



**TENDER NO.  
7200037562**

**E-TENDER  
FOR**

**Name of Work : Supply, Installation, Testing and Commissioning of  
CCTV Surveillance System at BHR, MHR, Mahaveer  
Nagar & Liberty Garden Tunnel under  
AEWW(M)WS/North division**

**Website:** <http://portal.mcgm.gov.in/tenders>

**Office of the :- Assistant Engineer Water Work (Maint.) Western  
Suburb/North, Municipal Market Bldg. opp. to  
Pawandham temple, Mahavir Nagar, Near Harmony  
Tower, Borivali (West), Mumbai – 400 092.**

<b>Prepared By</b>	<b>Checked By</b>	<b>Verified By</b>	<b>Approved By</b>
<b>Sd/-</b>	<b>Sd/-</b>	<b>Sd/-</b>	<b>Sd/-</b>
<b>S.E.(BHR)</b>	<b>AEWW(M)WS/N-II</b>	<b>E.E.(Maint.)M.W.</b>	<b>DY.H.E.(Maint.)</b>

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# **SECTION 1**

## **E-TENDER NOTICE**

# **BRIHANMUMBAI MAHANAGARPALIKA**

Hydraulic Engineer's Department

**E- Tender Bid No.- 7200037562**

## **E-TENDER NOTICE**

Subject : Supply, Installation, Testing and Commissioning of CCTV Surveillance System at BHR, MHR, Mahaveer Nagar & Liberty Garden Tunnel under AEWW(M)WS/North division

The BRIHANMUMBAI MAHANAGARPALIKA (BMC) invites e-tender on **ITEM RATE basis** to appoint Bidder for the aforementioned work from contactor of repute, multidisciplinary engineering organizations i.e. eminent firm, Proprietary / Partnership Firms / Private Limited Companies / Public Limited Companies / Companies registered under the Indian companies' act 2013, the Bidders registered with the BRIHANMUMBAI MAHANAGARPALIKA, (BMC) in Class 'AA' as per old registration and Class 'A' as per new registration in Either Mechanical or Electrical category and / or firms dealing in the line and from the Bidders / firms equivalent and superior classes registered in Central or State Government /Semi Govt. Organization/Central or State Public Sector Undertakings, will be allowed subject to condition that, the Bidders who are not registered with BMC will have to apply for registering their firm within three months' time period from the award of contract, otherwise their Bid Security i.e. E.M.D (Earnest Money Deposit) will be forfeited/recovered and an amount equal to Registration Fee of respective class will be recovered as penalty. Bidding Process will comprise of THREE stages.

The application form can be downloaded from BMC's portal (<http://portal.BMC.gov.in>)

The application form can be downloaded from BMC's portal (<https://portal.mcgm.gov.in>) on payment of **Rs 12272/- ( Rs. 10400 + CGST @ 9 % + SGST 9% )**. (non refundable non transferable)The applicants not registered with BMC are mandated to get registered (Vendor Registration) with BMC for e-tendering process & obtain login credentials to participate in the online bidding process.

i) To download the application form, for those applicants not having vendor registration, need to apply first for vendor registration at the office of Account Officer (FAR), 3rd floor, Municipal Headquarter.

Followed by SRM login ID and password to be obtained from Central Purchase

i) Department (CPD), Office at Bakariadda, Opp. 'S' Bridge , Byculla (W), Mumbai – 400 011.

iii) For e-Tendering registration, enrollment for digital signature certificate and user manual, please refer to respective links provided in 'Tenders' tab. Vendors can get digital signature from any one of the Certifying Authorities (CA's) licensed by controller of certifying authorities namely, Safes crypt, IDRBT, National informatics center, TCS, CUSTOMS, MTNL, GNFC and e- Mudra CA.

<b>Name and location of work</b>	<b>Contract period</b>	<b>Estimated Cost of Project</b>
<b>Supply, Installation, Testing and Commissioning of CCTV Surveillance System BHR, MHR, Mahaveer Nagar &amp; Liberty Garden Tunnel under</b>	<b>6 Months</b>	Not applicable for item rate tender

In terms of the 3 stage system of e-tendering, a Bidder will be required to deposit, along with its Bid, an Earnest Money Deposit of **Rs.302900/- (Rupees Three lakhs Two Thousand Nine Hundred Only)** (the "EMD"), refundable in accordance to the relevant clause of bid document, from the Bid Due Date, except in the case of the selected Bidder whose Bid Security/EMD shall be retained. The Bidders will have to provide Earnest Money Deposit through the payment gateways while submitting the bids. The Bid shall be summarily rejected if it is not accompanied by the Earnest Money Deposit. The e-tender is available on BMC portal (<http://portal.BMC.gov.in>) as mentioned in the Header Data of the tender.

As per THREE Packet systems, the document for Packet A & B is to be uploaded by the Bidder in vendors' document online in Packet A, B. Packet A, B & C shall be opened on dates as mentioned in header data. All the responsive and eligible Bidders if they so wish can be present at the time of opening of bids, in the office of Chief Engineer (M&E). The Packet C shall be opened if bids submission in Packet A & B satisfies/includes all the requirements and same are found acceptable to the Authority.

The Municipal Commissioner reserves the right to reject all or any of the e-tender(s) without assigning any reasons at any stage.

The dates and time for submission and opening the bids are as shown in the Header Data. If there are any changes in the dates the same will be displayed on the BMC Portal. (<https://portal.mcgm.gov.in>). The Applicants interested for the above referred works may contact, AEWWS(N) at the following address on any working day during office hours

The applicants may wish to visit the site under reference located **Assistant Engineer Water Work (Maint.) Western Suburb/North, Near Harmony Tower, Borivali (West) Mumbai** and can collect the information of the present status from the department who has invited the bids..

**Office of the :-** Assistant Engineer Water Work (Maint.) Western Suburb/North,  
Municipal Market Bldg. opp. to Pawandham temple, Mahavir Nagar,  
Near Harmony Tower, Borivali (West), Mumbai-92.

The BMC reserves the rights to accept any of the application or reject any or all the application received for above works, without assigning any reasons thereof. The information regarding above subject matter is available on Website of BMC. (<http://portal.mcgm.gov.in/tenders>).

**Sd/-**

**Dy. Hydraulic Engineer (Maintenance)**

**BRIHANMUMBAI MAHANAGARPALIKA**  
(HYDRAULIC ENGINEERS DEPARTMENT)

**e-Tender Notice**

**HEADER DATA**

Tender Document No. -----	<b>7200037562</b>
Name of Organization	<b>BRIHANMUMBAI MAHANAGARPALIKA</b>
Subject	Supply, Installation, Testing and Commissioning of CCTV Surveillance System at BHR, MHR, Mahaveer Nagar & Liberty Garden Tunnel under AEWW(M)WS/North division.
Cost of Tender	<b>Rs. 12272/- (Rs.10,400/ + GST 18 %)</b> (non refundable non transferable)
Cost of E-Tender(Estimated Cost)	<b>Not applicable as Item rate tender</b>
Bid Security Deposit/ EMD	<b>Rs. 3,02,900/-</b>
Date of issue and sale of tender	19 /10 /2022 from 11:00Hrs
Last date & time for sale of tender & Receipt of Bid Security Deposit	09 / 11 /2022 upto 15:50Hrs
Submission of Packet A, B & Packet C(Online)	09 / 11 /2022 upto16:00Hrs
Pre-Bid Meeting	Applicable
Opening of Packet A	11 / 11 /2022 after 16.05Hrs
Opening of Packet B	11 / 11 /2022 after 16:10Hrs.
Opening of Packet C & Folder 'C' (Commercial Packet)	21 / 11 /2022 after 15:00Hrs
Website	<a href="http://portal.mcgm.gov.in">http://portal.mcgm.gov.in</a>
Address for communication	Assistant Engineer Water Work (Maint.) Western Suburb/North, Municipal Market Bldg. opp. to Pawandham temple, Mahavir Nagar, Near Harmony Tower, Borivali (West), Mumbai – 400
Venue for opening of bid	On line in Office of Assistant Engineer Water Work (Maint.) Western Suburb/North, Municipal Market Bldg. opp. to Pawandham temple, Mahavir Nagar, Near Harmony Tower, Borivali (West), Mumbai – 400 092.

**This tender document is not transferable.**

The **BMC** reserves the rights to accept any of the application or reject any or all the application received for above subject without assigning any reason thereof.

Sd/-

**Dy. Hydraulic Engineer (Maintenance)**

**SECTION  
2  
ELIGIBILITY(POST  
QUALIFICATION)  
CRITERIA**



## **LIGIBILITY CRITERIA**

### **Technical Capacity:**

The Bidder(s) in their own name should have satisfactorily completed the work of similar nature in BMC / Semi Govt. / Govt. & Public Sector Organizations **during last Seven (7) years** ending last day of month previous to the date of issue of tender as a prime Bidder (or as a nominated sub-Bidder, where the subcontract had involved similar nature of work as described in the scope of works in this bid document, provided further that all other qualification criteria are satisfied).

- (i) The Bidder shall be registered with the BMC Class 'A' as per new registration in either electrical or mechanical firm and the Bidder/firm equivalent and superior classes registered in Central/State government/Semi government organization/ Central or State public sector Undertaking.

**AND**

- (ii) Experience of having successfully completed similar works during last 7 years ending last day of month previous to the one in which tenders are invited should be either of the following

a) **Three similar completed works each** of value not less than  
**Rs. 91 Lakhs**

**OR**

b) **Two similar completed works each** of value not less than  
**Rs. 107 Lakhs**

**OR**

c) **One similar completed work** of value equal and or not less than  
**Rs 152 Lakhs**

(Past performance certificates, including the work order number and date, cost of the work, contract period, etc. shall be annexed by the Bidder while submitting the offer.)

## **Financial Capacity**

Achieved an average annual financial turnover as certified by “Chartered Accountant” equal to **Rs. 91 Lakh** of work in **last three (3) financial years** immediately preceding the Financial Year in which bids are issued.

The value of executed works shall be brought to current costing level by enhancing the actual value of work at compound rate of 10 % per annum; calculated from the date of completion to last date of receipt of applications for tenders.

### **1.3 Similar Experience:**

For assessing the technical capacity of Regular, Routine and Maintenance works; similar work shall mean, satisfactorily executed / completed the work of Supply, Installation, Testing and Commissioning of CCTV Surveillance System and allied networking System in BMC / Semi Govt. / Govt., Public Sector organizations. ~~Building Construction OR Building Maintenance such as repairs/retrofitting /structural repairs OR construction/repairs of Asphalt/ Concrete roads OR laying/rehabilitation of sewer lines along with allied components OR laying/rehabilitation of water pipe lines in Cast Iron/ M.S. pipes / HDPE/ MDPE pipes OR repairs/maintenance/ construction of culverts over nullah~~

### **1.4 Bid Capacity: Not Applicable for M & E works**

~~The bid capacity of the prospective Bidders will be calculated as under:~~

~~Assessed Available Bid Capacity = (A\* N\* 2 - B)~~

~~Where, \_\_\_\_\_~~

~~A = Maximum value of Civil Engineering works executed in any one year (year means Financial year) during **the last five years** (updated to the price level of the Financial year in which bids are invited at a compounded rate of 10% per year) taking into account the completed works.~~

~~**N = Number of years** prescribed for completion of the Project/Works, **Including monsoon period**, for which these bids are being invited. (E.g. 7 months = 7/12 year) For every intervening onsoon 0.33 shall be added to N.~~

~~**B = Value of existing commitments** (only allotted works) on the last date of submission of bids as per bidding document and on-going works to be completed during the period of completion of the Project/Works for which these bids are being invited.~~

~~Note: The statement showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be attached along with certificates duly signed by the Engineer-in-Charge, not below the rank of an Executive Engineer or equivalent.~~

**Note:** The statement showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be attached along with certificates duly signed by the Engineer-in-Charge, not below the rank of an Executive Engineer or equivalent.

**Even though the Bidders meet the above qualifying criteria, they are subject to be disqualified if they have:**

- made misleading or false representation in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- Record for poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.

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# **SECTION 3**

# **DISCLAIMER**

## **DISCLAIMER**

The information contained in this e-tender document or provided to Applicant(s), whether verbally or in documentary or any other form, by or on behalf of the **BRIHANMUMBAI MAHANAGARPALIKA (BMC)**, hereafter also referred as “The Authority “, or any of its employees or advisors, is provided to Applicant(s) on the terms and conditions set out in this e-tender and such other terms and conditions subject to which such information is provided.

This e-tender includes statements, which reflect various assumptions and assessments arrived at by the **BRIHANMUMBAI MAHANAGARPALIKA (BMC)** in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Applicant may require. This e-tender may not be appropriate for all persons, and it is not possible for the **BRIHANMUMBAI MAHANAGARPALIKA (BMC)**, its employees or advisors to consider the investment objectives, financial situation and particular needs of each party who reads or uses this e- tender. The assumptions, assessments, statements and information contained in this e-tender may not be complete, accurate, adequate or correct. Each Applicant should therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this e-tender and obtain independent advice from appropriate sources.

Information provided in this e-tender to the Applicant(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The **BRIHANMUMBAI MAHANAGARPALIKA (BMC)** accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed here.

The **BRIHANMUMBAI MAHANAGARPALIKA (BMC)**, its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder, under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for

any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this e-tender or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the e-tender and any assessment, assumption, statement or information contained therein or deemed to form part of this e-tender or arising in any way with pre-qualification of Applicants for participation in the Bidding Process. The **BRIHANMUMBAI MAHANAGARPALIKA** (BMC) also accepts no liability of any nature whether resulting from negligence howsoever caused arising or otherwise from reliance of any Applicant upon the statements contained in this e-tender.

The **BRIHANMUMBAI MAHANAGARPALIKA** (BMC) may, in its absolute discretion but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this e-tender.

The issue of this e-tender does not imply that the **BRIHANMUMBAI MAHANAGARPALIKA** (BMC) is bound to select and short-list pre-qualified Applications for Bid Stage or to appoint the selected Bidder or Concessionaire, as the case may be, for the Project and the **BRIHANMUMBAI MAHANAGARPALIKA** (BMC) reserves the right to reject all or any of the Applications or Bids without assigning any reasons whatsoever.

The Applicant shall bear all its costs associated with or relating to the preparation and submission of its Application including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by The **BRIHANMUMBAI MAHANAGARPALIKA** (BMC) or any other costs incurred in connection with or relating to its Application. All such costs and expenses will remain with the Applicant and the **BRIHANMUMBAI MAHANAGARPALIKA** (BMC) shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by an Applicant in preparation or submission of the Application, regardless of the conduct or outcome of the Bidding Process.

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# **SECTION 4**

# **INTRODUCTION**

## **INTRODUCTION**

### **4.1 Background:**

The BRIHANMUMBAI MAHANAGARPALIKA covers an area of 437.71sq.kms.with a population of **1.24 Crores as per census of 2011**. The metropolis accounts major portion of India's international trade and government's revenue, from being one of the foremost centers of education, science and technological research and advancement.

The Mumbai Metropolis has historic tradition of strong civic activism dedicated to the cause of a better life for all its citizens. And it is the BRIHANMUMBAI MAHANAGARPALIKA (BMC), hereafter called the "corporation", is the primary agency responsible for urban governance in Greater Mumbai.

BMC (The Authority) is one of the largest local self-governments in the Asian Continent. In observance of historic traditions of strong civic activism, with the change in time and living conditions to match with the urbanization, BMC has mainly focused in providing almost all kinds of engineering services viz., Hydraulics, storm water drain, sewerage, water supply projects, roads, bridges, solid waste management, and environmental services. Beside this, the BMC is also providing dedicated services in various segments such as Health, Primary Education as well as the construction and maintenance of Public Markets and Slaughter Houses.

BMC is an organization having different departments, right from engineering depts. to health depts. Moreover BMC has other dept. like education, market, fire brigade dept., Octroi and other such departments where quite a good number of staff members are working.



#### **4.2 Scope of Work:**

This particular tender comes under the category of “ Regular, routine and maintenance works / Original and new construction work / ~~For Other Special Work~~”

#### **PREAMBLE**

The Hydraulic Engineer’s Department of Municipal Corporation of Greater Mumbai supplies about 3800 M.L.D. of water daily to over 14 million citizens of Mumbai. The water is supplied to various localities directly from trunk mains or thro’ reservoirs and tunnel stations. Pumping stations are installed at hilly areas where gravity supply is not possible.

The A.E.W.W.(M)W.S./North-II division carries out operation maintenance of various pumping station & reservoirs in ‘P’ & ‘R’ wards i.e. Western Suburbs / North. In addition to replacement & installation of new pumping stations where water supply is not fulfill is also carried out by this section.

**SECTION 5**

**E-TENDERING ONLINE**

**SUBMISSION**

**PROCESS**

## **E-TENDERING ONLINE SUBMISSION PROCESS**

The terminology of e-Tendering is solely depending upon policies in existence, guidelines and methodology adopted since decades. The SRM is only change in process of accepting and evaluation of tenders in addition to manual. The SAP module to be used in this E-tendering is known as Supplier Relationship Module (SRM). SRM is designed and introduced by ABM Knowledge ware Ltd. who will assist BMC in throughout the tendering process for successful implementation.

**NOTE:** This tendering process is covered under Information Technology ACT & Cyber Laws as applicable.

(1) In e-tendering process some of the terms and its definitions are to be read as under wherever it reflects in online tendering process.

Start Date read as “Sale date”

End Date read as “Submission Date”

Supplier read as “Bidder/Bidder”

Vendor read as “Bidder/Bidder”

Vendor Quotation read as “Bidder Bid/Offer”

Purchaser read as “Department/BMC”

I. Before entering in to online tendering process, the Bidders should complete the registration process so as to get User ID for E-tendering links. For this, the Bidders can access through Supplier registration via BMC Portal.

There are two methods for this registration :( II and III)

II. Transfer from R3 (registered Bidders with BMC) to SRM

a. Bidders already registered with BMC will approach to Vendor Transfer cell.

b. Submit his details such as (name, vendor code, address, registered Email ID, pan card etc.) to Vendor transfer cell.

c. BMC authority for Vendor Transfer, transfers the Vendor to SRM application from R3 system to SRM system.

d. Transferred Vendor receives User ID creation link on his supplied mail Id.

e. Vendor creates his User ID and Password for e-tendering applications by accessing link sent to his mail ID.

III. Online Self Registration (Temporary registration for applicant not registered

with BMC)

- a. Vendor fills up Self Registration form via accessing BMC portal.
- b. Vendor Transfer cell (same as mentioned above) accesses Supplier Registration system and accepts the Vendor request.
- c. Accepted Vendor receives User ID creation email with Link on his supplied mail Id.
- d. Vendor creates his User ID and Password for e-tendering application.

#### **IV. BIDDERS BIDDING:** Applicant will Quote and Upload Tender Documents

1. Access e-tender link of SRM Portal
2. Log in with User ID and Password
3. Selects desired Bid Invitation (he wants to bid)
4. To download tender documents Bidders will have to pay online Tender fee. The same can be done by accessing Pay Tender Fees option. By this one will be able to pay Tender fee through Payment Gateway-If transaction successful, Bidders can register his interest to participate. Without Registration one cannot quote for the Bid/Tender.
5. Applicant will download Tender Documents from Information from purchaser tab by  
  
Accessing Purchaser document folder through collaboration 'C' folder link.
6. Applicant will upload Packet A related and Packet B related & folder 'C' Documents in Packet A and Packet B & 'C' folder respectively by accessing these folders through "My Notes" Tab and collaboration folder link.
7. All the documents uploaded have to be digitally signed and saved. Bidders can procure  
  
there digital signature from any certified CA's in India.
8. Bid security deposit/EMD and ASD, if applicable, should be paid online as mentioned in tender.
9. For commercial details (in Packet C (commercial)) Bidders will fill data in Item Data tab in Service Line Item via details and quotes his "Percentage Variation" (i.e.% quoted) figure. (If entered „0" it will be treated as at par. By default the value is zero only.
10. Applicants to check the bid, digitally signs & save and submit his invitation.
11. Applicants can also save his uploaded documents/commercial information

without submitting the BID for future editing through “HOLD” option.

12. Please note that “Hold” action do not submit the Bid.

13. Applicants will receive confirmation once the Bid is submitted.

14. Bid creator (BMC) starts Bid Opening for **Packet A** after reaching End Date and Time and Bid Evaluation process starts.

As per Three Packet system, the document for Packet **A & B** are to be uploaded by the Bidder in 'Vendor's document' online in Packet A & B. Before purchasing/ downloading the tender copy, Bidder may refer to post- Qualification criteria mentioned in e-Tender Notice.

The Bidder shall pay the EMD/Bid Security through payment gateways before submission of Bid and shall upload the screenshot of receipt of payment in **Packet 'A'** instead of paying the EMD at any of the CFC centers in BMC Ward Offices.

The e-tender is available on BMC portal, <http://portal.mcgm.gov.in>, as mentioned in the Header Data / e-tender notice (Pg. 6) of the tender. The tenders duly filled in should be uploaded and submitted online on or before the end date of submission. The Packet **“A”**, **Packet “B” &**, **Packet “C” (Commercial)** of the Bidder will be opened as per the time-table shown in the Header Data in the office of **AEWW( Maint.)WS/North**.

The Municipal Commissioner reserves the right to reject all or any of the e-Tender(s) without assigning any reason at any stage. The dates and time for submission and opening the tenders are as shown in the Header Data / e-tender notice (Pg. 6). If there are any changes in the dates the same will be displayed on the BMC Portal (<http://portal.mcgm.gov.in>).

**SECTION 6**

**INSTRUCTIONS TO**

**APPLICANTS**

## **INSTRUCTIONS TO APPLICANTS**

- **Scope of Application**

The Authority wishes to receive Applications for Qualification in order to SELECT experienced and capable Applicants for the Bid Stage.

- **Eligibility of Applicants**

The **BRIHANMUMBAI MAHANAGARPALIKA (BMC)** invites e-tender on **item rate basis** to appoint Bidder for the aforementioned work from Bidders of repute, multidisciplinary engineering organizations i.e. eminent firm, Proprietary / Partnership Firms / Private Limited Companies / Public Limited Companies / Companies registered under the Indian companies' act 2013, the Bidders registered with the **BRIHANMUMBAI MAHANAGARPALIKA, (BMC)** in **Class 'AA' as per old registration and Class 'A' as per new registration in either Mechanical or Electrical category and / or firms dealing in the line** and from the Bidders/firms equivalent and superior classes registered in Central or State Government/Semi Govt. Organization/Central or State Public Sector Undertakings, will be allowed subject to condition that, the Bidders who are not registered with BMC will have to apply for registering their firm within three months' time period from the award of contract, otherwise their Bid Security i.e. E.M.D (Earnest Money Deposit) will be forfeited/recovered and an amount equal to Registration Fee of respective class will be recovered as penalty.

