be required to furnish performance guarantee at specified percentage of the tendered amount as mentioned in Schedule 'E' and within the period specified in Schedule F.	General Rules & Directions 11 (i) The Contractor whose tender is accepted, will be required to furnish performance guarantee as mentioned in Schedule 'E' and within the period specified in Schedule F.
Clause 1 Performance Guarantee (i) The contractor shall submit an irrevocable Performance Guarantee at specified percentage of the tendered amount as mentioned in Schedule 'E', in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance.	Clause 1 Performance Guarantee (i) The contractor shall submit an irrevocable Performance Guarantee as mentioned in Schedule 'E', in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified in Schedule 'F' from the date of issue of letter of acceptance.
Sl. No. (ii) to (v)	No change
SCHEDULE 'E' Reference to General Conditions of contract Sl. No. (i)	SCHEDULE 'E' Reference to General Conditions of contract No change


 27/2/26
 EE (C)
 D.P. Jindal
 EE (Contract)

Correction – Nil,
Insertion – Nil,
Deletion – Nil

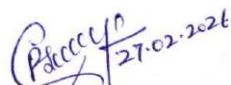
AE(P)(C)

AE(P)(E)

EE(C)

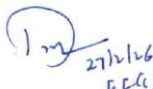
(ii) Performance Guarantee : 5% of tendered value.	(ii) Performance Guarantee : (a) 5% of tendered value or Estimated Cost Put to Tender (ECPT) (whichever is higher). (b) Where the tendered amount is less than eighty percent (80%) of the Estimated Cost Put to Tender (ECPT), the Performance Guarantee, 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.
Sl. No. (iii)	No change

This issues with the approval of DG, CPWD.


 (चन्द्र मोहन) अति. सी. एड एम.
 अधीक्षण अभियंता (सी. एड एम.) SE (C&M)

Issued from file No. CSQ/CM/17(1)/2026/Construction e-file 9212995 (DFA/ 9365660)

केलोनिवि तथा लोनिवि दिल्ली के सभी अधिकारियों को आवश्यक सूचना एवं कार्यवाही हेतु।
(केलोनिवि वेबसाईट के माध्यम से)


 27/2/26
 EE (C)
 D.P. Jindal
 EE (Contract)

Assistant Engineer (P) (C) O/o CE,CPWD, Bhubaneswar	Assistant Engineer (P) (E) O/o CE,CPWD, Bhubaneswar	Executive Engineer (C) O/o CE,CPWD, Bhubaneswar
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Correction – Nil,
Insertion – Nil,
Deletion – Nil

AE(P)(C)

AE(P)(E)

EE(C)