To be eligible for pre-qualification and short-listing, an Applicant shall fulfill the following conditions of eligibility.

- **Technical Capacity (For Routine Work)**

The Bidder(s) in their own name should have satisfactorily executed the work of similar nature like in BMC / Semi Govt. / Govt., Public Sector organizations during last seven (7) years ending last day of month previous to the one in which bids are invited as a prime Bidder (or as a nominated sub-Bidder, where the subcontract had involved similar nature of work as described in the scope of works in this bid document, provided further that all other qualification criteria are satisfied)

a) **Three similar completed works each** of value not less than the value equal to **Rs. 91 lakh** put to tender.

**OR**

b) **Two similar completed works each** of value not less than the value equal to **Rs. 107 lakh** put to tender

**OR**

**c) One similar completed** work of value equal and or not less than the **Rs. 152 lakh** put to tender

The value of completed works shall be brought to current costing level by enhancing the actual value of work at compound rate of 10 % per annum; calculated from the date of completion to last date of receipt of applications for tenders.

- **Financial Capacity**

Achieved an average annual financial turnover as certified by 'Chartered Accountant' (~~in all classes of civil engineering construction works only~~) shall be **Rs. 91 Lakh during last three (3) financial years.**

The value of completed works shall be brought to current costing level by enhancing the actual value of work at compound rate of 10 % per annum; calculated from the date of completion to last date of receipt of applications for tenders.

- **Similar Experience:**

For assessing the technical capacity of special works; similar work shall mean, satisfactorily executed / completed the work of Supply, Installation and Maintenance of CCTV Surveillance System and allied networking System in BMC / Semi Govt. / Govt., Public Sector / Pvt. Sector organizations during last seven (7) years.

**Note:** The statement showing the value of existing commitments and on-going works as well as the stipulated period of completion remaining for each of the works listed should be attached along with certificates duly signed by the Engineer-in Charge, not below the rank of an Executive Engineer or equivalent.

**Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:**

- made misleading or false representation in the forms, statements and attachments submitted in proof of the qualification requirements; and/or
- Record for poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc

#### **6.4 Technical Personnel**



(A) General Guidelines for Fixing Requirement of Technical Staff

Cost of work (Rs in	Requirement of Technical		Minimu Experience(year)	Designation
	Qualificati on	Number		
More than 1.5 to 5	i) Graduate Engineer	1	5	Principal Technical Representative
	ii) Graduate Engineer or Diploma Engineer	1	2	Project/Site Engineer
		4	5	Billing Engineer
Up to 1.5	i) Graduate Engineer or Diploma Engineer	4	2	Principal Technical Representative
		4	5	Project/Site Engineer/- Billing Engineer

- Notes-**
1. "Cost of work", in table above, shall mean the agreement amount of the work.
  2. However, the above requirement of technical staff in no way shall dilute the respective condition in Registration Rules of BMC.
  3. Rate of recovery in case of non-compliance of the clause will be stipulated at following rates:-

Sr. No.	Qualification	Experience(y ears)	Rate of Recovery
1	Project Manager with	10	Rs.30000/-
2	Graduate Engineer	5	Rs.25000/-
3	Graduate Engineer	2	Rs.15000/-
4	Diploma Engineer	5	Rs.15000/-

#### 6.5 TIME PERIOD OF THE PROJECT:

Entire project should be completed and delivered **within 6 Months** of time from the date of award of contract.

The time allowed for carrying out the work as entered in the Tender shall be strictly observed by the Bidder and shall be reckoned from the receipt of work order to the Bidder. The work shall throughout the stipulated period of the Contract be proceeded with all due diligence as time being deemed to be the essence of the contract on the part of the Bidder. On failing to do so, the Bidder shall pay as compensation an amount which

shall be governed as per Clause - 8(e) of Standard General Conditions of Contract.

~~The Bidder should complete the work as per phase given below :-~~

~~————— ¼ of the work in ————— .. ————— ¼ of the time~~

~~————— ½ of the work in ————— .. ————— ½ of the time~~

~~————— ¾ of the work in ————— .. ————— ¾ of the time~~

~~————— Full of the work in ————— .. ————— Full of the time~~

~~Full work will be completed in 12 months excluding monsoon-~~

The program for completion of work shall be a part of the Contract Document in the form of Bar Chart / GANTT Chart. The Bidder is supposed to carry out the work and keep the progress as per Bar Chart/GANTT Chart. The Bidder shall complete the work as per the Schedule given in the Contract and the program submitted by the Bidder.

### **G. Contract Execution**

All required documents for execution of the contract shall be submitted within 30 days from the date of issue of letter of acceptance. If the documents are not submitted within the stipulated time, a penalty of Rs 5000/- per day will be applicable to the Bidder. All contract documents need to be duly affixed with stamp duty properly signed along with evidence/proof of payment of security/contract deposit/ within 30 days from the date of letter of acceptance received by him.

**H.** If the amount of the Contract Deposit to be paid above is not paid within 30 days from the date of issue of Letter of Acceptance, the Tender / Bidder already accepted shall be considered as cancelled and legal steps will be taken against the Bidder for recovery of the amounts.

**I.** The amount of Security Deposit retained by the BMC shall be released after expiry of period up to which the Bidder has agreed to maintain the work in good order is over. In the event of the Bidder failing or neglecting to complete the rectification work within the period up to which the Bidder has agreed to maintain the work in good order, the amount of security deposit retained by BMC shall be adjusted towards the excess cost incurred by the Department on rectification work.

### **J. Action when whole of security deposit is forfeited:**

In any case in which under any Clause of this contract, the Bidder shall have rendered himself liable to pay compensation amounting to the whole of this security deposit whether paid in one sum or deducted by installments or in the case of abandonment of the work owing to serious illness or death of the Bidder or any other cause, the Engineer on behalf of the Municipal Commissioner shall have power to adopt any of the following process, as he may deem best suited to the interest of BMC -

- (a) To rescind the contract (for which recession notice in writing to the Bidder under the head of Executive Engineer shall be conclusive evidence) and in that case, the security deposit of the contract shall stand forfeited and be absolutely at the disposal of BMC.
- (b) To carry out the work or any part of the work departmentally debiting the Bidder with the cost of the work, expenditure incurred on tools and plant, and charges on additional supervisory staff including the cost of work-charged establishment employed for getting the un-executed part of the work completed and crediting him with the value of the work done departmentally in all respects in the same manner and at the same rates as if it had been carried out by the Bidder under the terms of his contract. The certificate of the Executive Engineer as to the costs and other allied expenses so incurred and as to the value of the work so done departmentally shall be final and conclusive against the Bidder.
- (c) To order that the work of the Bidder be measured up and to take such part thereof as shall be un-executed out of his hands, and to give it to another Bidder to complete, in which case all expenses incurred on advertisement for fixing a new contracting agency, additional supervisory staff including the cost of work charged establishment and the cost of the work executed by the new contract agency will be debited to the Bidder and the value of the work done or executed through the new Bidder shall be credited to the Bidder in all respects and in the same manner and at the same rates as if it had been carried out by the Bidder under the terms of his contract. The certificate of the Executive Engineer as to all the cost of the work and other expenses incurred as aforesaid for or in getting the un-executed work done by the new Bidder and as to the value of the work so done shall be final and conclusive against the Bidder.

In case the contract shall be rescinded under Clause (a) above, the Bidder shall not be entitled to recover or be paid any sum for any work therefore actually performed by him under this contract unless and until the Executive Engineer shall have certified in writing the performance of such work and the amount payable to him in respect thereof and he shall only be entitled to be paid the amount so certified. In the event of either of the courses referred to in Clause (b) or (c) being adopted and the cost of the

work executed departmentally or through a new Bidder and other allied expenses exceeding the value of such work credited to the Bidders amount of excess shall be deducted from any money due to the Bidder, by BMC under the contract or otherwise, howsoever, or from his security deposit or the sale proceeds thereof provided, however, the Bidder shall have no claim against BMC even if the certified value of the work done departmentally or through a new Bidder exceeds the certified cost of such work and allied expenses, provided always that whichever of the three courses mentioned in clauses (a), (b) or (c) is adopted by the Executive Engineer, the Bidder shall have no claim to compensation for any loss sustained by him by reason of his having purchase or procured any materials or entered in to any engagements or made any advance on account of or with a view to the execution of the work or the performance of the contract.

**K. Contract may be rescinded and security deposit forfeited for bribing a public officer or if Bidder becomes insolvent -**

If the Bidder assigns or sublets his contracts or attempt so to do, or become insolvent or commence any proceeding to get himself adjudicated and insolvent or make any composition with his creditors, or attempt so to do or if bribe, gratuity, gift, loan, perquisite, reward or advantage, pecuniary or otherwise, shall either directly or indirectly be given promised or offered by the Bidder or any of his servants or agents through any public officer, or person in the employ of BMC/Govt. in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract the Engineer In-charge may thereupon, by notice in writing rescind the contract and the Security Deposit of the Bidder shall thereupon stand forfeited and be absolutely at the disposal of BMC and the same consequences shall ensure as if the contract had been rescinded under above clause J hereof; and in addition the Bidder shall not be entitled to recover or be paid for any work therefore actually performed under the contract.

- **Submission of Tenders**

**PACKET – A**

**The Packet “A” shall contain scanned certified copies of the following documents.**

Scrutiny of this packet will be done strictly with reference to only the scanned copies of documents uploaded online in packet “A”

- a) Valid Registration Certificate.
- b) Valid Bank Solvency Certificate of Minimum Solvency amount as governed by Registration Rules in force for respective Class of Bidder for Civil and M&E works.
- c) Applicable provisions as per GST Act shall be followed.
- d) Certified copies of valid 'PAN' documents and photographs of the individuals, owners, Karta of Hindu undivided Family, firms, private limited companies, registered co-operative societies, partners of partnership firms and at least two Directors, if number of Directors are more than two in case of Private Limited Companies, as the case may be. However, in case of Public Limited companies, Semi Government Undertakings, Government Undertakings, no 'PAN' documents will be insisted.
- e) Latest Partnership Deed in case of Partnership firm duly registered with Chief Accountant Treasury) of BMC.
- f) The Bidders shall categorically provide their Email-ID in packet “A”.

**NOTE:**

- If the Bidder(s) withdraw tender offer during the tender validity period, his entire E.M.D shall be forfeited.
- If it is found that the Bidder has not submitted required curable documents in Packet “A” then, the shortfalls will be communicated to the Bidder through e-mail only and compliance required to be made within a time period of **three working days** otherwise they will be treated as non-responsive.

**PACKET – B**

**The Packet “B” shall contain scanned certified copies of the following documents**

- a. The list of similar type of works as stated in para “A” (Clause No. 2.1) of Post qualification successfully completed during the last Seven (07) years in prescribed proforma, in the role of prime Bidder. Information furnished in the prescribed proforma (Proforma – I) shall be supported by the certificate duly self-attested. Documents stating that it has successfully completed during the last Seven (07) years at least one contract of similar works as stated in para “A” of Post  
a. qualification.

- b. Authorization certificate form manufacturer as annexure "H"
- c. Annual financial turnover for **preceding three financial years as certified by Chartered Accountant** preceding the Financial Year in which bids are invited. **Copies of Applicants duly audited balance sheet and profit and loss account for the preceding three financial years preceding the Financial Year in which bids are invited.**

**i) ~~New and Original Works~~:** The Bidder should, undertake their own studies and **furnish with their bid**, a detailed construction planning and methodology supported with assessment study of requirements of equipment/plants & machineries to allow the employer to review their proposal. The Bidder shall ensure his commitment to make the arrangements of the required equipment on the day of commencement or with respect to the progress of the work in phases, as per the instructions of site in charge on an undertaking on Rs.500 stamp paper to be submitted along with the Bid in Packet B. However, this condition in no way shall dilute the respective condition in Registration Rules of BMC.

**ii)** Details of works in hand and for which bid already submitted (**Proforma VI-A & VI-B**) (original), along with copies of work orders & attested copies of percentage of works completed or part thereof.

**iii) ~~Statement showing assessed available Bid Capacity.~~**

**iv)** The undertaking on **Rs.500/-** stamp paper as per the pro-forma annexed in 'Annexure B & C'.

**The Bidders shall upload work plan as per the following outline:**

~~1 GANTT chart / PERT / CPM chart showing the completion of work within prescribed time period, considering major activities.~~

~~2. Organizational set up envisaged by the Bidders.~~

~~3. Plant & equipment proposed to be deployed for this work.~~

~~4. Site Offices and Laboratories proposed to be set up.~~

5. A note on how the whole work will be carried out (work plan including methodology).

~~6. Quality management plan.~~

7. All the activities included in the Scope of Work shall be covered in the work plan

**Note:**

- ~~i. Bidders shall submit the undertaking for equipment capability and other undertaking as such on a single Rs.500/- stamp paper.~~
- ~~ii. The Electrical / Mechanical work shall be got carried out by the civil Bidders through~~

~~the Bidders registered with BMC. in Electrical Category. Information about the registered Bidders shall be obtained from the office of the Ch.E. (M&E)/ E.E. (Monitoring & Registration Cell). Attested scanned copy of the valid registration certificate in Electrical Category shall be uploaded with the tender along with the undertaking from the registered Electrical Bidder stating his willingness to carry out the tender work.~~

- iii. The successful Bidder shall submit valid registration certificate under E.S.I.C., Act 1948, if the Bidder has more than 10 employees/persons on his establishment (in case of production by use of energy) and 20 employees/persons on his establishment (in case of production without use of energy) to BMC as and when demanded. In case of less employees/persons mentioned above then the successful Bidder has to submit an undertaking to that effect on Rs. 200 stamp paper as per circular u/no. CA/FRD/I/65 of 30.03.2013.
- iv. The successful Bidder shall submit valid registration certificate under E.P.F. & M.P., Act 1952, if Bidder has more than 20 employees/persons on his establishment, to BMC as and when demanded. In case if the successful Bidder has less employees/persons mentioned above then the successful Bidder has to submit an undertaking to that effect on Rs. 200 stamp paper as per circular u/no. CA/FRD/I/44 of 04.01.2013

**Note :** If it is found that the Bidder has not submitted required documents in Packet "B" except non curable defects then, the shortfalls will be communicated to the Bidder through **e-mail only** and compliance required to be made within a time period of three working days otherwise they will be treated as non-responsive.

### **PACKET – C**

Online Price offer shall be filled on BMC Portal. ~~Online tender filled in either percentage plus or minus (above or below), or at par. (There is no separate provision to quote % in physical form, this is a part in Header Data of online Tendering). For Packet "C' Bidder(s) will fill data in "Item Data Tab" in Service Line Item via Details and quotes his percentage variation figures. (If entered "0" it will be treated as "at par". By default the value is zero only).~~

**Note:**

- 1) In case of rebate/premium of 15% and above as quoted by the Bidder, the rate analysis of major items shall be submitted by L1 and L2 Bidder after demand notification by e-mail to Bidders by concerned A.E.W.W.(M)WS.North-II. The format for rate analysis is annexed at Annexure D.

- 2) **Rate analysis in prescribed format shall be submitted online to the engineer in-charge within 3 working days from the date of communication on email, failing which EMD will be forfeited and the bid will be rejected and next successful/ Responsive Bidder will be considered, thereafter, negotiation will be done with the said successive / responsive Bidder with respect to his quoted rates.**

**BID SECURITY OR EMD**

1. The Bidder shall furnish, as part of the Bid, Bid Security/EMD, in the amount specified in the Bid Data Sheet. This bid security shall be in favor of the authority mentioned in the Bid Data Sheet and shall be valid till the validity of the bid.
2. The Bidders shall pay the EMD online only instead paying the EMD at any of the CFC centers in BMC Ward Offices.
3. Any bid not accompanied by an acceptable Bid Security and not secured as indicated in sub- clause mentioned above, shall be rejected by the Employer as non-responsive.
4. The Bid Security of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Security Deposits.
5. The Bid Security/ EMD of L-3 and Bidder shall be refunded immediately after opening of financial bid but, the EMD/ASD submitted by the L-2 Bidder will be returned after obtaining Standing Committee Resolution.
6. **The Bid Security may be forfeited:**
  1. If the Bidder withdraws the Bid after bid opening (opening of technical qualification part of the bid during the period of Bid validity;
  2. In the case of a successful Bidder, if the Bidder fails within the specified time limit to:
    - i. sign the Agreement; and/or
    - ii. Furnish the required Security Deposits.
7. The cases wherein if the shortfalls are not complied by a Bidder, will be informed to Registration and Monitoring Cell. Such non-submission of documents will be considered as **"Intentional Avoidance"** and if three or more cases in 12 months are re-ported, shall be viewed seriously and disciplinary action against the defaulters such as banning/de-registration, etc. shall be taken by the registration cell with due approval of the concerned AMC.
8. In case of curable / non-curable defects due to non-fulfillment of requirement of BMC as prescribed & in the event, the Bidder becomes non-responsive & the 10% EMD will be forfeited and bid will be rejected. This shall be in addition to any forfeiture of proportionate EMD for curable defects as per other relevant clauses of the tender



9. In case of non-workable rate analysis and misleading information submitted by the Bidder, EMD shall be forfeited and bid will be rejected.

**Note: A) Curable Defect shall mean shortfalls in submission such as:**

- a. **Non-submission of following documents,**
  - i. **Valid Registration Certificate**
  - ii. **Valid Bank Solvency**
  - iii. **Sales Tax Registration Certificate (VAT), Goods and Service Tax Registration Certificate**
  - iv. **Certified Copies of PAN documents and photographs of individuals, owners, etc**
  - v. **Partnership Deed and any other documents**
  - vi. **Undertakings as mentioned in the tender document.**
- b) **Wrong calculation of Bid Capacity,**
- c) **No proper submission of experience certificates and other documents, etc. ( only supportive documents will allow for review or confirmation.)**

**Note:- In packet 'A' as well as packet 'B', 02 nos. of shortfall in curable defects will be allowed & 2% EMD will be forfeited for each shortfall thereafter.**

**B) Non-curable Defect shall mean**

- a. **In-adequate submission of EMD/ASD amount,**
- b. **In-adequacy of technical and financial capacity with respect to Eligibility criteria as stipulated in the tender.**

• **BID VALIDITY**

- a) **Bids shall remain valid for a period of not less than one eighty (180) days after the dead line date for bid submission specified in Bid Data Sheet. A bid valid for a shorter period shall be rejected by the Employer as non-responsive.**
- b) In exceptional circumstances, prior to expiry of the original time limit, the Employer may re-quest that the Bidders may extend the period of validity for a specified additional period. The request and the Bidders" responses shall be made in writing or by cable. A Bidder may refuse the request without forfeiting his Bid Security. A Bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his bid security for a period of the extension.

**6.14 DEFECT LIABILITY PERIOD**

- a) **Defect Liability Period is 3 years.** The Bidder is expected to carry out the SITC work of CCTV Surveillance system with allied work in Workmen like manner so as to meet the requirement and specification for the work/project. It is expected that the Workmanship and materials will be reasonably fit for the purpose for which they

are required.

- b) Defects or defective work is where standard and quality of workmanship and materials as specified in the contract is deficient. Defect is defined as a failure of the completed work / project to satisfy the express or implied quality or quantity obligations of the construction contract. Defective construction works are as the works which fail short of complying with the express descriptions or requirements of the contract, especially any drawings or specifications with any implied terms and conditions as to its quality, workmanship, durability, aesthetic, performance or design. Defects in construction projects are attributable to various reasons.
- c) Some of the defects are structural defects results in cracks or collapse of faulty defective plumbing, inadequate or faulty drainage system, inadequate or faulty ventilation, cooling or heating systems, inadequate fire systems etc. The defects could be various on accounts of different reasons for variety of the works / projects.
- d) The Engineering In charge/Project Officer shall issue the practical completion certificate for the project. During the Defect Liability Period which commences on completion of the work, the Engineering In charge shall inform or the Bidder is expected to be informed of any defective works by the Employer's representative of the defects and make good at Bidder's cost with an intention of giving opportunity to the Bidder of making good the defects appeared during that period. It is the Bidder's obligation under the contract to rectify the defects that appear during Defect Liability Period and the Bidder shall within a reasonable time after receipt of such instructions comply with the same at his own cost. The Engineering In charge/Project Officer shall issue a certificate to that effect and completion of making good defects shall be deemed for all the purpose of this contract to have taken place on the day named in such defect liability certificate.
- e) If defective work or workmanship or design have been knowingly covered-up or concealed so as to constitute fraud, commencement of the Defect Liability Period may be delayed. The decided period may be delayed until **discover** actually occurs on at least the defect could have been discovered with reasonable diligence, whichever is earlier.

f) The DLP shall be as below:

<b>Dept.</b>	<b>Type of works</b>	<b>DLP</b>
<b>Roads/ Bridge</b>	For cement concrete road/ Mastic-works	5 years
	Asphalt work	3 years
	Paver Block	3 years
	Structural work	5 years
	General works	5 years
<b>BM/SIC/HIC</b>	General works	3 years
	Waterproofing works	5 years
<b>Ward Works</b>	All ward level works	2 years
<b>Other Works</b>	Pot holes and pre-monsoon bad-patch repair work	1 year
<b>For other departmen</b>	<b>HE, WSP, SP, SWD, Garden</b>	<b>3 years</b>

g) Also, in case of defect, the Engineer shall give notice to the Bidder of any Defects before the end of the Defects Liability Period, which begins at. The Defects Liability Period shall be extended for as long as Defects remain to be corrected. Every time notice of Defect/Defects is given, the Bidder shall correct the notified Defect/Defects within the duration of time specified by the Engineer's notice. The Engineer may issue notice to the Bidder to carry out removal of defects or deficiencies, if any, noticed in his inspection, or brought to his notice. The Bidder shall remove the defects and deficiencies within the period specified in the notice and submit to the Engineer a compliance report.

h) It is the Completion Stage when the Bidder has completed all of the works and fixed all of the defects that were on the list of issue by Engineer-in-charge. When this happens, the engineer must issue a "Certificate of Completion". On the issue of "Certificate of Completion", the "Defect Liability Period" starts. The Bidder also must issue a "Certificate statement" as an acknowledgment to the engineer not later than 14 days after the "Certificate of Completion" has been issued. During the "Defect Liability Period", the Bidder has to obey all written instructions from the engineer to carryout repairs and fix any defects which appear in the Permanent Works. If the Bidder does not, due to his own faults finish the repair works or fix the defects by the end of "Defect Liability Period".

## **SECURITY DEPOSIT AND PERFORMANCE GUARANTEE**

### **A. Security Deposit**

The security deposit shall mean and comprise of

- I) **Contract Deposit** – The successful tender, here after referred to as the Bidder shall pay an amount equal to **2%** of the contract sum shall be paid within thirty days from the date of issue of letter of acceptance.

**The said contract deposit shall be paid in the form of Demand Draft (D.D.) only.**

- II) **Retention Money**—~~The retention money equal to 15.00% of the Contract Sum will be recovered from the Bidders every bill i.e. interim / running / final bill.~~ **The clause of retention money will not be applicable M. & E. Department.**

### **B. Additional Security Deposit**

~~The **additional security deposit** shall be applicable when a rebate quoted by Bidder above 12% of estimated cost, then the applicable additional security deposit (ASD) at the rate of 2% for each % rebate & part thereof, in DD only.~~

~~When a rebate quoted by Bidder up to 12% of estimated cost, then the applicable additional security deposit (ASD) will not be applicable.~~

~~Compulsion of ASD should be mandatory at the time of bidding process. The ASD shall be paid online in the ASD tab for Bidders in e-tendering system before submission of the bid.~~

~~The Bidders shall submit the ASD as applicable in the form of Demand Draft during office hours minimum one day before opening of packet 'C' to respective Head clerk (Expenditure) of the engineer in-charge of HE Division in sealed envelop mentioning on their letter head 'ASD' is not applicable.~~

~~If the Bidders fails to submit the sealed envelope as mentioned above at least one day before opening of Packet 'C' within office hours then the EMD of the respective Bidders will be forfeited and the company with their Directors/Partner and other companies with the said directors / Partners will be further debarred from any tendering process for the period of at least 2 years.~~

### **C. Performance Guarantee**

~~The successful tender, here after referred to as the Bidder shall pay in the form of "Performance Guarantee" at different rates for different slabs as stated below:~~

Offer	PG applicable %
For premium, at par and 0 to 12%	PG= 0.92% x contract sum <b>applicable for rebate of 12%</b>
For rebate of 12.01%	P.G. = {0.92% x contract sum applicable for rebate of 12%} + (X) x contract sum where —— X= percentage rebate quoted more than 12%

**Note:** ~~Contract sum shall mean amount after application of rebate/premium as quoted by the Bidder with contingencies only and excluding price variation.~~

The PG shall be paid in one the following forms.

- I) ~~Cash (In case guarantee amount is less than Rs.10,000/-~~
- II) ~~Demand Draft (In case guarantee amount is less than Rs.1,00,000/-)~~
- III) ~~Government securities~~
- IV) ~~Fixed Deposit Receipts (FDR) of a Schedule Bank.~~
- V) ~~An electronically issued irrevocable bank guarantee bond of any Schedule bank or f in the prescribed form given in Annexure.~~

~~Performance Guarantee is applicable over and above the clause of Security Deposit. Performance Guarantee will have to be paid & shall be valid till the defect liability period or finalization of final bill whichever is later.~~

**~~This deposit will be allowed in the form of I to V as mentioned above and shall be paid within 15 days after receipt of Letter of Acceptance.~~**

**Note:** ~~Following exceptions shall be adopted for “Demolition Tenders”.~~

- i. ~~Irrespective of the offer (Rebate/ at par/ premium), ASD shall be differed and only PG o 10% of contract sum be taken from the successful Bidder on award of contract only.~~
- ii. ~~BMC departments shall ensure to incorporate specific condition regarding above in bid document and e-tender notice.~~

#### **D. Refund of Security Deposit**

##### **I. Refund of Contract Deposit**

**Contract Deposit will be refunded after successful completion of contract work and after payment of final bill with due compliance to BMC’s standard procedure. The Contract Deposit shall be released within 30 days after completion of defect liability period of 3 years.**

~~The Contract Deposit shall be released within 30 days after completion of 1<sup>st</sup> year / 3<sup>rd</sup> year of DLP (in case of 5 years DLP) and after issue of “Defect Liability Certificate” (in case of 1 or 2 or 3 years DLP) subject to no recoveries are pending~~

~~against the said work, provided that the Engineer is satisfied that there is no demand outstanding against the Bidder. No claim shall be made against the Balance Contract Deposit after the issue of Defects Liability Certificate.~~

**II. Refund of Retention Money**

~~The Retention Money will be refunded after completion of defect liability period and after issue of "Defect Liability Certificate" (in case of 1 or 2 or 3 years DLP) provided that the Engineer is satisfied that there is no demand outstanding against the Bidder. In the event of different Defects Liability Periods have been specified or become applicable to different sections or parts of the Permanent Works, the said moneys will be released within 30 days on expiration of the latest of such Defects Liability Periods.~~

~~In the event the Engineer issues a taking-over Certificate for a section or part of the Permanent Works, only such proposition thereof as the Engineer determines (having regard to the relative value of such section or part of the Works) shall be considered by the Engineer for payment to the Bidder.~~

**III. Refund of Additional Security Deposit**

~~One-half (50%) of the additional security deposit after the completion of 50% financial progress of the work.~~

~~The balance additional security deposit shall be released within 30 days of issue of "Certificate of Completion" with respect to the whole of the Works. In the event the Engineer issues a Taking-over Certificate for a section or part of the Permanent Works, only such proposition thereof as the Engineer determines (having regard to the relative value of such section or part of the Works) shall be considered by the Engineer for payment to the Bidder.~~

**IV. Refund of Performance Guarantee**

~~The Deposit on account of Performance Guarantee shall be released within 30 days of completion of Defects Liability Certificate subject finalization of final bill whichever is later and no recoveries are pending against the said work, provided that the Engineer is satisfied that there is no demand outstanding against the Bidder.~~

**• Summary of time of Refund of deposit is tabulated as follows:**

**a) Time of Refund for works having 5 years DLP**

<b>Deposits refunded after completion</b>	<b>After 3 yrs of DLP</b>	<b>After Completion of DLP</b>
<b>ASD + 50% of RM</b>	<b>GD+50% of RM</b>	<b>PG</b>

**b) Time of Refund for works having 1 or 2 or 3 years DLP**

<b>Deposits refunded after completion</b>	<b>After Completion of DLP</b>
<b>ASD + 50% of RM</b>	<b>GD+50% of RM+PG</b>

**\*Note:**

a) ~~It shall be clearly mentioned that the BG shall be applicable for individual work/contract and clubbing of various contracts of the said Bidder will not be allowed. In case of obtaining Bank Guarantee, it is necessary to mention that the same shall be valid further 6 months from the completion of defect liability period/ warranty period.~~

b) ~~It shall be the responsibility of the Bidder to keep the submitted B.G. "VALID" for the stipulated time period in the tender & in case of its expiry it will attract penalization.~~

c) ~~Bank Guarantee should be issued by way of General Undertaking and Guarantee issued on behalf of the Bidder by any of the Nationalized or Scheduled banks or branches of foreign banks operating under Reserve Bank of India regulations located in Mumbai upto Virar & Kalyan. List of approved Banks is appended at the end of Instructions to Bidders (ITB). The Bank Guarantee issued by branches of approved Banks beyond Kalyan and Virar can be accepted only if the said Bank Guarantee is countersigned by the Manager of a Regional Branch of the same bank within the Mumbai City Limit categorically endorsing thereon that the said Bank Guarantee is binding on the endorsing Branch of the Bank or the Bank itself within Mumbai Limits and is liable to be enforced against the said Branch of the Bank or the bank itself in case of default by the Bidders furnishing the Bank Guarantee. The Bank Guarantee shall be renewed as and when required and/or directed from time to time until the Bidder has executed and completed the works and remedied any defects therein.~~

**Legal + Stationary Charges: (As per applicable circular) :** Successful tender shall pay the Legal Charges +Stationary charges as per Circular no. CA/FRG/03 dtd 22.06.2021 or as amended.

<b>Sr. No.</b>	<b>Contract Value</b>	<b>Legal + Stationery Charges</b>
1	Rs. 10,001/- to Rs. 50,000/-	Nil
2	Rs. 50,001/- to Rs. 1,00,000/-	Rs. 6,290/-
3	Rs. 1,00,001/- to Rs. 3,00,000/-	Rs. 10,380/-
4	Rs. 3,00,001/- to Rs. 5,00,000/-	Rs. 12,470/-
5	Rs. 5,00,001/- to Rs. 10,00,000/-	Rs. 14,510/-
6	Rs. 10,00,001/- to Rs. 20,00,000/-	Rs. 16,570/-
7	Rs. 20,00,001/- to Rs. 40,00,000/-	Rs. 18,660/-
8	Rs. 40,00,001/- to Rs. 1,00,00,000/-	Rs. 20,720/-
9	<b>Rs. 1,00,00,001/- to Rs. 10,00,00,000/-</b>	<b>Rs. 24,450/-</b>

The Bidders are requested to note that stationary charges as given in the table above will be re- covered from the successful Bidder for supply of requisite prescribed forms for preparing certificate bills in respect of the work.

## F. Stamp Duty: (As per applicable circular)

It shall be incumbent on the successful Bidder to pay stamp duty on the contract.

- i. As per the provision made in Article 63, Schedule I of Bombay Stamp Act 1958, stamp duty is payable for “works contract” that is to say, a contract for works and labour or services involving transfer of property in goods (whether as goods or in some other form) in its execution and includes a sub-contract, as under :

(a)	Where the amount or value set forth in such contract does not exceed rupees Ten lakh.	Five Hundred rupees stamp duty
(b)	Where it exceeds rupees Ten lakhs	Five Hundred Rupees plus 0.10% of the amount above rupees Rs.10 Lakhs subject to maximum of Rs.25 Lakhs

- ii. The successful bidder shall enter into a contract agreement with BMC within 30 days from the date of issue of Work Order and the same should be adjudicated for payment of Stamp Duty by the successful bidder.
- iii. Further shortfall if any, in amount of stamp duty paid as against prescribed amount for the documents executed in Mumbai City & Mumbai Suburban District be recovered from the concerned work Bidders and to deposit the deficit or unpaid Stamp Duty and penalty by two separate Demand Draft or Pay Order in favour of “**Superintendent of Stamp, Mumbai**” within 15 days from intimation thereof.
- iv. All legal charges and incidental expenses in this respect shall be borne and paid by the successful tenderer.

~~v. Stamp Duty is payable on BG – Minimum Rs. 500/- or 0.5% of total BG amount whichever is higher.~~

~~vi. As per article 54 read with 40(b) of stamp duty act, stamp duty 0.5% will be applicable to all the bank guarantees submitted and also which are required to be renewed after expiry of time period.~~

### **IMPORTANT DIRECTIONS**

1. All the information uploaded shall be supported by the corroborative documents in absence of which the information uploaded will be considered as baseless and not accepted for qualification criteria. All the documents shall be uploaded with proper pagination. The page No. shall be properly mentioned in the relevant places. The



information shall be uploaded in the sequence as asked for with proper indexing etc. The Bidder shall be fully responsible for the correctness of the information uploaded by him.

2. Applicants/Bidders shall refer portal.BMC.gov.in\tenders for “The Manual of Bid-Submission for **Item Rate** Tender Document.” The detail guidelines for creation and sub- mission of bid are available in the referred document.

Any queries or request for additional information concerning this TENDER shall be submitted by e-mail to [aewwmwsn02.he@mcgm.gov.in](mailto:aewwmwsn02.he@mcgm.gov.in) The subject shall clearly bear the following identification/ title: "**Queries/ Request for Additional Information: TENDER for work “Supply, Installation, Testing and Commissioning of CCTV Surveillance System BHR, MHR, Mahaveer Nagar & Liberty Garden Tunnel under AEWW(M)WS/North division.”**Any changes in mail ID will be intimated on the portal.

3. In case of **Equal Percentage** of lowest Bidders (L1), the allotment of work shall be done by giving 48 hrs (**2 working days**) from the day of opening of packet C **on same BID-Document number for re-quoting** and such development needs to done by IT department in BMC's SRM system. **Till such development is made; “Sealed Bids” shall be called from the Bidders quoting the same rates i.e. L1.**

In case of equal percentage of lowest Bidders is obtained even after re-quoting, then the

Successful Bidder will be decided by lottery system by concerned H.E.

#### **GENERAL DIRECTIONS TO BIDDERS:**

1. Firms with common proprietor / partner are connected with one another either financially or as master and servant or with proprietor / partner closely related to each other such as husband, wife ,father / mother and minor son / daughter and brother / sister and minor brother / sister, shall not tender separately under different name for the same contract.
2. If it is found that firms as described in clause 6.21.1 have tendered separately under different names for the same contract all such tenders shall stand rejected and tender deposit of each such firm /establishments shall be forfeited. In addition, such firms / establishments shall be liable, at the discretion of the Municipal Commissioner, for further penal action including blacklisting.
3. If it is found that closely related persons as in clause 6.21.1 have submitted separate tenders under different names of firms, establishment but with common address for such establishment / firms and / or if such establishment firms though they have different address, are managed or governed by the same person / persons

jointly or severally such tender shall be liable for action as in clause 6.21.2 including similar action against firms / establishment concerned.

4. If after award of contract, it is found that the accepted bidder violates any of the clauses, 6.21.1, 6.21.2, 6.21.3 the contract shall be liable for cancellation at any time during its currency in addition to penal action against the bidders as well as related firms / establishments.
5. Bidders should note in addition to the official address, they should furnish private residential address, mobile nos., email ids of the partners. Any fault in this respect may justify the rejection of Tender.
6. In the event of tender being accepted, full amounts of contract deposit must be paid and contract must be signed by all the partners of the firm and if one or more partners be not available for the purpose, signatory must produce a Power of Attorney must be registered in the office of C.A (Finance) / C.A (Treasury) /C.A (WSSD).
7. In the case of a Joint Stock Company, the contract must be sealed with the seal of the company in the presence of and signed by the two Directors or by a person duly authorized to sign the contract for the Company by a power of attorney, such power being sealed and signed as aforesaid. All such power of attorney must be registered with CA (WSSD) / CA (Finance) / CA (Treasury) in the Municipal Office.
8. Bidders must distinctly understand:
  - a) That they will be strictly required to conform to the conditions of this contract as contained in each of its clauses and that the plea of "custom prevailing" will not on any account be admitted as an excuse on their part for infringement of any of the conditions.
  - b) That no alternation or interpolation will be allowed to be made in any of the terms and conditions of this contract or in the Specification of in the Schedule, and that if any such alteration or interpolation be made by a Bidder, his tender will, at the option of the Municipal Commissioner, either be rejected or to be treated as if no such alteration or interpolation has been made.
  - c) That the full contract deposit must be paid within the time specified and the contract must be executed within the stipulated time frame by the successful bidder.
  - d) That a postponement of the payment of the full contract deposit or the execution of the contract will not be permitted by reason of the Corporation having in possession other deposits on account of other tenders or contracts, which deposit may be or become returnable to the bidders and which they may wish to transfer as a deposit under this contract. Such transfers will not under any

circumstances be permitted.

**Bidders shall note that if the conditions of G.C.C. are in variance with the conditions contained in the tender document the conditions of the tender document shall prevail.**

### **SITE INSPECTION**

Prior to submitting and uploading e-tender for the work the tenderer should visit and examine at the site of works and its surroundings at his own expense and obtain and ascertain for himself, on his own responsibility & risk all information, technical data etc. that may be necessary for preparing his bid and entering into a contract including, inter-alia, the actual conditions regarding the nature and conditions of site, availability of materials, labour, probable sites for Chowky/stores etc. and the extent of lead and lift required for the execution of the work over the entire duration of the contract, after taking into consideration local conditions, traffic restrictions, obstructions in work, if any allow all such extra expenses that are likely to be incurred due to any such conditions, restrictions, obstructions etc. in the quoted contract price for the work. They shall obtain further clarification, if any, on any specific issue from the Executive Engineer (Maintenance) Meter Workshop, 566, N. M. Joshi Marg, Near 'S' Bridge, Byculla (West) Mumbai -11 before submitting the tender. Tenderers/Contractors should note and study the condition related to site constraints and its impact.

### **MODIFICATIONS IN TENDER DOCUMENT**

If M.C.G.M considers it is necessary to carry out any modifications, in the tender documents and extend the closing date of the tender the same shall be made by an addendum. Copy of addendum will be uploaded on M.C.G.M.'s portal. Each addendum shall be signed by the bidder(s) and scanned copy of the same should be uploaded in Packet "B". The bidder(s) shall not add or amend the text of any documents contained in tender document.

### **TAXES AND DUTIES ON MATERIAL**

"GST and other state levies/cess which are not subsumed under GST will be applicable. The tenderer shall quote inclusive of all taxes applicable at the time of bid submission. It is clearly understood that BMC will not bear any additional liability towards payment of any Taxes & Duties. Wherever the services to be provided by the Tenderers, falls under Reverse Charge Mechanism, the Price quoted shall be exclusive of GST, but inclusive of Taxes/Duties/Cess other than GST, if any. Rates accepted by BMC shall hold good till completion of work and no additional individual claim shall be admissible on account of fluctuations in market rates; increase in

taxes/any other levies / tolls etc. except that payment/recovery for overall market situation shall be made as per Price variation and if there is any subsequent change (after submission of bid) in rate of GST applicable on the work/services to be executed as per tender, i.e. any increase will be reimbursed by BMC whereas any reduction in the rate of GST shall be passed on to BMC as per the provisions of the GST Act.

“As per circular CA/Finance/Proj/City/17, dtd:-06.09.2017 “ Chapter XXI – Miscellaneous , section 171(1) of G.S.T. Act, 2017 governs the “Anti Profiting Measure”(AMP). As per provision of this section , ‘Any reduction in rate of tax on any supply of goods or services or the benefit of input tax credit shall be passed on to the recipient by way of commensurate reduction in prices.’

Accordingly, the bidder should pass on the complete benefit accruing to him on account of reduced tax rate or additional input tax credit, to BMC.

Further, all the provisions of G.S.T. Act will be applicable to the tender ”

**SOLVENCY CERTIFICATE**

Bidder(s) shall upload a scanned copy of latest solvency certificate for required amount from a bank of M.C.G.M approved list attached issued **maximum 12 (twelve) months prior to due date of tender.** Latest solvency certificate shall be submitted in physical format if the tender is awarded to bidder.

<b>Estimated cost in Rs.</b>	<b>Amount of Solvency Certificate in Rs.</b>
Upto 5 lakhs	2 Lakhs
5 lacs to 10 lakhs	5 lakhs
10 lakhs to 25 lakhs	10 lakhs
25 lakhs to 50 lakhs	15 lakhs
50 lakhs to 1 crore	20 lakhs
1 crore to 3 crores	30 lakhs
Above 3 crores	60 lakhs

**ERRORS AND DISCREPANCIES IN TENDER**

If tender contains errors in the Bill of Quantities such as computing mistakes, incorrect transfer etc. the Engineer will inform the tendered(s) of such errors or discrepancies and rectify the errors or discrepancies and will re-total the amounts of Bill of Quantities. The foregoing procedure may be applied at any time prior to award of contract and the Engineer is not liable for any error or discrepancy which was not discovered during scrutiny of the tender.

## **EVALUATION OF TENDER**

In comparing tenders, the corporation shall consider such factors as the efficiency and reliability of instrument and methods proposed, compliance with the specifications, quality and the bidder's capacity to perform vis-à-vis the time of completion.

## **AWARD OF CONTRACT**

Notification of award by way of work order prior to the tender validity period will be issued in writing to successful bidder. The contract will be awarded to the best responsive bidder(s) offering the lowest evaluated tender in conformity with the tender document. Corporation reserves right to accept/reject any or all tenders and to annul the tendering process at any time prior to award of contract. Prior to the expiry of the Tender validity, the Corporation will notify the successful bidder(s) by a letter that his tender has been accepted, if required. This letter herein after and in condition of contract called "The Letter of the Acceptance". Notification of Award will constitute the information of contract.

## **DISPUTE**

In case of any claim, dispute or difference arising in respect of the contract such claim, dispute or difference shall be dealt with as per ***G.C.C clause no. 73, as amended up to date.***

## **Contract Labour (Regulation and Abolition Act 1970):**

The bidder(s) should specifically note that the successful bidder shall have to strictly comply with the entire statutory requirement under the provision of the Contract Labour (Regulation and Abolition) Rules 1970 and with the Maharashtra State Contract Labour (Regulation and Abolition) Rules 1971 and indemnify the Corporation against any claim(s) whatsoever.

As per the Contract Labour (Regulation & Abolition) Act 1970, every bidder should obtain a license certificate from the office of Labour Commissioner situated at Commerce Center, Tardeo, near A.C market, Mumbai – 400 034.

The bidder shall submit the copy of Registration issued under Employees provident fund and Miscellaneous Provisions Act 1952.

The bidder shall also submit the copy of registration certificate issued under Employees State Insurance Corporation (E.S.I.C Act 1948).

**Bidders are requested to take cognizance of Child Labour Act and take precaution not to employ Child Labour on site. If Child Labour is found to be employed on the work, a penalty of Rs 5000/- on the spot will be imposed on the defaulting bidders and further action as deemed fit will be taken.**

The contract period shall be as mentioned in the tender notice. The period required for mobilization, procurement of material, traffic permission, other required permissions, erection of site office etc. complete shall be reckoned from the date of issue of work order.

The rates for unforeseen fair and extra items for the works, which are available in the Unified Schedule of Rates of M.C.G.M, applicable to the tender, will be paid as per G.C.C. in force as amended upto date by M.C.G.M.

The tender shall have to start & simultaneously carry out the works included in the tender at multiple locations or as directed by the engineer.

**As per circular no. CA/FDT/1488/of 17.01.2012 no amendments in the original scope of work will be made without specific prior approval of concerned A.M.C /M.C. ~~No permission will be granted in any circumstances, to execute any additional work in another ward, by using the savings in BOQ, without sanction of competent authority. Bidder should strictly note this clause.~~**

### **SPECIAL CONDITIONS OF CONTRACT**

1. The bidder shall have to obtain all the permissions of the concerned authorities of BMC other than BMC required for carrying out the work. Only recommendatory letter will be issued by BMC.
2. Quantities of all items provided in the BOQ may not be required to be executed depending upon the site conditions. For procurement of materials before starting the work, bidder shall take actual measurements on the site as per tendered work, contract period & get himself acquainted with existing site conditions. The bidder shall not be entitled for any compensation on this account such as excess procurement for any material etc.
3. ~~Measurement of excavation shall be as per the items in the Bill of Quantities. If the actual excavations are more than the specified, excess excavation shall not be payable. However, if the actual excavations are less than the specified but accepted by the Engineer, the same shall be paid at actual.~~

### **SPECIAL DIRECTIONS TO e-TENDERERS:**

The contractor shall take utmost care/ necessary precautions/ preventive measures while carrying out the work so that vehicular traffic/pedestrians traffic shall ply safely and smoothly during the execution of work to avoid any mishap. If any mishap is happened during the execution of work the consequences of the same inclusive of legal and financial will be entirely contractor's liability and same shall be taken into account while bidding for the tender.

**ASSISTANCE FOR THE ENGINEER'S STAFF;**

The bidder shall provide all necessary assistance to the Engineer's Representative and his staff in carrying out their duties of checking, setting out, inspecting and measuring the works. The Bidder shall provide surveyor, staff men, office attendants and laborers as may be needed from time to time by the Engineer.

The Bidder shall provide for Engineer and his staff protective clothing, safety helmets, rubber boots of suitable sizes hand lamps, and the likes as may reasonably be required by them. These articles shall remain the property of the Bidder. No separate payment shall be made on this account.

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# **SECTION 7**

# **BILL OF QUANTITIES**



**BRIHANMUMBAI MAHANAGARPALIKA**

(Hydraulic Engineering Department)

**Sub: Supply, Installation, Testing and Commissioning of CCTV Surveillance System at BHR, MHR, Mahaveer Nagar & Liberty Garden Tunnel under AEW(M)WS/North division****Bill of Quantities & Rate to be filled by Bidder**

<b>Sr. No.</b>	<b>Description</b>	<b>Total Qty</b>	<b>Unit.</b>	<b>Unit Rate</b>	<b>Total Amount</b>
1	Supply, Installation, Testing and Commissioning of Full HD Outdoor Position Camera with Accessories	12	Nos		
2	Supply, Installation, Testing and Commissioning of UHD Outdoor Bullet Camera with Accessories	16	Nos		
3	Supply, Installation, Testing and Commissioning of Full HD IR Indoor Dome Camera with Accessories	7	Nos		
4	Supply, Installation, Testing and Commissioning of Surge protector for Outdoor Camera	36	Nos		
5	Supply, Installation, Testing and Commissioning of Recording Server	2	Nos		
6	Supply, Installation, Testing and Commissioning of Outdoor IP Horn Speaker	4	Nos		
7	Supply, Installation, Testing and Commissioning of Radar With Accessories	4	Nos		
8	Supply, Installation, Testing and Commissioning of 2N SIP Mic.	2	Nos		
9	Supply, Installation, Testing and Commissioning of Video Management Software	2	Nos		
10	Supply and Installation of 65" 4K Professional Display Monitor	2	Nos		
11	Supply and Installation of 43" 4K Professional Display Monitor	4	Nos		
12	Supply, Installation, Testing and Commissioning of Workstation	4	Nos		
13	Supply, Installation, Testing and Commissioning of 16 Channel Network Video Recorder	2	Nos		
14	Supply and Installation of Industrial Grade 8 Port PoE Switch	10	Nos		
15	Supply and Installation of Industrial Grade 4 Port PoE Switch	10	Nos		

16	Supply and Installation Testing & Commissioning of Industrial Grade Hi POE injectors ,	15	Nos		
17	Supply and Installation of Industrial Grade Media Chassis Rack Mount SM ,	2	Nos		
18	Supply, Installation, Testing and Commissioning of 3 KVA UPS with Battery Backup for 2 Hours	2	Nos		
19	Supply, Installation, Testing and Commissioning of 10 KVA UPS with Battery Backup for 2 Hours	2	Nos		
20	Supply , Installation, Testing and Commissioning of Single Phase 15 KVA Stabilizer	2	Nos		
21	Supply & Installation of 42U Netrack and Server Rack (800 X 1000 MM)	2	Nos		
22	Supply & Installation of 9U Netrack and Server Rack	4	Nos		
23	Supply and Laying of Outdoor Armoured 6 core OFC Cable	2000	Mtrs		
24	Supply and Installation of Industrial LC Media Converter With SFP	26	Nos		
25	Supply & Installation of OFC LC Pigtail with Preparation , Splicing &Testing of OFC	156	Nos		
26	Supply and Installation of Single Mode Duplex Fiber Optic Patch Chord	26	Nos		
27	Supply and Installation of 6 Port Wall Mount LIU Loaded	13	Nos		
28	Supply and Installation of 24 Port Wall Mount LIU Loaded	4	Nos		
29	Supply , Installation Testing & commissioning of 24 Port Manageable Switch with SPF	2	Nos		
30	Supply and Installation of 7 Ft. CAT 6 Patch Chord	50	Nos		
31	Supply and Installation & Testing of RJ 45 Connector	130	Nos		
32	Supply and Laying of CAT 6 UTP Cable	2745	Mtrs		
33	Supply and Installation of 5/15 Amp 12 Socket PDU.	4	Nos		

34	Supply and Installation of 5/15 Amp 6 Socket PDU.	17	Nos		
35	Supply and Installation of Outdoor Junction Box compliance with IP65/66	13	Nos		
36	Supply and Installation of Poles for CCTV cameras (5 Meter.)	17	Nos		
37	Hard digging with refilling after the cable is laid down	180	Mtrs		
38	Soft soil digging with refilling after the cable is laid down	720	Mtrs		
39	Supply and Laying of 3 C X 2.5 MM <sup>2</sup> Cu Armoured Cable	2000	Mtrs		
40	Supply and Laying of HDPE Pipe, 50 MM OD X 38 MM ID	2000	Mtrs		
41	Supply and Laying of PVC Conduit Pipe/Casing Capping / Flexible Pipe 25mm with Accessories	1010	Mtrs		
42	Preparation of Control Room for CCTV Surveillance System	2	Nos		

**Cost Included 18% GST**

**Bidder's Full Address and Telephone No., if any**

**Bidder's Signature and Office Stamp**

**SECTION 8**

**GENERAL CONDITIONS OF**

**CONTRACT**

## General Conditions of Contract

### **A. General**

#### **1. Definitions**

1.1 Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

**The “Contract”** shall mean the tender and acceptance thereof and the formal agreement if any, executed between the Bidder, Commissioner and the Corporation together with the documents referred to therein including these conditions and appendices and any special conditions, the specifications, designs, drawings, price schedules, bills of quantities and schedule of rates. All these documents taken together shall be deemed to form one Contract and shall be complementary to one another.

**The Contract Data** defines the documents and other information which comprise the Contract.

**The “Bidder”** shall mean the individual or firm or company whether incorporated or not, whose tender has been accepted by the employer and the legal successor of the individual or firm or company, but not (except with the consent of the Employer) any assignee of such person.

**The Bidder** is a person or corporate body who has desired to submit Bid to carry out the Works, including routine maintenance till the tender process is concluded.

**The Bidder's Bid** is the completed bidding document submitted by the Bidder to the Employer.

**The “Contract Sum”** means the sum named in the letter of acceptance including Physical contingencies subject to such addition thereto or deduction there from as may be made under the provisions hereinafter contained.

Note : The contract sum shall include the following –

- In the case of percentage rate contracts the estimated value of works as mentioned in  
the tender adjusted by the Bidder's percentage.
- In the case of item rate contracts, the cost of the work arrived at after finalization of the quantities shown in schedule of items / quantities by the item rates quoted by the Bidders for various items and summation of the extended cost of each item.
- In case of lump-sum contract, the sum for which tender is accepted.

- Special discount / rebate / trade discount offered by the Bidder if any and accepted by the Corporation.
- Additions or deletions that are accepted after opening of the tenders.

**The “Contract Cost”** means the Contract Sum plus Price Variation. This cost shall be included in the letter of acceptance.

**A Defect** is any part of the Works not completed in accordance with the Contract.

**The Defects Liability Certificate** is the certificate issued by the Engineer, after the Defect Liability Period has ended and upon correction of Defects by the Bidder.

Drawings means all the drawings, calculations and technical information of a like nature provided by the Engineer to the Bidder under the Contract and all drawings, calculations, samples, patterns, models, operation & maintenance manual and other technical information of like nature submitted by the Bidder and approved by the Engineer.

**The Authority** shall mean **BRIHANMUMBAI MAHANAGARPALIKA (BMC)**

**The “Employer”** shall mean the Municipal Corporation for Greater Mumbai / Municipal Commissioner for Greater Mumbai, for the time being holding the said office and also his successors and shall also include all “Additional Municipal Commissioners, Director (Engineering Services & Projects)” and the Deputy Municipal Commissioner, to whom the powers of Municipal Commissioner, have been deputed under Section 56 and 56B of the Mumbai Municipal Corporation Act.

**The Engineer in-charge** shall mean the Executive Engineer in executive charge of the works and shall include the superior officers of the Engineering department i.e. Dy.Ch.Eng/ Ch.Eng. and shall mean and include all the successors in BMC

**The Engineer's Representative** shall mean the Assistant Engineer, Sub. Engineer/Jr. Engineer in direct charge of the works and shall include Sub Eng. / Jr. Eng. of Civil section / Mechanical section / Electrical section appointed by BMC.

**The “Engineer”** shall mean the City Engineer / the Hydraulic Engineer / the Chief Engineer / the Special Engineer, appointed for the time being or any other officer or officers of the Municipal Corporation who may be authorized by the commissioner to carry out the functions of the City Engineer / the Hydraulic Engineer / the Chief Engineer / the Special Engineer or any other competent person appointed by the employer and notified in writing to the Bidder to act in replacement of the Engineer from time to time.

**Bidder's Equipment** means all appliances and things of whatsoever nature required for the execution and completions of the Works and the remedying of any defects therein, but does not include plant material or other things intended to form or forming part of the Permanent Works.

**The Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.

**The Intended Completion Date** is the date on which it is intended that the Bidder shall complete the construction works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer by issuing an extension of time.

**Materials** are all supplies, including consumables, used by the Bidder for incorporation in the Works and works of routine maintenance.

**Plant** is any integral part of the Works that shall have a mechanical, electrical, electronic, chemical, or biological function.

**Routine Maintenance** is the maintenance of activities of the completed structure for five years as specified in the Contract Data.

**The "Site"** shall mean the land and other places including water bodies more specifically mentioned in the special conditions of the tender, on, under in or through which the permanent works or temporary works are to be executed and any other lands and places provided by the Municipal Corporation for working space or any other purpose as may be specifically designated in the contract as forming part of the site.

**Site Investigation Reports** are those that were included in the bidding documents and are reports about the surface and subsurface conditions at the Site.

**"Specification"** shall mean the specification referred to in the tender and any modification thereof or addition or deduction thereto as may from time to time be furnished or approved in writing by the Engineer.

**The Start Date/Commencement Date** is given in the Contract Data. It is the date when the Bidder shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

**A Nominated Sub-Bidder** is a person or corporate body who has a Contract with the Bidder to carry out a part of the construction work and/or routine maintenance in the Contract, which includes work on the Site.

**Temporary Works** are works designed, constructed, installed, and removed by the Bidder that are needed for construction or installation of the Works **Variation** means a change to the -

- i) Specification and /or Drawings (if any) which is instructed by the Employer.
- ii) Scope in the Contract which is instructed by the Employer.
- iii) Price in the Contract which is instructed by the Employer.

**The Works**, as defined in the Contract Data, are what the Contract requires the Bidder to construct, install, maintain, and turn over to the Employer. Routine maintenance is defined separately.

**Jurisdiction:** In case of any claim, dispute or difference arising in respect of a contract, the cause of action thereof shall be deemed to have arisen in Mumbai and all legal proceedings in respect of any claim, dispute or difference shall be instituted in a competent court in the City of Mumbai only.

## **2. Interpretation**

2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer will provide instructions clarifying queries about these Conditions of Contract.

2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended

Completion Date for the whole of the Works).

2.3 The documents forming the Contract shall be interpreted in the following documents: (1) Agreement, (2) Letter of Acceptance, (3) Notice to Proceed with the Work , (4) Bidder's Bid, (5) Contract Data, (6) Special Conditions of Contract Part (7) General Conditions of Contract Part I, (8) Specifications, (9) Drawings, (10) Bill of Quantities, and (11) Any other document listed in the Contract Data.

## **3. Engineer's Decisions**

3.1 Except where otherwise specifically stated, the Engineer will decide contractual matters between the Employer and the Bidder in the role representing the Employer. However, if the Engineer is required under the rules and regulations and orders of the Employer to obtain prior approval of some other authorities for specific actions, he will so obtain the approval, before communicating his decision to the Bidder.

3.2 Except as expressly stated in the Contract, the Engineer shall not have any authority to relieve the Bidder of any of his obligations under the contract.



#### **4. Delegation**

4.1 The Engineer, with the approval of the Employer, may delegate any of his duties and responsibilities to other person(s), except to the Adjudicator, after notifying the Bidder, and may cancel any delegation after notifying the Bidder.

#### **5. Communications**

All certificates, notices or instructions to be given to the Bidder by Employer/ Engineer shall be sent on the address or contact details given by the Bidder of Bid. The address and contact details for communication with the Employer/ Engineer shall be as per the details given in Contract Data. Communications between parties that are referred to in the conditions shall be in writing. The Notice sent by facsimile (fax) or other electronic means shall be effective on confirmation of the transmission. The Notice sent by Registered post or Speed post shall be effective on delivery or at the expiry of the normal delivery period as undertaken by the postal service.

#### **6. Subcontracting**

6.1 Unless specifically mentioned in the contract subletting will not be allowed. Subletting, where otherwise provided by the contract shall not be more than 25% of the contract price.

6.2 The Bidder shall not be required to obtain any consent from the Employer for:

- a. the sub-contracting of any part of the Works for which the SubBidder is named in the Contract;
- b. the provision for labour, or labour component.
- c. the purchase of Materials which are in accordance with the standards specified in the Contract.

6.3 Beyond what has been stated in clauses 6.1 and 6.2, if the Bidder proposes sub-contracting any part of the work during execution of the Works, because of some unforeseen circumstances to enable him to complete the Works as per terms of the Contract, the Employer will consider the following before according approval:

- a. The Bidder shall not sub-contract the whole of the Works.
- b. The permitted subletting of work by the Bidder shall not establish any contractual relationship between the sub-Bidder and the BMC and shall not relieve the Bidder of any responsible-  
under the Contract.

- 6.4 The Engineer should satisfy himself before recommending to the Employer whether
- a. the circumstances warrant such sub-contracting; and
  - b. the sub-Bidder so proposed for the Work possesses the experience, qualifications and equipment necessary for the job proposed to be entrusted to him.

## **7. Other Bidders**

- 7.1 The Bidder shall cooperate and share the Site with other Bidders, public authorities, utilities, and the Employer between the dates given in the Schedule of Other Bidders, as referred to in the Contract Data. The Bidder shall also provide facilities and services for them as described in the Schedule. The Employer may modify the Schedule of Other Bidders, and shall notify the Bidder of any such modification.
- 7.2 The Bidder should take up the works in convenient reaches as decided by the Engineer to ensure there is least hindrance to the smooth flow and safety of traffic including movement of vehicles and equipment of other Bidders till the completion of the Works.

## **8. Personnel**

- 8.1 The Bidder shall employ for the construction work and routine maintenance the key personnel including technical personnel named in the Contract Data or other personnel approved by the Engineer. The Engineer will approve any proposed replacement of technical personnel only if their relevant qualifications and abilities are substantially equal to those of the personnel stated in the Contract Data.
- 8.2 The Bidder's personnel shall appropriately be qualified, skilled and experienced in their respective trades or occupations. The Engineer shall have authority to remove, or cause to be removed, any person employed on the site or works, who carries out duties incompetently or negligently and persists in any conduct which is prejudicial to safety, health or the protection of the environment.
- 8.3 If the Engineer asks the Bidder to remove a person who is a member of the Bidder's staff or work force, stating the reasons, the Bidder shall ensure that the person leaves the Site within seven days and has no further connection with the Works in the Contract.
- 8.4 The Bidder shall not employ any retired Gazetted officer who has worked in the Engineering Department of the BMC /State Government and has either not completed two years after the date of retirement or has not obtained BMC/State Government's permission to employment with the Bidder.

## **9. Employer's and Bidder's Risks**

9.1 The Employer carries the risks which this Contract states are Employer's risks, and the Bidder carries the risks which this Contract states are Bidder's risks.

## **10. Employer's Risks**

10.1 The Employer is responsible for the excepted risks which are (a) in so far as they directly affect the execution of the Works in the Employer's country, the risks of war, invasion, act of foreign enemies, rebellion, revolution, insurrection or military or usurped power, civil war, riot, commotion or disorder (unless restricted to the Bidder's employees) and contamination from any nuclear fuel or nuclear waste or radioactive toxic explosive, or (b) a cause due solely to the design of the Works, other than the Bidder's design.

## **11. Bidder's Risks**

11.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks, referred to in clause 11.1, are the responsibility of the Bidder.

## **12. Insurance**

12.1 The Bidder at his cost shall provide, in the joint names of the Employer and the Bidder, insurance cover from the Start Date to the end of Defects Liability Period, in the amounts and deductibles stated in the Contract Data for the following events which are due to the Bidder's risks:

- a) Loss of or damage to the Works, Plant and Materials;
- b) Loss of or damage to Equipment;
- c) Loss of or damage to property (other than the Works, Plant, Materials, and Equipment) in connection with the Contract and
- d) Personal injury or death.

12.2 Insurance policies and certificates for insurance shall be delivered by the Bidder to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

12.3 Alterations to the terms of insurance shall not be made without the approval of the Engineer.

12.4 Both parties shall comply with any conditions of the insurance policies.

12.5 If the Bidder does not provide any of the policies and certificates required, the Employer may affect the insurance which the Bidder should have provided and recover the premiums the Employer has paid, from payments otherwise due to the Bidder or if no payment is due, the payment of premiums shall be debt due.

### **13. Site Investigation Reports**

13.1 The Bidder, in preparing the Bid, may rely, at his own risk, on any Site Investigation Reports referred to in the Contract Data, supplemented by any other information available to him, before submitting the bid.

### **14. Queries about the Contract Data**

14.1 The Engineer will clarify queries on the Contract Data.

### **15. Bidder to Construct the Works and Undertake Maintenance (if specified in the tender)**

15.1 The Bidder shall construct, and install and maintain the Works in accordance with the Specifications and Drawings and as per instructions of the Engineer.

15.2 The Bidder shall construct the works with intermediate technology, i.e., by manual means with medium input of machinery required to ensure the quality of works as per specifications. The Bidder shall deploy the equipment and machinery as required in the contract.

15.3 The Bidder shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.

During continuance of the contract, the Bidder and his sub-Bidders shall abide at all times by all existing enactments on environmental protection and rules made there under, regulations, notifications and byelaws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in future by the State or Central Government or the local authority. Salient features of some of the major laws that are applicable are given below:

- The Water (Prevention and Control of Pollution) Act, 1974, this provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. „Pollution“ means such contamination of water or such alteration of the physical, chemical or biological properties of water

or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

- The Air (Prevention and Control of Pollution) Act, 1981, this provides for prevention, control and abatement of air pollution. “Air Pollution” means the presence in the atmosphere of any “air pollutant”, which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.
- The Environment (Protection) Act, 1986, this provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. “Environment” includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.
- The Public Liability Insurance Act, 1991, This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

## **16. The Works and Routine Maintenance to be completed by the Intended Completion Date**

- 16.1 The Bidder may commence execution of the Works on the Start Date and shall carry out the Works and Routine Maintenance, if specified in the tender, in accordance with the Program submitted by the Bidder, as updated with the approval of the Engineer, and complete them by the Intended Completion Date.

## **17. Approval by the Engineer**

- 17.1 The Bidder shall submit Specifications and Drawings showing the proposed Temporary Works to the Engineer, who is to approve them if they comply with

the Specifications and Drawings.

17.2 The Bidder shall be responsible for design and safety of Temporary Works

17.3 The Engineer's approval shall not alter the Bidder's responsibility for design and safety of the Temporary Works.

17.4 The Bidder shall obtain approval of third parties to the design of the Temporary Works, where required.

17.5 All Drawings prepared by the Bidder for the execution of the temporary or permanent Works, are subject to prior approval by the Engineer before their use.

## **18. Safety**

**18.1** The Bidder shall be responsible for the safety of all activities on the Site. He shall comply with all applicable safety requirements and take care of safety of all persons entitled to be on the site and the works. He shall use reasonable efforts to keep the site and the works, both during construction and maintenance, clear of unnecessary obstruction so as to avoid danger to the persons and the users.

- Workers employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
- Stone breaker shall be provided with protective goggles and protective clothing and seated at sufficiently safe intervals.
- The area should be barricaded or cordoned off by suitable means to avoid mishaps of any kind. Power warning signs should be displayed for the safety of the public whenever cleaning works are undertaken during night or day.
- The workers engaged for cleaning the manholes/sewers should be properly trained before allowing working in the manhole.

### **18.2 Safety Programs:-**

- I. Have adequate safety supervision in place to ensure that safety programs set up by the firms/agencies are in compliance with prevalent laws and regulations.
- II. Review safety programs developed by each of the trade firms, prepare and submit a comprehensive safety program.
- III. Monitor day to day implementation of safety procedures.

### **18.3 First Aid Facilities: -**

- I. At every work place there shall be provided and maintained, so as to be easily accessible during working hours, first-aid boxes at the rate of not less than one box for 150 contract labour or part thereof ordinarily employed.

- II. The first-aid box shall be distinctly marked with a red cross on white back ground.
- III. Adequate arrangements shall be made for immediate recoupment of the equipment when necessary.
- IV. Nothing except the prescribed contents shall be kept in the First-aid box.
- V. The first-aid box shall be kept in charge of a responsible person who shall always be readily available during the working hours of the work place.
- VI. A person in charge of the First-aid box shall be a person trained in First-aid treatment, in the work places where the number of contract labour employed is 150 or more.

## **19. Discoveries**

19.1 Anything of historical or other interest or of significant value unexpectedly discovered on

The Site shall be the property of the Employer. The Bidder shall notify the Engineer of such discoveries and carry out the Engineer's instructions for dealing with them.

## **20. Possession of the Site**

20.1 The Employer shall handover complete or part possession of the site to the Bidder 7 days in advance of construction programme. At the start of the work, the Employers shall handover the possession of at-least 75% of the site free of all encumbrances, the remaining 25 % of the possession as per Bidder's construction programme.

## **21. Access to the Site**

21.1 The Bidder shall allow access to the Site and to any place where work in connection with the Contract is being carried out, or is intended to be carried out to the Engineer and any person/persons/agency authorized by: a. The Engineer b. The Employer or authorized by the Employer.

## **22. Instructions**

22.1 The Bidder shall carry out all instructions of the Engineer, which comply with the applicable laws where the Site is located.

22.2 The Bidder shall permit the appointed and/or authorized persons to inspect the Site and/or accounts and records of the Bidder and its sub-Bidders relating to the performance of the Contract, and to have such accounts and records audited by

auditors appointed, if so required. The Bidder's attention is invited to Clause of "Fraud and Corruption", which provides, inter alia, that acts intended to materially impede the exercise of the inspection and audit rights provided for under the Clause & constitute a obstructive practice subject to contract termination.

### 22.3 Engineer to have power to issue further drawings or instructions:

The Engineer shall have the power and authority from time to time and at all times to make and issue such further drawings and to give such further instructions and directions as may appear to him necessary or proper for the guidance of the Bidder and the good and sufficient execution of the works according to terms of the specifications and Bidder shall receive, execute, obey and be bound by the same, according to the true intent and meaning thereof, as fully and effectually as though the same had accompanied or had been mentioned or referred to in the specification, and the Engineer may also alter or vary the levels or position of nature of works contemplated by the specifications, or may order any of the works contemplated thereby to be omitted, with or without the substitution of any other works in lieu thereof, or may order any work or any portion of work executed or partially executed, to be removed, changed or altered, added if needful, may order that other works shall be substituted instead thereof and difference of expense occasioned by any such diminution or alteration so ordered and directed shall be added to or deducted from the amount of this Contract, as provided under condition no.10(a) hereinafter. No work which radically changes the original nature of the Contract shall be ordered by the Engineer and in the event of any deviation being ordered which in the opinion of the Bidder changes the original nature of Contract he shall nevertheless carry it out and disagreement as to the nature of the work and the rate to be paid therefore shall be resolved in accordance with condition no.13d.

The time for completion of the Works, shall be in even of any deviations resulting in additional cost over the contract price being ordered, be extended or reduced reasonably by the Engineer. The Engineer's decision in this case shall be final.

## **B. Time Control**

### **23. Programme**

23.1 Within the time stated in the Contract Data, the Bidder shall submit to the Engineer for approval a Programme, including Environment Management Plan showing the general methods, arrangements, order, and timing for all the activities in the Works, along with monthly cash flow forecasts for the construction of works.



After the completion of the construction works, the programme for the Routine Maintenance Work, showing the general methods, arrangements, order and timing for all the activities involved in the Routine Maintenance will also be submitted by the Bidder to the Engineer for approval if specified in the tender. The programme for Routine Maintenance will be submitted in each year for the period of Maintenance.

23.2 The Bidder shall submit the list of equipment and machinery being brought to site, the list of key personnel being deployed, the list of machinery/ equipments being placed in field laboratory and the location of field laboratory along with the Programme. The Engineer shall cause these details to be verified at each appropriate stage of the programme.

23.3 An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining Works, including any changes to the sequence of the activities.

23.4 The Bidder shall submit to the Engineer for approval an updated Programme at intervals no longer than the period stated in the Contract Data. If the Bidder does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.

23.5 The Engineer's approval of the Programme shall not alter the Bidder's obligations. The Bidder may revise the Programme and submit it to the Engineer again at any time. A revised Programme shall show the effect of Variations and Compensation Events.

#### **24. Extension of Time In Contracts:**

Subject to any requirement in the contract as to completion of any portions or portions of the works before completion of the whole, the Bidder shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses:

##### **a) Extension attributable to BMC**

**(i) Extension Due To Modification:** If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Bidder shall be responsible for requesting such extension of the date as may be

considered necessary as soon as the cause thereof shall arise and in any case **should not be less than 30 days before the expiry of the date fixed for completion of the works.**

**(ii) Extension For Delay Due To BMC:** In the event of any failure or delay by the BMC to hand over the Bidder possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the BMC due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the Bidder to damages or compensation therefore, but in any such case, the BMC may grant such extension(s) of the completion date as may be considered reasonable. achieved on each activity and the effect of the progress achieved on the timing of the remaining Works, including any changes to the sequence of the activities.

23.4 The Bidder shall submit to the Engineer for approval an updated Programme at intervals no longer than the period stated in the Contract Data. If the Bidder does not submit an updated Programme within this period, the Engineer may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.

23.5 The Engineer's approval of the Programme shall not alter the Bidder's obligations. The Bidder may revise the Programme and submit it to the Engineer again at any time. A revised Programme shall show the effect of Variations and Compensation Events.

#### **24. Extension of Time In Contracts:**

Subject to any requirement in the contract as to completion of any portions or portions of the works before completion of the whole, the Bidder shall fully and finally complete the whole of the works comprised in the contract (with such modifications as may be directed under conditions of this contract) by the date entered in the contract or extended date in terms of the following clauses:

##### **b) Extension attributable to BMC**

**(i) Extension Due To Modification:** If any modifications have been ordered which in the opinion of the Engineer have materially increased the magnitude of the work, then such extension of the contracted date of completion may be granted as shall appear to the Engineer to be reasonable in the circumstances, provided moreover that the Bidder shall be responsible for requesting such extension of the date as may be considered necessary as soon as the cause thereof shall arise and in any case **should not be less than 30 days before the expiry of the date fixed for completion of the works.**

**(iii) Extension For Delay Due To BMC:** In the event of any failure or delay by the BMC to hand over the Bidder possession of the lands necessary for the execution of the works or to give the necessary notice to commence the works or to provide the necessary drawings or instructions or any other delay caused by the BMC due to any other cause whatsoever, then such failure or delay shall in no way affect or vitiate the contract or alter the character thereof or entitle the Bidder to damages or compensation therefore, but in

any such case, the BMC may grant such extension(s) of the completion date as may be considered reasonable.

**Note: For extension of time period as governed in (i) and (ii) above, any modifications in design/drawings, specifications, quantities shall be needed to be justified with recorded reasons with approval of Ch.Eng. for not anticipating the same while preparing estimates and draft tender.**

**(b) Extension Of Time For Delay Due To Bidder:** The time for the execution of the work or part of the works specified in the contract documents shall be deemed to be the essence of the contract and the works must be completed no later than the date(s) / the programme for completion of work as specified in the contract. If the Bidder fails to complete the works within the time as specified in the contract for the reasons other than the reasons specified in above as (a.i) and (a.ii), the BMC may, if satisfied that the works can be completed by the Bidder within reasonable short time thereafter, allow the Bidder for further extension of time as the Engineer may decide. On such extension the BMC will be entitled without prejudice to any other right and remedy available on that behalf, to recover the compensation as governed by Clause 8(e) of GCC. For the purpose of this Clause, the contract value of the works shall be taken as value of work as per contract agreement including any supplementary work order/contract agreement issued.

**Further, competent authority while granting extension to the currency of contract under Clause (b) of as above may also consider levy of penalty, as deemed fit based on the merit of the case. Also, the reasons for granting extension shall be properly documented.**

## **25. Delays Ordered by the Engineer**

25.1 The Engineer may instruct the Bidder to delay the start or progress of any activity within the Works. Delay/delays totaling more than 30 days will require prior written approval of the DMC / AMC.

## **26. Management Meetings**

26.1 The Engineer may require the Bidder to attend a management meeting. The business of a management meeting shall be to review the plans for progress of the Works.

26.2 The Engineer shall record the business of management meetings and provide copies of the record to those attending the meeting. The responsibility of the parties for actions to be taken shall be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all those who attended the meeting.

## **C. Quality Control**

### **27.1. Work to be open to Inspection and Bidder or Responsible agent to be present**

All works under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspection and supervision of the Eng-in-charge and his subordinates and the Bidder shall at all times during the usual working hours, at all other times, during the usual working hours and at all other times at which reasonable notice of the intention of the Eng-in-charge and his subordinates to visit the works shall have been given to the Bidder, either himself be present to receive orders and instruction or have responsible agent duly accredited in writing present for that purpose. Order given to the Bidder's duly authorized agent shall be considered to have the same force and effect as if they had been given to the Bidder himself.

### **27.2. Notice To Be Given Before Work Is Covered Up**

The Bidder shall give not less than ten days' notice in writing to the Eng -In-Charge or his subordinate in charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimension thereof taken before the same is so covered up or placed beyond the reach of measurements and shall not cover up or place beyond the reach of measurement any work without the consent in writing of the Eng-In- Charge or his subordinate incharge of the work, and if any work shall be covered up or placed beyond the reach of measurement, without such notice having been given or consent obtained the same shall be uncovered at the Bidders expenses, and in default thereof no payment or allowance shall be made for such work or for the materials with which the same was executed

### **27.3 Works to be executed in accordance with specifications / drawings / orders etc. :**

The Bidder shall execute the whole and every part of the work the most substantial and workman like manner and both has regards material and every other respect in strict accordance with specifications. The Bidder shall also confirm exactly, fully and faithfully to the designs, drawings and instructions in writing relating to the work signed by the Engineer In-charge and lodged in his office and to which the Bidder shall be entitled to have access for the purpose of inspection at such office, or on the site or work during office hours. The Bidder shall be entitled to receive three sets of contract drawings and working drawings as well as one certified copy of the accepted

tender along with the work order free of cost.

~~27.4 Ready Mix Concrete/ Asphalt Mix — If applicable~~

~~i) The Bidder shall have to arrange Ready Mix concrete (RMC)/Asphalt from~~

~~RMC/ASPHALT producing plants registered with BMC~~

~~ii) The Bidder shall, within a 7 days of award of the work, submit a list of at least three RMC/Asphalt producers with details of such plants including details and number of transit, mixers & pumps etc. to be deployed indicating name of owner/company, its location, capacity, technical establishment.~~

~~The Engineer-in-charge will reserve right to inspect at any stage and reject the concrete if he is not satisfied about quality of product at the user's end.~~

~~iii) The Engineer-in-charge reserves the right to exercise control over the:-~~

~~a) Calibration check of the RMC/Asphalt plant.~~

~~b) Weight and quantity check on the ingredients, water and admixtures added for batch mixing for RMC plants~~

~~c) Time of mixing of concrete/grade of asphalt.~~

~~d) Testing of fresh concrete/asphalt mix, recording of results and declaring the mix fit or unfit for use. This will include continuous control on the work ability during production and taking corrective action, if required.~~

~~e) For exercising such control, the Engineer-in-charge shall periodically depute his authorized representative at the RMC/Asphalt plant. It shall be responsibility of the Bidder to ensure that all necessary equipment, manpower & facilities are made available to Engineer-in-charge and or his authorized representative at RMC/Asphalt plant.~~

~~f) All required relevant records of RMC/Asphalt mix shall be made available to the Engineer-in-charge or his authorized representative. Engineer-in-charge shall, as required, specify guidelines & additional procedures for quality control & other parameters in respect of material production & transportation of concrete mix which shall be binding on the Bidder & the RMC/Asphalt plant. Only concrete as approved in design mix by Engineer-in-charge shall be produced in RMC plant and transported to the site.~~

~~g) The contactor shall have to produce a copy of chalan receipts/SCADA reports/VTS reports as issued by the RMC/Asphalt plant as a documentary proof in lieu of supply of RMC/Asphalt mix before releasing payment.~~

## **28. Identifying Defects**

28.1 The Engineer shall check the Bidder's work and notify the Bidder of any Defects that are found. Such checking shall not affect the Bidder's responsibilities. The Engineer may instruct the Bidder to search for a Defect and to uncover and test any work that the Engineer considers may have a Defect.

28.2 The Bidder shall permit the Employer's technical person(s) to check the Bidder's work and notify the Engineer and Bidder if any defects that are found.

## **29. Tests – If applicable**

29.1 For carrying out mandatory tests as prescribed in the specifications, the Bidder shall establish field laboratory at the location decided by Engineer. The field laboratory will have minimum of equipments as specified in the Contract Data.

The Bidder shall be solely responsible for :

- a. Carrying out the mandatory tests prescribed in the Specifications, and
- b. For the correctness of the test results, whether preformed in his laboratory or elsewhere.

29.2 If the Engineer instructs the Bidder to carry out a test not specified in the Specification/ Quality Assurance Handbook to check whether any work has a Defect and the test shows that it does, the Bidder shall pay for the test and any samples. If there is no defect, the test shall be a compensation event.

When required by the Engineer-in-charge the Bidder(s) shall supply for the purpose of testing samples of all materials proposed to be used in the works. Samples submitted either to govern bulk supplies or required for testing before use shall be in suitable packages to contain them and shall be provided free of charge by the Bidder. The cost of testing shall be borne by the Bidder even if the result of the sample confirm or do not confirm to the relevant BIS code specifications.

- i. All expenditure required to be incurred for taking the samples conveyance, packing shall be borne by the contactor himself.
- ii. The failed material shall be removed from the site by the Bidder at his own cost within a week time of written order of the Engineer-in-charge.

### **29.3 ~~Setting of Site Laboratories : If applicable~~**

~~Bidders shall set up a laboratory at site before commencement of work at their cost for performing various tests and at least the following machines and equipments shall be provided therein—~~

- ~~1. Set of Sieves as per I.R.C. /I.S.~~
- ~~2. Compressive Testing Machine(For new works)~~
- ~~3. Oven, Electrically Operated~~
- ~~4. Weighing Balance (20 kg capacity)~~
- ~~5. 3 m straight edge~~
- ~~6. Sieve shaker~~
- ~~7. First Aid Box~~
- ~~8. Measuring Jar (for silt content)~~
- ~~9. Other Machines/apparatus as may be directed by the Engineer~~
- ~~10 Vernier Caliber~~
- ~~11. Level / Theodolite~~

~~All the test records shall be maintained in the site office and made available as and when required. The laboratory must be established within 15 days from the date of receipt of the orders from Engineer In charge. On failure to do so, a penalty of Rs 1000/- per day shall be imposed.~~

~~The Bidder shall install testing equipment at site. The Bidder shall ensure and certify the calibration of the equipment so installed and shall maintain the same in working order throughout the period of construction. The Bidder shall also provide necessary technically qualified experienced trained staff for carrying out such tests for using such equipment. The tests shall be carried out under the supervision of the Engineer in charge. The calibration shall be checked every twelve months as directed by Engineer-in-charge.~~

### **30. Correction of Defects noticed during the Defects Liability Period.**

- 30.1 (a) The Engineer shall give notice to the Bidder of any Defects before the end of the Defects Liability Period, which begins at Completion and ends after five years. The Defects Liability Period shall be extended for as long as Defects remain to be

corrected.

- (b) Every time notice of Defect/Defects is given, the Bidder shall correct the notified Defect/Defects within the duration of time specified by the Engineer's notice.
- (c) The Engineer may issue notice to the Bidder to carry out removal of defects or deficiencies, if any, noticed in his inspection, or brought to his notice. The Bidder shall remove the defects and deficiencies within the period specified in the notice and submit to the Engineer a compliance report.

### **31. Uncorrected Defects and Deficiencies**

- 31.1 If the Bidder has not corrected a Defect pertaining to the Defect Liability Period under clause and deficiencies in maintenance, to the satisfaction of the Engineer, within the time specified in the Engineer's notice, the Engineer will assess the cost of having the Defect or deficiency corrected, and the Bidder shall pay this amount, on correction of the Defect or deficiency by another agency.

## **D. Cost Control**

### **32. Variations**

The Engineer shall, having regard to the scope of the Works and the sanctioned estimated

cost, have power to order, in writing, Variations within the scope of the Works he considers necessary or advisable during the progress of the Works. Such Variations shall form part of the Contract and the Bidder shall carry them out and include them in updated Programmes produced by the Bidder. Oral orders of the Engineer for Variations, unless followed by written confirmation, shall not be taken into account.

### **33. Payments for Variation**

- 33.1 If rates for Variation items are specified in the Bill of Quantities, the Bidder shall carry out such work at the same rate.
- 33.2 The rate for Extra/Excess shall be governed by clause 10.A of Standard General Condition of Contract

### **34. Cash Flow Forecasts**

When the Programme is updated, the Bidder shall provide the Engineer with an updated cash flow forecast.

### **35. Payment Certificates**

The payment to the Bidder will be as follows for construction work:

- (a) A bill shall be submitted by the Bidder monthly or before the date fixed by the



Engineer In-charge for all works executed in the previous month, and the Engineer In-charge shall take or cause to be taken requisite measurement for the purpose of having the same verified and the claim, so far as it is admissible, shall be adjusted, if possible, within 10 days from the presentation of the bill. If the Bidder does not submit the bill within the time fixed as aforesaid, the Engineer In-charge may depute a subordinate to measure up the said work in the presence of the Bidder or his duly authorized agent whose counter signature to the measurement list shall be sufficient warrant, and Engineer In-Charge may prepare a bill from such list which shall be binding on the Bidder in all respects.

(b) The Engineer shall check the Bidder's fortnightly/monthly statement within 14 days and certify the amount to be paid to the Bidder.

(c) The value of work executed shall be determined, based on measurements by the Engineer.

(d) The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

(e) The value of work executed shall also include the valuation of Variations and Compensation Events.

(f) The Engineer may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information. (g) The Bidder shall submit all bills on the printed forms at the office of Engineer In-charge. The charges to be made in the bills shall always be entered at the rates specified in tender.

## **36. Payments**

36.1 Payments shall be adjusted for deductions for advance payments, retention, security deposit, other recoveries in terms of the Contract and taxes at source, as applicable under the law. The Employer shall pay the Bidder the amounts certified by the Engineer within 15 days of the date of each certificate.

36.2 All sums payable by a Bidder by way of compensation under any of these conditions, shall be considered as a reasonable compensation to be applied to the use of BMC without reference to the actual loss or damage sustained and whether any damage has or has not been sustained.

36.3 No payment shall be made for any work estimated to cost less than Rupees One Thousand till after the whole of work shall have been completed and the certificate of completion given. But in the case of works estimated to cost more than Rs. One

Thousand, the Bidder shall on submitting a monthly bill therefore be entitled to receive payment proportionate to the part of the work than approved and passed by the Engineer In-charge, whose certificate of such approval and passing of the sum so payable shall be final and conclusive against the Bidder. All such intermediate payments shall be regarded as payments by way of advance against the final payments only and not as payments for work actual done and completed and shall not preclude the Engineer In-charge from requiring any bad, unsound, imperfect or unskillful work to be removed or taken away and reconstructed or re-erected nor shall any such payment be considered as an admission of the due performance of the contract or any part thereof in any respect or the offering of any claim not shall it conclude, determine or effect in any other way, the powers of the Engineer In-charge as to the final settlement and adjustment of the accounts or otherwise, or in any other way vary or effect the contract. The final bill shall be submitted by the Bidder within one month of the date fixed for the completion of the work otherwise the Engineer In-charge's certificate of the measurements and of the total amount payable for the work shall be final and binding on all parties.

**37.** The Bidder shall not be entitled to compensation to the extent that the Employer's interests are adversely affected by the Bidder for not having given early warning or not having cooperated with the Engineer.

**38. Tax**

G.S.T. and other state levies/cess which are not subsumed under G.S.T. will be applicable. The Bidder shall quote inclusive of all taxes. It is clearly understood that BMC will not bear any additional liability towards payment of any Taxes and Duties.

Wherever the services to be provided by the Bidders falls under Reverse Charge Mechanism, the price quoted shall be exclusive of GST, but inclusive of Taxes/Duties/Cess other than G.S.T., if any.

Rates accepted by BMC shall hold good till completion of work and no additional individual claim shall be admissible on account of fluctuation in market rates; increase in taxes / any other levies / toll etc. except that payment /recovery for overall market situation shall be made as per price variation.

“As per circular CA/Finance/Proj/City/17, dtd:-06.09.2017 “ Chapter XXI – Miscellaneous , section 171(1) of G.S.T. Act, 2017 governs the “Anti Profiting Measure”(AMP). As per provision of this section , ‘Any reduction in rate of tax on any supply of goods or services or the benefit of input tax credit shall be passed on to the recipient by way of commensurate reduction in prices.’

Accordingly, the Bidder should pass on the complete benefit accruing to him on

account of reduced tax rate or additional input tax credit, to BMC.

Further, all the provisions of G.S.T. Act will be applicable to the tender ”

### **39. Currencies**

All payments will be made in Indian Rupees.

### **40. Liquidated Damages**

Both, the Bidder and the Employer have agreed that it is not feasible to precisely estimate the amount of losses due to delay in completion of works and the losses to the public and the economy, therefore, both the parties have agreed that the Bidder shall pay liquidated damages to the Employer and not by way of penalty, at the rate per week or part thereof stated in the Contract Data for the period that the Completion Date is later than the Intended Completion Date. Liquidated damages at the same rates shall be withheld if the Bidder fails to achieve the milestones prescribed in the Contract Data. However, in case the Bidder achieves the next milestone, the amount of the liquidated damages already withheld shall be restored to the Bidder by adjustment in the next payment certificate. The Employer and the Bidder have agreed that this is a reasonable agreed amount of liquidated damage. The Employer may deduct liquidated damages from payments due to the Bidder. Payment of liquidated damages shall not affect the Bidder's other liabilities.

### **41. Cost of Repairs**

Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Bidder at his cost if the loss or damage arises from the Bidder's acts or omissions.

## **E. Finishing the Contract**

### **42. Completion of Construction and Maintenance**

42.1 The Bidder shall request the Engineer to issue a certificate of completion of the construction of the works, and the Engineer will do so upon deciding that the works is completed. This shall be governed as per clause no.8(g) of Standard General Conditions of Contract.

### **43. Taking Over**

43.1 The Employer shall take over the works within seven days of the Engineer issuing a certificate of completion of works. The Bidder shall continue to remain responsible for its routine maintenance during the maintenance period if specified in the contract.

#### 44. Final Account

~~Final joint measurement along with the representatives of the Bidder should be taken recorded and signed by the Bidders.~~ Bidders should submit the final bill within 1 month of physical completion of the work.

If the Bidder fails to submit the final bill within 1 month, the BMC staff will prepare the final bill based on the joint measurement within next 3 months.

Engineer's decision shall be final in respect of claims for defect and pending claims against Bidders.

No further claims should be made by the Bidder after submission of the final bill and these shall be deemed to have been waived and extinguished. Payment of those items of the bills in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by the Commissioner shall be made within a reasonable period as may be necessary for the purpose of verification etc.

After payment of the final bill as aforesaid has been made, the Bidder may, if he so desires, reconsider his position in respect of a disputed portion of the final bills and if he fails to do so within 84 days, his disputed claim shall be dealt with as provided in the contract.

A percentage of the retention money, over and above the actual retention money as indicated below shall be held back from payments till the finalization of final bill to be submitted as per above and will be paid within 30 days of acceptance of the final bill.

Sr.no.	Amount of Contract Cost	Minimum Payable Amount in final bill
1	Upto Rs.5 Crs.	Rs.10 Lacs or final bill whichever is more
2	Upto Rs.25 Crs.	Rs.1 Crore or final bill amount whichever is more
3	Upto Rs. 50 Crs.	Rs.2 Crores or final bill amount whichever is
4	Upto Rs.100 Crs.	Rs.4 Crore or final bill amount whichever is
5	More than Rs.100 Crs.	Rs.7 Crore or final bill amount whichever is

The Bidders have to submit the bill for the work carried out within 15 days from the date of completion of the work to the respective executing department. If the Bidder fails to submit their bills to concerned executing department, penalty or action as shown below will be taken for each delayed bill:-

After 15 days from the date of Completion/running bill up to certain date, upto next 15 days i.e. upto 30 days	Equal to 5% of bill amount
Next 15 days upto 45 days from the date of completion/running bill upto specified date	Equal to 10% of bill amount
If not submitted within 45 days from the date of Completion / R.A. bill	Bill will not be admitted for payment.

#### **45. Operating and Maintenance Manuals**

45.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Bidder shall supply them by the dates stated in the Contract Data.

45.2 If the Bidder does not supply the Drawings and/or manuals by the dates stated in the Contract Data, or they do not receive the Engineer's approval, the Engineer shall withhold the amount stated in the Contract Data from payments due to the Bidder.

#### **46. Termination**

46.1 The Employer or the Bidder may terminate the Contract if the other party causes a fundamental breach of the Contract.

46.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:

a) The Bidder stops work for 30 days when no stoppage of work is shown on the current

Programme and the stoppage has not been authorized by the Engineer;

b) The Bidder is declared as bankrupt or goes into liquidation other than for approved reconstruction or amalgamation;

c) The Engineer gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Bidder fails to correct it within a reasonable period of time determined by the Engineer;

d) The Bidder does not maintain a Security, which is required;

e) The Bidder has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in relevant clause.

f) The Bidder fails to provide insurance cover as required under relevant clause .

g) If the Bidder, in the judgment of the Employer, has engaged in the corrupt or fraudulent practices as defined in GCC in competing for or in executing the Contract.

h) If the Bidder fails to set up a field laboratory with the prescribed equipment, within the period specified in the Contract Data; and

i) Any other fundamental breaches as specified in the Contract Data.

j) If the Bidder fails to deploy machinery and equipment or personnel as specified in the

Contract Data at the appropriate time.

46.3 When either party to the contract gives notice of a breach of contract to the Engineer for a cause other than those listed above, the Engineer shall decide whether the breach is fundamental or not.

46.4 Notwithstanding the above, the Employer may terminate the Contract for convenience.

46.5 If the Contract is terminated, the Bidder shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

#### **47. Payment upon Termination**

47.1 If the Contract is terminated because of a fundamental breach of Contract by the Bidder, the Engineer shall issue a certificate for value of the work done and materials ordered less liquidated damages, if any, less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the Contract Data. If the total amount due to the Employer exceeds any payment due to the Bidder, the difference shall be recovered from the security deposit, and performance security. If any amount is still left un-recovered it will be a debt due from the Bidder to the Employer.

47.2 If the Contract is terminated at the Employer's convenience, the Engineer shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment, repatriation of the Bidder's personnel employed solely on the Works, and the Bidder's costs of protecting and securing the Works and less advance payments received up to the date of the certificate, less other recoveries due in terms of the Contract, and less taxes due to be deducted at source as per applicable law.

#### **48. Property**

48.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Employer for use for completing balance construction work if the Contract is terminated because of the Bidder's default, till the Works is completed after which it will be transferred to the Bidder and credit, if any, given for its use.

**49. Release from Performance**

If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of the Employer or the Bidder, the Engineer shall certify that the Contract has been frustrated. The Bidder shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made

**A) Other Conditions of Contract**

**50. Labour**

50.1 The Bidder shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

50.2 The Bidder shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the number of the several classes of labour from time to time employed by the Bidder on the site and such other information as the Engineer may require.

**51. Compliance with Labour Regulations**

(a) During continuance of the Contract, the Bidder and his sub-Bidders shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority.

(b) Furthermore, the Bidder shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the Bidder, the Engineer/Employer shall have the right to deduct any money due to the Bidder including his amount of performance guarantee. The Employer/Engineer shall also have right to recover from the Bidder any sum required or estimated to be required for making good the loss or damage suffered by the Employer.

(c) The Bidder shall require his employees to obey all applicable laws, including those concerning safety at work.

(d) The employees of the Bidder and the Sub-Bidder in no case shall be treated as the employees of the Employer at any point of time.

## **52. Drawings and Photographs of the Works**

52.1 The Bidder shall do photography/video photography of the site firstly before the start of the work, secondly mid-way in the execution of different stages of work as required by Engineer In-charge and lastly after the completion of the work. No separate payment will be made to the Bidder for this.

52.2 The Bidder shall not disclose details of Drawings furnished to him and works on which he is engaged without the prior approval of the Engineer in writing. No photograph of the works or any part thereof or plant employed thereon, except those permitted under above clause, shall be taken or permitted by the Bidder to be taken by any of his employees or any employees of his sub-Bidders without the prior approval of the Engineer in writing. No photographs/ Video photography shall be published or otherwise circulated without the approval of the Engineer in writing.

## **53. The Apprentices Act, 1961**

The Bidder shall duly comply with the provisions of the Apprentices Act 1961 (III of 1961), the rules made there under and the orders that may be issued from time to time under the said Act and the said Rules and on his failure or neglect to do so, he shall be subject to all liabilities and penalties provided by the said Act and said Rules.

## **54 Contract Document**

The documents forming the contract are to be taken as mutually explanatory of one another. Unless otherwise provided in the contract, the priority of the documents forming the contract shall be, as follows:

- 1) Contract Agreement (if completed)
- 2) The letter of Acceptance
- 3) The Bid:
- 4) Addendum to Bid; if any
- 5) Tender Document
- 6) The Bill of Quantities:



- 7) The Specification:
- 8) Detailed Engineering Drawings
- 9) Standard General Conditions of Contracts (GCC)
- 10) All correspondence documents between Bidder/Bidder and BMC.

## **55 Conflict of Interest**

The Applicant shall not have a conflict of interest (the "Conflict of Interest") that affects the Bidding Process. Any Applicant found to have a Conflict of Interest shall be disqualified. An Applicant shall be deemed to have a Conflict of Interest affecting the Bidding Process, if

1. A constituent of such Applicant is also a constituent of another Applicant; or
2. Such Applicant has the same legal representative for purposes of this Application as any other Applicant; or
3. Such Applicant, or any Associate thereof has a relationship with another Applicant, or any Associate thereof, directly or through common third party/ parties, that puts either or both of them in a position to have access to each other's information about, or to influence the Application of either or each other; or
4. The Applicant shall be liable for disqualification if any legal, financial or technical adviser of the Authority in relation to the Project is engaged by the Applicant, its Member or any Associate thereof, as the case may be, in any manner for matters related to or incidental to the Project. For the avoidance of doubt, this disqualification shall not apply where such adviser was engaged by the Applicant, its Member or Associate in the past but its assignment expired or was terminated 6 (six) months prior to the date of issue of this TENDER. Nor will this disqualification apply where such adviser is engaged after a period of 3 (three) years from the date of commercial operation of the Project.

## **56. Applications and costs thereof**

No Applicant shall submit more than one Application for the Project. An applicant applying individually shall not be entitled to submit another application either individually. The Applicant shall be responsible for all of the costs associated with the preparation of their Applications and their participation in the Bid Process. The Authority will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Bidding Process.

## **57. Acknowledgment by Applicant**

.It shall be deemed that by submitting the Application, the Applicant has:

- a. made a complete and careful examination of the tender;
- b. received all relevant information requested from the Authority;
- c. accepted the risk of inadequacy, error or mistake in the information provided in the tender or furnished by or on behalf of the Authority relating to any of the matters referred; and
- d. Agreed to be bound by the undertakings provided by it under and in terms hereof.

“The Authority” shall not be liable for any omission, mistake or error in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to the TENDER or the Bidding Process, including any error or mistake therein or in any information or data given by the Authority.

## **58. Right to accept or reject any or all Applications / Bids**

Notwithstanding anything contained in this TENDER, “The Authority” reserves the right to accept or reject any Application and to annul the Bidding Process and reject all Applications/ Bids, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons therefore. In the event that the Authority rejects or annuls all the Bids, it may, in its discretion, invite all eligible Bidders to submit fresh Bids hereunder.

“The Authority” reserves the right to reject any Application and/ or Bid if:

- (a) at any time, a material misrepresentation is made or uncovered,  
or
- (b) the Applicant does not provide, within the time specified by the Authority, the supplemental information sought by the Authority for evaluation of the Application.

In case it is found during the evaluation or at any time before signing of the Agreement or after its execution and during the period of subsistence thereof including the concession thereby granted by “The Authority”, that one or more of the pre-qualification conditions have not been met by the Applicant, or the Applicant has made material misrepresentation or has given any materially incorrect or false information, the Applicant shall be disqualified forthwith if not yet appointed as the Successful Bidder either by issue of the LOA (Letter of Approval) or entering into of the Agreement, and if the Applicant has already been issued the LOA or has entered into the Concession Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this TENDER, be liable to be terminated, by a

communication in writing by “The Authority” to the Applicant, without the Authority being liable in any manner whatsoever to the Applicant and without prejudice to any other right or remedy which the Authority may have under this TENDER, the Bidding Documents, the Concession Agreement or under applicable law.

“The Authority” reserves the right to verify all statements, information and documents submitted by the Applicant in response to the TENDER. Any such verification or lack of such verification by the Authority shall not relieve the Applicant of its obligations or liabilities

hereunder nor will it affect any rights of the Authority there under.

**59 The bid shall be rejected if the Bidder-**

- a. Stipulates the validity period less than 180 days.
- b. Stipulates own condition/conditions.
- c. Does not fill and (digital) sign undertaking forms, which are incorporated, in the document.

**60 Clarifications**

Applicants requiring any clarification on the tender may notify “the Authority” in writing or by fax or e-mail. They should send in their queries before the date specified in the header data. “The Authority” shall Endeavor to respond to the queries within the period specified

therein. The responses will be sent by fax and/or e-mail. The Authority will forward all the queries and its responses thereto, to all purchasers of the TENDER without identifying the source of queries.

“The Authority” shall Endeavor to respond to the questions raised or clarifications sought by the Applicants. However, the Authority reserves the right not to respond to any question or provide any clarification, in its sole discretion, and nothing in this Clause shall be taken or read as compelling or requiring the Authority to respond to any question or to provide any clarification, but not later than the date provided in header data.

“The Authority” may also on its own motion, if deemed necessary, issue interpretations and clarifications to all Applicants. All clarifications and interpretations issued by the Authority shall be deemed to be part of the tender. Verbal clarifications and information given by Authority or its employees or representatives shall not in any way or manner be binding on the Authority.

**61 Amendment of tender**

At any time prior to the deadline for submission of Application, the Authority may, for any reason, whether at its own initiative or in response to clarifications requested by an

Applicant, modify the tender by the issuance of Addendum. Any Addendum thus issued will be sent in writing/ Fax/ Email to all those who have purchased the tender. In order to afford the Applicants a reasonable time for taking an Addendum into account, or for any other reason, the Authority may, in its sole discretion, extend the Application Due Date.

## **62 Language**

The Application and all related correspondence and documents in relation to the Bidding Process shall be in English language. Supporting documents and printed literature furnished by the Applicant with the Application may be in any other language provided that they are accompanied by translations of all the pertinent passages in the English language, duly authenticated and certified by the Applicant. Supporting materials, which are not translated into English, may not be considered. For the purpose of interpretation and evaluation of the Application, the English language translation shall prevail.

## **63. Format and signing of Application**

The Applicant shall provide all the information sought under this TENDER. The Authority will evaluate only those Applications that are received in the required formats and complete in all respects. Incomplete and /or conditional Applications shall be liable to rejection.

The Applicant will upload bid in One Folder in electronic form which shall contain the scanned certified copies of the documents given below and the documents uploaded has to be digitally signed by the Bidder. These copies shall be certified by Practicing Notary approved by the Govt. of Maharashtra or Govt. of India with his stamp, clearly stating his name & registration number, except where original documents are demanded

## **64. Marking of Applications**

The Applicant shall submit the Application in the format specified at Appendix-I, together with the documents, upload in folder as "VENDOR" together with their respective enclosures Applications submitted by fax, telex, telegram shall not be entertained and shall be rejected outright.

## **65. Late Applications**

Applications received by the Authority after the specified time on the Application Due Date shall not be eligible for consideration and shall be summarily rejected.

## **66. Confidentiality**

Information relating to the examination, clarification, evaluation, and recommendation for the short-listed qualified Applicants shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional advisor advising the Authority in relation to or matters arising out of, or concerning the Bidding Process. The Authority will treat all information, submitted as part of Application, in confidence and will require all those who have access to such material to treat the same in confidence. The Authority may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/ or the Authority or as may be required by law or in connection with any legal process.

## **67. Clarification Of Financial Bids**

To assist in the examination, evaluation and comparison of Bids, the Engineer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdown of unit rates. The request for clarification and the response shall be in writing or by post/facsimile/e-mail.

No Bidder shall contact the Engineer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. Any effort by the Bidder to influence the Engineer in the Engineer's bid evaluation, bid comparison or contract award decisions may result in the rejection of the Bidder's bid.

## **68. Inspection of site and sufficiency of tender:**

1. The Bidder shall inspect and examine the site and its surrounding and shall satisfy himself before submitting his tender as to the nature of the ground and subsoil (so far as is practicable), the form and nature of the site, the quantities and nature of the work and materials necessary for the completion of the works and means of access to the site, the accommodation he may require and in general shall himself obtain all necessary information as to risk, contingencies and other circumstances which may influence or affect his tender. He shall also take into consideration the hydrological and climatic conditions.

2. The Employer may make available to the Bidder data on hydrological and sub-surface conditions as obtained by or on his behalf from investigations relevant to the works but the Bidder shall be responsible for his own interpretation thereof. The Bidder shall engage his investigating agency with prior approval of the Engineer from the approved list of such agencies by BMC or Govt. at his cost initially before commencing actual work and which shall be reimbursed immediately subject to satisfaction of the Engineer for

faithful compliance and submission of required data regarding such investigation within specified time.

The Bidder shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the schedule of works / items / quantities, or in Bill of Quantities, which rates and prices shall, except as otherwise provided cover all his obligations under the Contract and all matters and things necessary for proper completion and maintenance of the works. No extra charges consequent on any misunderstanding.

**4. Not Foreseeable Physical Obstructions or Conditions:** If, however, during the execution of the Works the Bidder encounters physical obstructions or physical conditions, other than climatic conditions on the Site, which obstructions or conditions were, in his opinion, not foreseeable by an experienced Bidder, the Bidder shall forthwith give notice thereof to the Engineer. On receipt of such notice, the Engineer shall, if in his opinion such obstructions or conditions could not have been reasonably foreseen by an experienced Bidder, after due consultation with the Bidder, determine:

- any extension of time to which the Bidder is entitled and
- The amount of any costs which may have been incurred by the Bidder by reason of such obstructions or conditions having been encountered, which shall be added to the Contract Price, and shall notify the Bidder accordingly. Such determination shall take account of any instruction which the Engineer may issue to the Bidder in connection therewith, and any proper and reasonable measures acceptable to the Engineer which the Bidder may take in the absence of specific instructions from the Engineer. However such costing shall be got approved by the competent authority as governed vide rules prevailing with authority.

**5. Office for the Engineer (Works costing upto Rs.50 Lakhs) – If applicable**

~~The Bidder shall at his own cost and to satisfaction of the Engineer provide a small temporary office, at the work-site which will include tables, chairs and lockers for keeping the records. He shall also make necessary arrangements for drinking water, telephone with a pre-requisite of e-governance and electronic communication. These offices are not to be allowed on public roads without the written instruction of the Engineer. These offices should be preferably located within 50 to 500 m of the worksite. In case the office is more than 500m away from the worksite, the Bidder is to provide conveyance for Municipal Staff.~~

**6. Office for the Engineer (Works costing above Rs.50 lakhs) – If applicable**

~~The Bidder shall at his own cost and to satisfaction of the Engineer provide a temporary office at the work site which will include tables, chairs and lockers for keeping the records. He shall also make necessary arrangements for drinking water, latrines, with doors, windows, locks, bolts and fastenings sufficient for security for the Engineer, and his subordinates, as close to the works from time to time in progress as can be conveniently arranged, and shall at his own cost furnish the office with such chairs, tables, lockers, locks and fastenings as may be required by the Engineer, and no expense of any kind in connection with the erection or upkeep of the offices or fittings shall be borne by the Corporation, but all such work shall be carried out by the Bidder and the expenses thereof defrayed by him. The Bidder shall also make water connections and fit up stand pipe with a bib tap at each office. The latrines~~

~~and the water connections shall be subject to all the conditions herein elsewhere laid down for~~

~~temporary water connection and latrines generally with all requisite equipments for e-governance and electronic and digital communication. These offices are not to be allowed on public roads without the written instruction of the Engineer. These offices should be preferably located within 50 to 500 m of the worksite. In case the office is more than 500m away from the worksite, the Bidder is to provide conveyance. Also, for staff working beyond working hours the Bidder has to provide conveyance.~~

**7. ~~Permission for provision and removal of office on completion of work:~~** ~~The Bidder shall obtain permission for provision of site office, cement go-down, store, etc. on payment of necessary cost implication. The cement go-down, Watchman cabins, etc. shall be provided as directed and shall be removed by the Bidders on completion of the work at their cost. It is binding on the Bidder to fulfill requirements of Environmental Authorities. The location of such office shall be finalized and got approved from the Engineer before erection/commencement work.~~

**8. ~~Bidder's office near works:~~** ~~The Bidder shall have an office near the works at which notice from the Commissioner or the Engineer may be served and shall, between the hours of sunrise and sunset on all working days, have a clerk or some other authorized person always present at such office upon whom such notices may be served and service of any notices left with such clerk or other authorized person or at such office shall be deemed good service upon the Bidder and such offices shall have pre-requisite facilities for e-governance.~~

## **69 Official Secrecy:**

The Bidder shall of all the persons employed in any works in connection with the contract that the India Official Secrets Act 1923 (XIX of 1923) applies to them and will continue to apply even after execution of the said works and they will not disclose any information regarding this contract to any third party. The Bidder shall also bring into notice that, any information found to be leaked out or disclosed the concern person as well as the Bidder will be liable for penal action; further the Corporation will be at liberty to terminate the contract without notice.

## **70 Subsequent Legislation:**

If on the day of submission of bids for the contract, there occur changes to any National or State statute, Ordinance, decree or other law or any regulation or By-laws or any local or other duly constituted authority or the introduction of any such National or State Statute, Ordinance, decree or by which causes additional or reduced cost to the Bidder, such additional or reduced cost shall, after due consultation with the Bidder, be determined by the concerned Engineering Department of BMC and shall be added to or deducted from the Contract Price with prior approval of competent authority and the concerned Engineering Department shall notify the Bidder accordingly with a copy to the Employer. BMC reserve the right to take decision in respect of addition/reduction of cost in contract.

## **71 Patent, Right and Royalties:**

The Bidder shall save harmless and indemnify the Corporation from and against all claims and proceedings for or on account of infringement of any Patent rights, design trademark or name of other protected rights in respect of any constructional plant, machine work, or material used for or in connection with the Works or any of them and from and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto. Except where otherwise specified, the Bidder shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the works or any of them.

## **72 Payments, Tax and Claims:**

### **The limit for unforeseen claims**

Under no circumstances whatever the Bidder shall be entitled to any compensation from BMC on any account unless the Bidder shall have submitted a claim in writing to the Eng-in-change within 1 month of the case of such claim occurring.

### **No interest for delayed payments due to disputes, etc:**



It is agreed that the **BRIHANMUMBAI MAHANAGARPALIKA** or its Engineer or Officer shall not be liable to pay any interest or damage with respect of any moneys or balance which may be in its or its Engineer's or officer's hands owing to any dispute or difference or claim or misunderstanding between the **BRIHANMUMBAI MAHANAGARPALIKA** or its Engineer or Officer on the one hand and the Bidder on the other, or with respect to any delay on the part of the **BRIHANMUMBAI MAHANAGARPALIKA** or its Engineer or Officers in making periodical or final payments or in any other respect whatever.

### **73 Settlement of Disputes:**

- **Termination of contract for death**

If the Bidder is an individual or a proprietary concern and the individual or the proprietor dies and if the Bidder is a partnership concern and one of the legal representative of the individual Bidder or the proprietor of the proprietary concern and in case of partnership, the surviving partners, are capable of carrying out and completing the contract, the Commissioner shall be entitled to cancel the contract as to its uncompleted part without the Corporation being in any way liable to payment of any compensation to the estate of the deceased Bidder and or to the surviving partners of the Bidder's firm on account of the cancellation of the contract. The decision of the Commissioner that the legal representative of the deceased Bidder or surviving partners of the Bidder's firm cannot carry out and complete the contract shall be final and binding on the parties. In the event of such cancellation the Commissioner shall not hold estate of the deceased Bidder and or surviving partners of the Bidder's firm liable in damages for not completing the contract.

- **Settlement of Disputes:**

If any dispute or differences of any kind whatsoever other than those in respect of which, the decision of any person is, by the Contract, expressed to be final and binding) shall arise between the Employer and the Bidder or the Engineer and the Bidder in connection with or arising out of the Contract or carrying out of the Works (Whether during the progress of the Works or after their completion and whether before or after the termination, abandonment or breach of the Contract) it, the aggrieved party may refer such dispute within a period of 7 days to the concerned Addl. Municipal Commissioner who shall constitute a committee comprising of three officers i.e. concerned Deputy Municipal Commissioner or Director (ES&P), Chief Engineer other than the Engineer of the Contract and concerned Chief Accountant. The Committee shall give decision in writing within 60 days. Appeal on the Order of the Committee may be referred to the Municipal Commissioner within 7 days. Thereafter the Municipal Commissioner shall

constitute a Committee comprising of three Addl. Municipal Commissioners including Addl. Municipal Commissioner in charge of Finance Department. The Municipal Commissioner within a period of 90 days after being requested to do so shall give written notice of committee's decision to the Bidder. Save as herein provided such decision in respect of every matter so referred shall be final and binding upon both parties until the completion of the works, and shall forthwith be given effect to by the Bidder who shall proceed with the works with due diligence, whether he requires arbitration as hereinafter provided or not. If the Commissioner has given written notice of the decision to the Bidder and no Claim to arbitration has been communicated within a period of 90 days from receipt of such notice the said decision shall remain final and binding upon the Bidder.

**74 Arbitration and Jurisdiction:**

If the Commissioner shall fail to give notice of the decision as aforesaid within a period of 90 days after being requested as aforesaid, or if the Bidder be dissatisfied with any such decision, then and in any such case the Bidder may within 90 days after receiving notice of such decision or within 90 days after the expirations of the first named period of 90 days (as the case may be) require that the matter or matters in dispute be referred to arbitration as hereinafter provided. All disputes or differences in respect of which the decision (if any) of the Commissioner has not become final and binding as aforesaid shall be finally settled by

Arbitration as follows:

Arbitration shall be effected by a single arbitrator agreed upon the parties. The arbitration shall be conducted in accordance with the provisions of the Arbitration Act, 1996 or any statutory modifications thereof, and shall be held at such place and time within the limits of Brihan Mumbai as the arbitrator may determine. The decision of the arbitrator shall be final and binding upon the parties hereto and the expense of the arbitration shall be paid as may be determined by the arbitrator. Performance under the Contract shall, if reasonably be possible, continued during the arbitration proceedings and payment due to the Bidder by the Employer shall not be withheld unless they are the subject matter of arbitration proceedings. The said arbitrator shall have full power to open up, review and revise any decision, opinion, direction, certification or valuation of the Commissioner and neither party shall be limited in the proceedings before such arbitrator to the evidence or arguments put before the Commissioner for the purpose of obtaining his said decision. No decision given by the Commissioner in accordance with the foregoing provisions shall disqualify him from being called as a witness and giving evidence before the arbitrator on any matters whatsoever relevant to the disputes or difference referred to the arbitrator as aforesaid. All awards shall be in writing and for claims equivalent to 5,00,000 or more such awards shall state reasons for amounts awarded. The expenditure

of arbitration shall be paid as may be determined by arbitrator. In case of any claim, dispute or difference arising in respect of a contract, the cause of action thereof shall be deemed to have arisen in Mumbai and all legal proceedings in respect of any claim, dispute or difference shall be instituted in a competent court in the City of Mumbai only.

**75 Copyright:**

The copyright of all drawings and other documents provided by the Bidder under the contract shall remain vested in the Bidder or his sub-Bidders as the case may be the employer shall have a license to use such drawings and other documents in connection with the design, construction, operation, maintenance of the works. At any time the Employer shall have further license without additional payment to the Bidder to use any such drawings or documents for the purpose of making any improvement of the works or enlargement or duplication of any part thereof, provided that such improvement, enlargement, or duplication by itself or in conjunction with any other improvements, enlargements or duplications already made in accordance with the further license does not result in the duplication of the whole works.

**76. Receipts to be signed in firm's name by any one of the partners:**

Every receipt for money which may become payable or for any security which may become transferable to the Bidder under these present shall, if signed in the partnership name by any one of the partners, be a good and sufficient discharge to the Commissioner and Municipal Corporation in respect of the money or security purporting to be acknowledged thereby, and in the event of death of any of the partners during the pendency of this contract, it is hereby expressly agreed that every receipt by any one of the surviving partners shall, if so signed as aforesaid, be good and sufficient discharge as aforesaid provided that nothing in this clause contained shall be deemed to prejudice or effect any claim which the Commissioner or the Corporation may hereafter have against the legal representatives of any partners so dying or in respect of any breach of any of the conditions thereof, provided also that nothing in this clause contained shall be deemed prejudicial or affect the respective rights or obligations of the Bidders and of the legal representatives of any deceased Bidders interest.

**77 Proprietary data**

All documents and other information supplied by the Authority or submitted by an Applicant to the Authority shall remain or become the property of the Authority. Applicants are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their Application. The Authority will not return any Application or any information provided along therewith.

## 78 Correspondence with the Applicant

Save and except as provided in this TENDER, the Authority shall not entertain any correspondence with any Applicant in relation to the acceptance or rejection of any Application.

## 79 Price Variation Clause

~~The Bidder shall be reimbursed or shall refund to the Corporation as the case may be the variation in the value of the work carried out from time to time, depending on whether the prices of material and labour as a whole rise or fall, and the method adopted for such computations shall be as given below, it being clearly understood that the Bidder shall~~

~~have no claim for being reimbursed on the ground that the price of a particular material or group of materials have risen beyond the limits of the presumptions made in the following paras, however, no price variations shall be made applicable for contracts upto 12 months:~~

~~A) Controlled materials: Price variations shall be permitted in respect of these materials the \_\_\_\_\_ price level of which is controlled by the Government or its agency. The rate ruling on the \_\_\_\_\_ date of submission of the tender shall be considered as the basic price of such \_\_\_\_\_ material for adjustment. Any variation in this rate shall be considered for \_\_\_\_\_ reimbursement to the Bidder or refund to be claimed from the Bidder as the case \_\_\_\_\_ may be. The Bidder shall, for the purpose of adjustment submit in original the relevant documents from the suppliers.~~

~~B) Labour and other materials: For the purpose of this contract and for allowing reimbursement of refund on account of variation of prices of (i) labour, and (ii) materials other than materials mentioned in A above, computation will be based on the formula enunciated below which is based on the presumptions that:~~

~~i) The general price level of labour, rises or falls in proportion to the rise or fall of consumer price index number 9 (general) for working class in Mumbai.~~

~~ii) The general price level of materials rises or falls in proportion to rise or fall of whole-sale price index as published by "Economic Adviser to Govt. of India".~~

~~ii) And that the component of labour is to the extent of 30 percent of 88 percent and the component of materials is to the extent of 70 percent of 88 percent of the value of the work carried out. The remaining 12 percent being the presumptive profit of the Bidder.~~

~~a) Formula for Labour component:-~~

$$\text{VL} = \frac{(0.88 R) \times 30}{100} \times \frac{(1 - IO)}{10}$$

b) Formula for Material component :

$$VM = \frac{(0.88 R \times I - C) \times (W - WO)}{100 - WO}$$

Where —

~~VL = Amount of price variation to be reimbursed or claimed as refund on account of general rise or fall of index referred to above.~~

~~I = Consumer Price Index number of working class for Mumbai (declared by the Commissioner of Labour and Director of Employment, Mumbai) applicable to the period under reference (base year ending 2004-05 as 100 i.e. new series of indices).~~

~~IO = Consumer price index number for working class for Mumbai (declared by the Commissioner of labour and Director of Employment, Mumbai) prevailing, on the day of 28 days prior to the date of submission of the tender.~~

~~VM = The amount of price variation to be reimbursed or claimed as refund on account of general rise or fall of wholesale price index for period under reference.~~

~~W = Average wholesale price index as published by Economic Adviser to Govt. of India applicable to the period under reference.~~

~~WO = Wholesale price index as stated above prevailing on the day of 28 days prior to the date of submission of the tender.~~

~~R = Total value of the work done during the period under reference as recorded in the Measurement Book excluding water charges and sewerage charges but including cost of excess in respect of item upto 50 percent~~

~~C = Total value of Controlled materials used for the works as recorded in Measurement Book and paid for at original basic rate plus the value of materials used.~~

~~i) The quantity of the Controlled material adopted in working out the value of "C" shall be inclusive of permitted wastages as / if mentioned in specifications.~~

~~ii) The basic rate for the supply of controlled material shall be inclusive of all the components of cost of materials excluding transport charges incurred for bringing the material from place of delivery to the site. Computations based on the above formula will be made for the period of each bill separately and reimbursement will be made to (when the result is plus) and refund will claimed from (when the result is minus) the Bidder's next bill. The above formulae will be replaced by the formulae in Annexure-I as and when mentioned in special conditions of contract. The operative period of the~~

~~—contract for application of price variation shall mean the period commencing from the date of commencement of work mentioned in the work order and ending on the date when time allowed for the work order and ending on the date when time allowed for the work specified in the contract for work expires, taking into consideration, the extension of time, if any, for completion of the work granted by Engineer under the relevant clause of the conditions of contract in cases other than those where such extension is necessitated on account of default of the Bidder. The decision of the Engineer as regards the operative period of the contract shall be final and binding on the Bidders.~~

~~iii) Where there is no supply of controlled items to Bidder the component "C" shall be taken as zero.~~

~~C) Adjustment after completion: If the Bidder fails to complete the works within the time for completion adjustment of prices thereafter until the date of completion of the~~

~~works shall be made using either the indices or prices relating to the prescribed time for completion, or the current indices or prices whichever is more favorable to the employer, provided that if an extension of time is granted, the above provision shall apply only to adjustments made after the expiry of such extension of time.~~

~~D) Price variation will be calculated similarly and separately for extra items and / or excess quantities and provisional sums calculated under Sub Clause 10 (b)A (i)&(ii) and Sub Clause 10 (b) B(ii) based on the above formula/formulae in Annexure-I as and when mentioned in Special conditions of contract; IO and WO being the indices applicable to the date on which the rates under Sub Clause 10 (a)A (i)&(ii) and Sub Clause 10 (a) B(iii) are fixed. No price variation shall be admissible for FAIR items created during execution.~~

**80. Maximum Price Variation shall be as follows:**

<b>Time Period of Project</b>	<b>Maximum limit of Price Variation</b>
Up to 12 months	No variation allowed
Above 12 months to 24 months	5%
<b>Above 24 months</b>	<b>10%</b>

~~Approval of AMC/MC shall be obtained before invitation of tender in case of any changes in above.~~

~~Note: 1) The extension in time period for the projects originally estimated including monsoon results in change of price variation slabs as mentioned above.~~

~~i.e. from first slab to second slab or from second slab to third slab, then the maximum limit of original slab will prevail.~~

~~2) Operative period shall mean original or extended time period of contract.~~

**For example:**

<b>Extension of Time period</b>	<b>Maximum Price Variation</b>
If original period of 11 months <del>including</del> monsoon extends to 16. The operative period will be 11+5 months.	No variation allowed
If original period of 11 months <del>excluding</del> monsoon extends to 16. The operative period will be 11+5 months.	Maximum 5% variation allowed

~~Price Variation during Extended Period of Contract:~~

~~(i) Extension Due To Modification & Extension for delay due to BMC :~~

~~The price variation for the period of extension granted shall be limited to the amount payable as per the Indices. In case the indices increases or decreases, above/below the indices applicable, to the last month of the original or extended period vide clause 8(l)(a)(i) and (ii) of standard GCC~~

~~(ii) Extension Of Time For Delay Due To Bidder :~~

~~(a) The price variation for the period of extension granted shall be limited to the amount payable as per the Indices in case the indices increase, above the indices applicable, to the last month of the original completion period or the extended period vide above clause 8(l)(a)(i) and (ii) of standard GCC.~~

~~(b) The price variation shall be limited to the amount payable as per the indices, in case the indices decrease or fall below the indices applicable, to the last month of original / extended period of completion period vide above clause 8(l)(b) of standard GCC, then lower indices shall be adopted.~~

~~(iii) Extension of Time For Delay due to reasons not attributable to BMC and Bidder (Reference Cl.8(d) of Standard GCC):~~

~~The price variation for the period of extension granted shall be limited to the amount payable as per the Indices in case the indices increases or decreases, above/below the indices applicable, to the last month of the original period.~~

## 81. Payment:

### A) 100% payment will be made after successful completion of work in all respect.

i) Interim bills shall be submitted by the Bidder from time to time (but at an interval of not less than one month) for the works executed. The Engineer shall arrange to have the bills verified by taking or causing to be taken, where necessary, the requisite measurement of work.

~~ii) Payment on account for amount admissible shall be made on the Engineer certifying the sum to which the Bidder is considered entitled by way of interim payment for all the work executed, after deducting there from the amount already paid, the security deposit / retention money and such other amounts as may be deductible or recoverable in terms of the contract.~~

~~iii) On request, the Bidder will be paid upto 75 percent of the value of the work carried out as an adhoc payment in the first week of next month after deducting there from recoveries on account of advances, interest, retention money, income tax etc . The balance payment due will be paid thereafter.~~

~~iv) No interim payment will be admitted until such time the Bidder have fully complied with the requirement of the Condition no.8 (g) and 8 (h) concerning submission and approval of Network Schedule for the works, as detailed in Condition 8 (h). A fixed sum shall be held in abeyance at the time of next interim payment for non-attainment of each milestone in the network and shall be released only on attainment of the said milestone.~~

~~v) An interim certificate given relating to work done or material delivered may be modified or corrected by a subsequent interim certificate or by the final certificate. No certificate of the Engineer supporting an interim payment shall of itself be conclusive evidence that any work or materials to which it relates is / are in accordance with the contract. . The balance payment due will be paid thereafter.~~

~~iv) No interim payment will be admitted until such time the Bidder have fully complied with the requirement of the Condition no.8 (g) and 8 (h) concerning submission and approval of Network Schedule for the works, as detailed in Condition 8~~



~~(h). A fixed sum shall be held in abeyance at the time of next interim payment for non-attainment of each milestone in the network and shall be released only on attainment of the said milestone.~~

~~v) An interim certificate given relating to work done or material delivered may be modified or corrected by a subsequent interim certificate or by the final certificate. No certificate of the Engineer supporting an interim payment shall of itself be conclusive evidence that any work or materials to which it relates is / are in accordance with the contract.~~

## **82 Banning/De-Registration of Agencies of Construction works in BMC**

- **The regulations regarding Demotion/ Suspension Banning for specific period or permanently / De-Registration shall be governed as per the respective condition in Bidder Registration Rules of BMC.**

## **83. JOINT VENTURE**

**~~In case if Joint Venture is allowed for the Project, the guidelines for JV as follows shall be incorporated in the Tender Document:~~**

- ~~a) Joint Venture should be allowed only when the number of identifiable different works is more than one and/or the estimated cost of tender is more than Rs.100 Crores. JV shall also be allowed for complex technical work below Rs.100 Crores with the approval of concerned AMC~~
- ~~b) Separate identity/name shall be given to the Joint Venture firm.~~
- ~~c) Number of members in a JV firm shall not be more than three in normal circumstances, if the work involves only one discipline (say Civil or Electrical). If number of members in JV is required to be more than three, then approval of concerned AMC needs to be sought.~~
- ~~d) A member of JV firm shall not be permitted to participate either in individual capacity or as a member of another JV firm in the same tender.~~
- ~~e) The tender form shall be purchased and submitted in the name of the JV firm or any constituent member of the JV.~~
- ~~f) Normally EMD shall be submitted only in the name of the JV and not in the name of constituent member. However, EMD in the name of lead partner can be accepted subject to submission of specific request letter from lead partner stating the reasons for not submitting the EMD in the name of JV and giving written confirmation from the JV partners to the effect that the EMD submitted by the lead partner may be deemed as EMD submitted by JV firm.~~
- ~~g) One of the members of the JV firm shall be the lead member of the JV firm who shall have a majority (at least 51%) share of interest in the JV firm. The other members shall have a share of not less than 20% each in case of JV firms with up to three members and not less than 10% each in case of JV firms with more than three members. In case of JV firm with foreign member(s), the lead member has to be an Indian firm with a minimum share of 51%.~~
- ~~h) A copy of Letter of Intent or Memorandum of Understanding (MoU) executed by the JV members shall be submitted by the JV firm along with the tender. The complete details of the members of the JV firm, their share and responsibility in the JV firm etc. particularly with reference to financial technical and other obligation shall be furnished in the~~

agreement.

- ~~i) Once the tender is submitted, the agreement shall not be modified/altere d/terminated during the validity of the tender. In case the Bidder fails to observe/comply with this stipulation, the full Earnest Money Deposit (EMD) shall be forfeited. In case of successful Bidder, the validity of this agreement shall be extended till the currency of the contract expires.~~
- ~~j) Approval for change of constitution of JV firm shall be at the sole discretion of the BMC. The constitution of the JV firm shall not be allowed to be modified after submission of the tender bid by the JV firm except when modification becomes inevitable due to succession laws etc. and in any case the minimum eligibility criteria should not get vitiated. In any case the Lead Member should continue to be the Lead Member of the JV firm. Failure to observe this requirement would render the offer invalid.~~
- ~~k) Similarly, after the contract is awarded, the constitution of JV firm shall not be allowed to be altered during the currency of contract except when modification become inevitable due to succession laws etc. and in any case the minimum eligibility criteria should not get vitiated. Failure to observe this stipulation shall be deemed to be breach of contract with all conse-quential penal action as per contract condition.~~
- ~~l) On award of contract to a JV firm, a single Performance Guarantee shall be required to be submitted by the JV firm as per tender conditions. All the Guarantees like Performance Guar-antee, Bank Guarantee for Mobilization advance, machinery Advance etc. shall be accepted only in the name of the JV firm and no splitting of guarantees amongst the members of the JV firm shall be permitted.~~
- ~~m) On issue of LOA, an agreement among the members of the JV firm (to whom the work has been awarded) has to be executed and got registered before the Registrar of the Companies under Companies Act or before the Registrar / Sub-Registrar under the Registration Act, 1908. This agreement shall be submitted by the JV firm to the BMC before signing the contract agreement for the work. (This agreement format should invariably be part of the ten-der condition). In case the Bidder fails to observe/comply with this stipulation, the full Earnest Money Deposit (EMD) shall be forfeited and other penal actions due shall be taken against partners of the JV and the JV. This joint venture agreement shall have, inter-alia, following clauses:-~~
- ~~i. **Joint and several liability** – The members of the JV firm to which the contract is awarded, shall be jointly and severally liable to the Employer (BMC) for execution of the project in accordance with General and Special conditions of the contract. The JV members shall also be liable jointly and severally for the loss, damages caused to the BMC during the course of execution of the contract or due to no execution of the contract or part thereof.~~
- ~~ii. **Duration of the Joint Venture Agreement** – It shall be valid during the entire period of the contract including the period of extension if any and the maintenance period after the work is completed.~~
- ~~iii. **Governing Laws** – The Joint Venture Agreement shall in all respect be governed by and in-terpreted in accordance with Indian Laws.~~
- ~~iv. **Authorized Member** – Joint Venture members shall authorize one of the members on behalf of the Joint Venture firm to deal with the tender, sign the agreement or enter into~~

~~contract in respect of the said tender, to receive payment, to witness joint measurement of work done, to sign measurement books and similar such action in respect of the said tender/contract. All notices/correspondences with respect to the contract would be sent only to this authorized member of the JV firm.~~

~~No member of the Joint Venture firm shall have the right to assign or transfer the interest—~~

~~right or liability in the contract without the written consent of the other members and that—~~

~~of the employer in respect of the said tender/contract.~~

**~~n. Documents to be enclosed by the JV firm along with the tender:~~**

~~i. In case one or more of the members of the JV firm is/are partnership firm(s), following documents shall be submitted:~~

~~a. Notary certified copy of the Partnership Deed,~~

~~b. Consent of all the partners to enter into the Joint Venture Agreement on a stamp paper of appropriate value (in original).~~

~~c. Power of Attorney (duly registered as per prevailing law) in favor of one of the partners to sign the MOU and JV Agreement on behalf of the partners and create liability against the firm.~~

~~ii. In case one or more members is/are Proprietary Firm or HUF, the following documents shall be enclosed:~~

~~a. Affidavit on Stamp Paper of appropriate value declaring that his Concern is a Proprietary Concern and he is sole proprietor of the Concern OR he is in position of "KARTA" of Hindu Undivided Family and he has the authority, power and consent given by other partners to act on behalf of HUF.~~

~~iii. In case one or more members is/are limited companies, the following documents shall be submitted:~~

~~a. Notary certified copy of resolutions of the Directors of the Company, permitting the company to enter into a JV agreement, authorizing MD or one of the Directors or Managers of the Company to sign MOU, JV Agreement, such other documents required to be signed on behalf of the Company and enter into liability against the company and/or do any other act on behalf of the company.~~

~~b. Copy of Memorandum and articles of Association of the Company.~~

~~c. Power of Attorney (duly registered as per prevailing law) by the Company authorizing the person to do/act mentioned in the para (a) above.~~

~~e. All the members of the JV shall certify that they have not been black listed or debarred by BMC from participation in tenders/contract in the past either in their individual capacity or the JV firm or partnership firm in which they were members / partners.~~

~~p. Credentials & Qualifying criteria: Technical and financial eligibility of the JV firm shall be adjudged based on satisfactory fulfillment of the following criteria:~~

~~**Technical eligibility criteria:** In case of Work involving single discipline, the Lead member of the JV firm shall meet at least 35% requirement of technical capacity as stipulated in tender document.~~

~~OR~~

~~In case of composite works (e.g. works involving more than one distinct component such as Civil Engineering works, M&E works, Electrical works, etc. and in the case of major bridges, substructure and superstructure etc.), at least one member should have satisfactorily completed 35% of the value of any one component of the project work so as to cover all the components of project work or any member having satisfactorily completed 35% of the value of work of each component during last seven financial years.~~

~~**In such cases, what constitutes a component in a composite work shall be clearly defined as part of the tender condition without any ambiguity.**~~

~~**Financial eligibility criteria:** The contractual payments received by the JV firm or the arithmetic sum of contractual payments received by all the members of JV firm in any one of the previous three financial years and shall be at least **100% of the estimated value** of the work as mentioned in the tender. **84. Compensation for delay:**~~

If the Bidder fails to complete the works and clear the site on or before the Contract or extended date(s) / period(s) of completion, he shall, without prejudice to any other right or remedy of Municipal Corporation on account of such breach, pay as agreed compensation, amount calculated as stipulated below (or such smaller amount as may be fixed by the Engineer) on the contract value of the whole work or on the contract value of the time or group of items of work for which separate period of completion are given in the contract and of which completion is delayed for every week that the whole of the work of item or group of items of work concerned remains uncompleted, even though the contract as a whole be completed by the contract or the extended date of completion. For this purpose the term "Contract Value" shall be the value of the work at Contract Rates as ordered including the value of all deviations ordered:

- Completion period for projects (originally stipulated or as extended) not exceeding 6 months: **to the extent of maximum 1 percent per week**
- Completion period for projects (originally stipulated or as extended) Exceeding 6 months and not exceeding 2 years : **to the extent of maximum ½ percent per week.**
- Completion period for projects (originally stipulated or as extended) exceeding 2 years : **to the extent of maximum ¼ percent per week.**

When the delay is not a full week or in multiple of a week but involves a fraction of a week the compensation payable for that fraction shall be proportional to the number of days involved. Provided always that the total amount of compensation for delay to be paid this condition shall not exceed the undernoted percentage of the Contract Value of the item or group of items of work for which a separate period of completion is given.

- i) Completion period (as originally stipulated or as extended) not exceeding 6 months: **10 percent.**
- ii) Completion period (as originally stipulated or as extended) exceeding 6 months and not exceeding 2 years : **7½ percent.**

iii) Completion period (as originally stipulated or as extended) exceeding 2 years : **5 percent.**

The amount of compensation may be adjusted set off against any sum payable to the Bidder under this or any other contract with the Municipal Corporation.

#### **85. Action And Compensation Payable In Case Of Bad Work And Not Done As Per Specifications**

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-in-charge, his authorized subordinates in charge of the work and all the superior officers, officer of the Vigilance Department of the BMC or any organization engaged by the BMC for Quality Assurance and the Bidder shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the Bidder, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Bidder's agent shall be considered to have the same force as if they had been given to the Bidder himself.

If it shall appear to the Engineer-in-charge or his authorized subordinates in-charge of the work or to the officer of Vigilance Department, that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of any inferior description, or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the Bidder shall, on demand in writing which shall be made within twelve months of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in-Charge in his demand aforesaid, then the Bidder shall be liable to pay compensation at the same rate as under clause 8.e. of the general condition of contract in section 9 of tender document (for Compensation for delay) for this default. In such case the Engineer-in Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the Engineer in charge may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the Bidder. Decision of the Engineer-in-Charge to be conveyed in writing in respect of the same will be final and binding on the Bidder.

If the penalization amount exceeds maximum limit with respect to Clause 8.e of Standard General Conditions of Contract, then a show cause notice shall necessarily be issued to the contract as to why the contract should not be terminated.

**86. Bidders remain liable to pay compensation:**

In any case in which any of the powers conferred upon the Engineer In-charge by the **relevant clauses** in documents that form a part of contract as exercised or is exercisable in the event of any future case of default by the Bidder, he is declared liable to pay compensation amounting to the whole of his security deposit. The liability of the Bidder for past and future compensation shall remain unaffected.

In the event of the Executive Engineer taking action against these **relevant clauses**, he may, if he so desires, take possession of all or any tools and plant, materials and stores in or upon the work of site thereof or belonging to the Bidder or procured by him and intended to be used for the execution of the work or any part thereof paying or allowing for the same in account at the contract rates, or in the case of contract rates not being applicable at current market rates to be certified by the Executive Engineer, may after giving notice in writing to the Bidder or his staff of the work or other authorized agent require him to remove such tools and plants, materials or stores from the premises within a time to be specified in such notice and in the event of the Bidder failing to comply with any such requisition, the Executive Engineer may remove them at the Bidders expense or sell them by auction or private sell on account of the Bidder at his risk in all respects and certificate of the Executive Engineer as to the expense of any such removal and the amount of the proceeds an expense of any such sell be final and conclusive against the Bidder.

**87. No Claim To Any Payment Or Compensation Or Alteration In Or Restriction Of Work**

(a) If at any time after the execution of contract documents, the Engineer shall for any reason whatsoever, desires that the whole or any part of the works specified in the Tender should be suspended for any period or that the whole or part of the work should not be carried out, at all, he shall give to the Bidder a Notice in writing of such desire and upon the receipt of such notice, the Bidder shall forthwith suspend or stop the work wholly or in part as required after having due regard to the appropriate stage at which the work should be stopped or suspended so as not to cause any damage or injury the work already done or endanger the safety thereof, provided that the decision of the Engineer as to the stage at which the work or any part of it could be or could have been safely stopped or suspended shall be final and conclusive against the Bidder.

The Bidder shall have no claim to any payment or compensation whatsoever by reason of or in pursuance of any notice as aforesaid, on account of any suspension, stoppage or curtailment except to the extent specified hereinafter.

(b) Where the total suspension of Work Order as aforesaid continued for a continuous period exceeding 90 days the Bidder shall be at liberty to withdraw from the contractual obligations under the contract so far as it pertains to the unexecuted part of the work by giving 10 days prior notice in writing to the Engineer within 30 days of the expiry of the said period of 90 days, of such intention and requiring the Engineering to record the final measurement of the work already done and to pay final bill. Upon giving such Notice, the Bidder shall be deemed to have been discharged from his obligations to complete the remaining unexecuted work under his contract. On receipt of such notice the Engineer shall proceed to complete the measurement and

make such payment as may be finally due to the Bidder within a period of 90 days from the receipt of such Notice in respect of the work already done by the Bidder.

Such payment

shall not in any manner prejudice the right of the Bidder to any further compensation under the remaining provisions of this clause.

(c) Where the Engineer required to Bidder to suspend the work for a period in excess of 30 days at any time or 60 days in the aggregate, the Bidder shall be entitled to apply to the Engineer within 30 days of the resumption of the work after such suspension for payment of compensation to the extent of pecuniary loss suffered by him in respect of working machinery remained ideal on the site of on the account of his having an to pay the salary of wages and labour engaged by him during the said period of suspension provided always that the Bidder shall not be entitled to any claim in respect of any such working machinery, salary or wages for the first 30 days whether consecutive or in the aggregate or such suspension or in respect of any such suspension whatsoever occasion by unsatisfactory work or any other default on his part, the decision of the Engineer in this regard shall be final and conclusive against the Bidder.

**88. Bidder to supply plant, ladder, scaffolding, etc. and is liable for damages arising from non provision of lights, fencing, etc.**

The Bidder shall supply at his own cost all material, plant, tools, appliances, implements, ladders, cordage, tackle scaffolding and temporary works requisite or proper for the proper execution of the work, whether, in the original altered or substituted form and whether included in the specification of other documents forming part of the contract or referred to in these conditions or not and which may be necessary for the purpose of satisfying or complying with the requirements of the Eng-In-Charge as to any matter as to which under these conditions is entitled to be satisfied, or which is entitled to require together with the carriage therefore to and from the work.

The Bidder shall also supply without charge, the requisite number of person with the means and materials necessary for the purpose of setting out works and counting, weighing and assisting in the measurements of examination at any time and from time to time of the work or materials, failing which the same may be provided by the Engineer In-charge at the expense of the Bidder and the expenses may be deducted from any money due to the Bidder under the contract or from his security deposit or the proceeds of sale thereof, or offers sufficient portion thereof.

The Bidder shall provide all necessary fencing and lights required to protect the public from accident and shall also be bound to bear the expenses of defence of every suit, action or other legal proceedings, that may be brought by any person for injury sustained owing to neglect of the above precautions and to pay any damages and cost which may be awarded in any such suit action or proceedings to any such person or which may with the consent of the Bidder be paid for compromising any claim by any such person.

**89. Prevention of Fire :**

The Bidder shall not set fire to any standing jungle, trees, brushwood or grass without a written permit from the Engineer In-charge. When such permit is given, and also in all cases when destroying cut or dug up trees brushwood, grass, etc., by fire, the Bidder shall take necessary measure to prevent such fire spreading to or otherwise damaging surrounding property. The Bidder shall make his own arrangements for

drinking water for the labour employed by him.

**90.** Compensation for all damages done intentionally or unintentionally by Bidder's labour whether in or beyond the limits of BMC property including any damage caused by spreading the fire shall be estimated by the Engineer In-charge or such other officer as he may appoint and the estimate of the Engineer in-charge to the decision of the Dy. H.E. (Maint.) on appeal shall be final and the Bidder shall be bound to pay the amount of the assessed compensation on demand failing which the same will be recovered from the Bidder as damages or deducted by the Engineer In-charge from any sums that may be due or become due from BMC to Bidder under this Contract or otherwise. Bidder shall bear the expenses of defending any action or other legal proceedings that may be brought to prevent the spread of fire and he shall pay any damages and costs that may be awarded by the Court in consequence.

**91.** In the case of Tender by partners, any change in the constitution of the firm shall be forthwith, notified by the Bidder through the Engineer In-charge for his information.

**92. Action where no specifications:**

In the case of any class of work for which there is no such specifications, such works shall be carried out in accordance with the specifications and in the event of there being no such specifications, then in such case, the work shall be carried out in all respects in accordance with all instructions and requirements of the Engineer In-charge.

**93. Safety and medical help :**

(i) The Bidder shall be responsible for and shall pay the expenses of providing medical help to any workmen who may suffer a bodily injury as a result of an accident. If such expenses are incurred by BMC, the same shall be recoverable from the Bidder forthwith and be included without prejudice to any other remedy of BMC from any amount due or that may become due to the Bidder.

(ii) The Bidder shall provide necessary personal safety equipment and first-aid box for the use of persons employed on the site and shall maintain the same in condition suitable for immediate use at any time.

(iii) The workers shall be required to use the safety equipment so provided by the Bidder and the Bidder shall take adequate steps to ensure the proper use of equipment by those concerned.

(iv) When the work is carried on in proximity to any place where there is risk or drawing all necessary equipment shall be provided and kept ready for use and all necessary steps shall be taken for the prompt rescue of any person in danger.

**94.** No compensation shall be allowed for any delay caused in the starting of the work on account of acquisition of land or in the case of clearance of works, on account of any delay in according to sanction of estimates.

**95. Anti-malaria and other health measures:**

Anti-Malaria and other health measures shall be taken as directed by the Executive Health Officer of BMC. Bidder shall see that mosquito-genic conditions are created so as to keep vector population to minimum level. Bidder shall carry out anti-malaria measures in the area as per the guidelines issued by the Executive Health Officer of BMC from time to time.

In case of default, in carrying out prescribed anti-malaria measures resulting in increase in malaria incidence, Bidder shall be liable to pay BMC on anti-malaria measures to control the situation in addition to fine



**SECTION 9**  
**SPECIFICATIONS /**  
**COMPLIACES**  
**&**  
**SCOPE OF WORK**

**BRIHANMUMBAI MAHANAGARPALIKA**  
(HYDRAULIC ENGINEER'S DEPARTMENT)

**Sub: Supply, Installation, Testing and Commissioning of CCTV Surveillance  
System at BHR, MHR, Mahaveer Nagar & Liberty Garden Tunnel und  
AEWW(M)WS/North division**

**SCOPE OF WORK & TECHNICAL SPECIFICATIONS & COMPLIANCES**

The Hydraulic Engineer's Department of Municipal Corporation of Greater Mumbai supplies about 3800 M.L.D. of water daily to over 14 million citizens of Mumbai. The water is supplied to various localities directly from trunk mains or through reservoirs and tunnel stations. Pumping stations are installed at hilly areas where gravity supply is not possible.

The A.E.W.W.(M)W.S./North-II division carries out operation maintenance of various pumping station & reservoirs in 'P' & 'R' wards i.e. Western Suburbs / North. In addition to replacement & installation of new pumping stations where water supply is not fulfill is also carried out by this section.

The tender is invited to install CCTV surveillance system at Malad Hill Reservoir located at Pimpri pada Malad(East), Borivali Hill Reservoir located at National Park Borivali (East), Liberty garden tunnel station at Liberty garden Malad(West) & Mahaveer Nagar Tunnel Station located Mahaveer Nagar Kandivali (Weat).

## TECHNICAL SPECIFICATIONS

<b>Full HD Outdoor IR Positioning Camera</b>		
<b>Sr. No.</b>	<b>Feature</b>	<b>Specifications</b>
1	Image Sensor	1/1.9" Progressive Scan CMOS, ,MIL-STD-810G or better with 400 IR Range
2	Operating Frequency	50 Hz
3	Day/ Night Operation	Automatic with IR Cut Filter
4	Minimum Illumination	Colour: 0.07 Lux @ 30 IRE ,B/W": 0.01 @ 30 IRE at F1.6 or better
5	high-speed pan-tilt functionality	360° endless pan range and a Tilt: -90° to +90°
6	Optical Zoom	30x Minimum & 18x Digital Zoom or better
7	Lens	7-201 mm or Better
8	Pan, tilt, manual and preset speed The speed shall be applicable for Manual, Tour and Preset Mode	0.05°/s to 150°/s
9	Image Resolution	1920 x 1080 or better
10	Compression	H.264 / H.265 Main, High and Baseline Profiles Motion JPEG
11	Frame Rate and Bit Rate	25/50 FPS at all resolutions with Controllable Bit Rate / Bandwidth and Frame Rate
12	Video Streams	Minimum 4 Streams @ 1920x1080, H264/ H265 , 25 fps or better
13	Motion Detection	Yes built in with multiple configurable areas in the video Stream
14	Electronic Shutter	1/30000 s to 1/6s or better
15	Electronic Exposure & Control	Automatic/ Manual
16	Wide Dyanamic Range	110 dB or better
17	Electronic Image Stabilization	Required
18	Image Freeze on PTZ	Required
19	Preset Positions	Minimum 256 or better
20	Event Triggers	Analytics, edge storage events, virtual inputs through API Detectors: day/night mode, live stream accessed, shock detection Hardware: fan, network, temperature Input Signal: virtual inputs, manual trigger PTZ: autotracking, error, moving, preset reached, ready Storage: disruption, recording System: system ready Time: use schedule

21	Event Actions	Record video: SD card and network share Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email Pre- and post-alarm video or image buffering for recording or upload Notification: email, HTTP, HTTPS, and TCP PTZ: PTZpreset, start/stop Alerts tour, autotracking Overlay text, day/night mode
22	Pixel Counter	Built in
23	Firmware Upgrade	The firmware upgrade shall be done though web interface, The firmware / upgrade shall be available free of cost
24	Interface	RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE
25	Enclosure	IP68-, NEMA 4X- and IK10-rated aluminum casing Wiper included
26	Memory	1GB RAM, 512 MB Flash or better, The camera shall have inhouse processor for better performance and support for 3rd Party analytics
27	Certification	UL, CE, FCC Part 15 Subpart B Class A, NIST SP500- 267, IEC 60068-2-6, VCCI Class A, RCM AS/NZS CISPR32 Class A, MIL-STD-810G, NEMA TS 2, IEC/EN62262 IK10,
28	Embedded Applications	Video Motion Detection, Fence Alerts, Motion Alerts, Loitering Alerts , Anti Theft and The camera shall provide a platform allowing the upload of third party applications into the camera
29	MAC compliant	The MAC Addresses of all the camera supplied should be from OEM, not from for ODM Manufacturers
30	Protocol	The camera shall have Built in IPv4, IPv6, USGv6, HTTP, HTTPS, SSL/TLS, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP, SNMP v1/v2c/v3, (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, SRTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, SIP, LLDP, MQTT The Camera to be provided by the bidder all the components / parts / assembly / software used in the offered hardware and software, should not be complying to GB28181, GB/T 28181-2011; GB/T28181-2011; GBT28181-2011; GBT28181-2011 standards. There should be no option to activate or deactivate these standards in the camera web page/Settings.
31	Application Programmers Interface	The interface shall be available for integration with 3rd party analytics and applications in public domain free of cost
32	Onvif S, G	Required
33	Warranty	3 Years OEM warranty

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### Out Door UHD Bullet Camera

SN.	Features	Specifications
1	Image Sensor	Progressive scan RGB CMOS 1/2.5" or better
2	Image Resolution	8 MP or better with 25 Meter IR Range
3	Minimum Illumination	Color: 0.20 lux @ 50 IRE B/W: 0.05 lux @ 50 IRE
4	IR Illumination	Built in Or External Optimized IR with 25 meter range, 850nm, with adjustable angle and intensity or better
5	Lens	3–9 mm, F1.6, Remote focus and zoom, P-Iris control, IR corrected
6	Field of View	109°–37° or better
7	Electronic Shutter	1/60000 s to 2 s or better
8	Standard	Forensic WDR, Lightfinder, Optimized IR. Zipstream
9	Resolution	3840 x 2160 or Better
10	Compression	H.264 in Baseline, Main and High Profile MPEG4, MJPEG
11	Frame Rate and Bit Rate	Upto 25 FPS at all resolutions with Controllable Bit Rate/ Bandwidth and Frame Rate
12	Image reproduction	Compression, Color, Brightness, Sharpness, Contrast, Localcontrast, White balance, Exposure control
13	Multi View Streams	Minimum 8 individually cropped out view areas
14	Video Streams	Motion JPEG with Controllable frame rate and bandwidth VBR/CBR
15	Video Compression	H.264 or better
16	Intelligent Motion Detection	Yes, built in with multiple detection scenarios with separate include area, exclude areas, and filters, with multiple include areas. The motion detection shall allow One include area and 3 exclude areas and Filtering for swaying objects, short-lived objects and small objects or better ,Digital Auto tracking The camera should have built-in Automatic object detection and tracking. The camera should automatically detect, digitally zoom in on and follow moving objects such as people or vehicles in its field of view
17	Pan Tilt Zoom	Digital PTZ, Presets
18	Exposure & Control	Automatic/ Manual
19	Wide Dynamic Range	Forensic Wide Dynamic range
20	Protocol	The camera shall have Built in IPv4, IPv6 USGv6, HTTP, HTTPSa,, SSL/TLSa,QoS Layer 3 DiffServ,FTP, SFTP, CIFS/SMB, SMTP, SOCKS, SSH, SIP, LLDP, MQTT  The Camera to be provided by the Bidder all the components /

21	Event Triggers	parts / assembly / software used in the offered hardware and software, should not be complying to GB28181, GB/T 28181-2011; GB/T28181-2011; GBT 28181-2011; GBT28181-2011 standards. There should be no option to activate or deactivate these standards in the camera web page/Settings. Analytics Detectors: live stream accessed, video motion detection, audio detection, day/night mode, shock detection, tampering
22	Event Actions	Hardware: network, temperature Input Signal: digital input port, manual trigger, virtual inputs Storage: disruption, recording System: system ready Time: recurrence, use schedule, Record video: SD card and network share Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email, Pre- and post-alarm video or image buffering for recording or upload Notification: email, HTTP, HTTPS, TCP and SNMP trap
23	Edge Storage	PTZ: PTZ preset, start/stop guard tour, Overlay text, external output activation, day/night mode Built in SD card slot with support upto 128 GB with Class 10 speed and Support for SD card encryption
24	Storage	The Camers shall have the feature to directly record the videos/ images onto Nas without any Software
25	Security	Password protection, IP address filtering, HTTPSa encryption, IEEE 802.1X, network access control, digest authentication, user access log, centralized certificate management, brute force delay, protection, signed firmware
26	Firmware Upgrade	The firware upgrade shall be done though web interface, The firmware shall be available free of cost
27	Memory	1GB RAM, 512 MB Flash or better with Inhouse Processor
28	Interface	RJ 45, 100 Base TX
29	Casing	IP66 , NEMA 4X-, and IK10-rated casing, PVC free
30	Certification	UL, CE, FCC Part 15 Subpart B Class A, VCCI Class A, EMC
31	Embedded	Motion Detection, Tampering, Loitering, Advance
32	Applications	Motion detection, virtual trip-wire. The camera shall provide a platform allowing the upload of third party applications into the camera
33	Mount	Wall Mount / Pole Mount
34	Active alerts on	The camera should send trigger via HTTP/HTTPS to
35	Speaker	IP Speaker for active alerts.
35	Onvif S, G	Required
36	Warranty	3 Years Warranty

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### Full HD IR Indoor Dome Camera

SN	Featu re	Specificatio ns
1	Image Sensor	1/3" progressive scan RGB CMOS or better with 20 meter IR Range
2	Operating Frequency	50 Hz
3	Day/ Night Operation	Yes with Bultin IR Cut Filter
4	Minimum Illumination	Color : 0.19 lux @ 50 IRE ,B/W: 0.04 lux @ 50 IRE
5	IR Illumination	Built in Or External Optimized IR with 20 meter range, 850 Nm
6	Lens	2.8 mm, F2.0
7	Field of View	Horizontal field of view: 105° or better
8	Electronic Shutter	1/30000 s to 1/5 s or better
9	Image Resolution	1920x1080 or better
10	Compression	H.264 / H.265 Baseline, Main and High Profiles, Main Profile ,Motion JPEG
11	Frame Rate and Bit Rate	Upto 25 FPS at all resolutions with Controllabe Bit /Bandwidth & Frame Rate
12	Multi View Streams	Up to 2 individually cropped out view areas
13	Video Streams	Minimum 4 Streams @H.264 / H.265, 2MP, 25 fps
14	Intelligent Analytics	The Camera shall be able to Include or Exclude any area of any size/ dimension within the scene in order to Eliminate False alarm and also optimize the bandwidth and storage
15	Digital Auto tracking	The camera shall have Built in Capability to digitally track themovements or Using Video Analytics
16	Pan Tilt Zoom	Digital PTZ
17	Wide Dynamic Range	Minimum 118 Db
18	Protocols	The camera shall have Built in IPv4, IPv6 USGv6, HTTP, HTTPSa,, SSL/TLSa,QoS Layer 3 DiffServ, IGMP,RTCP, ICMP, DHCP, ARP, SOCKS, SSH, SIP, LLDP, The Camera to be provided by the Bidder all the components / parts / assembly / software used in the offeredhardware and software, should not be complying to GB28181, GB/T 28181-2011; GB/T28181-2011; GBT28181-2011; GBT28181-2011 standards. There should be no option to activate or deactivate these standards in the camera web page/Settings.
19	Security	Password protection, IP address filtering, HTTPSa encryption,,IEEE 802.1x (EAP-TLS) network access control, Digest authentication, User access log, centralized Certificate ,Management, brute force delay protection, signedirmware,secure boot

20	Firmware Upgrade	The firmware upgrade shall be done through web interface. The firmware shall be available free of cost
21	Memory	512 MB RAM, 512 MB Flash
22	Interface	RJ 45, 100 Base TX
23	Enclosure	IP66, NEMA 250 Type 4X, and IK08-rated
24	Power requirements	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 Max.: 9 W
25	Operating Temperature	-30°C to 50°C
26	Operating Humidity	Humidity 10–100% RH (condensing)
27	Certification	UL, CE, FCC, IEC, IEC 60068-2-6, IEC 60068-2-27, NIST SP500-267, RCM AS/NZS CISPR 32 Class A IEC/EN 62262 IK08, IEC/EN 60529 IP66, NEMA 250 Type 4X
28	Analytics	Motion Detection, Tampering, Loitering, Advance motion detection, The camera shall provide a platform allowing the upload of third party applications into the camera
29	Support of 3rd party Analytics	The camera should support 3rd party edge based analytics
30	Mount	Wall / Ceiling / Surface
31	Active alerts on 3rd party devices	The camera should send trigger via HTTP/HTTPS for alerts for any compatible IoT devices.
32	Onvif S, G	Required
33	Warranty	3 Years OEM warranty

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### Specifications of Surge Protector

Sr.	Feature	Specifications
1	Casing	Weatherproof metal enclosure
2	Weight	300 g or better
3	Mounting option	Wall Pole (requires straps or similar)
4	Connectors	RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE
5	Power	minimum Surge Handling Capability: 10 kV, 5 kA to ground in 8/20 $\mu$ s 800 V, 100 A PoE Input Power: 95 W (max)Input Current: 2 A (max)
6	Operating conditions	-.40 °C to 85 °C -.40 °F to 185 °F
7	Humidity	Humidity 0 to 100 % (condensing)
8	Approvals	IEC 60529 IP66 ,NEMA 250 Type 4XUL 497B EN 50581 REACH WEEE GR1089 IEC 61643–21 ITU-T K.45
9	Warranty	3 -year warranty

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## Recording Server

SN	Feature	Specifications
1	No. of Cameras Supported	64 Ch cameras or more is preferable
2	Processor	1 - Intel Xeon Silver 4210R 2.4G, 10C/20T, 9.6GT/s, 13.75MCache, Turbo, HT (100W) DDR4-2400,
3	Mother Board On board Accessories	MLK Motherboard, V2 PERC H750 Adapter, Low Profile, Performance BIOS Settings , 2-Jumper Cord - C13/C14, 2M, 250V, 10A (India BIS), Trusted Platform Module 2.0, Dual-Port 1GbE On-Board LOM.,iDRAC Group Manager, Enabled , 1 - iDRAC9,Enterprise, 3.5"Chas up 12 HP HDs 2x3.5" Rear Drives, 1PERC/HBA11,1 - 1xFH, 1 or 2CPU , 1 CPU Standard Thermal for 3.5" Chassis , No Internal Optical Drive, 3200MT/s RDIMMs, Dual, Hot-Plug, Redundant Power Supply (1+1), 750W.
4	RAM	2X16GB RDIMM, 3200MT/s, Dual Rank.
5	Storage	12TB X10 Nos, 7.2K RPM SATA 6Gbps 512e 3.5in Hot-plug Hard Drive, 2 - 480GB SSD SATA Read Intensive 6Gbps 512 2.5in Flex Bay AG Drive,3.5in HYB CARR, 1 DWPD, RAID levels: 0, 1, 5, 6, 10
6	Operating Systems	1- Windows Server 2019 Standard,16CORE,Digitally Fulfilled Recovery Image, 1 Multi Language Software, iDRAC,Factory Generated Password , 1 Windows Server 2019 Standard,16CORE,FI,No Med, No CAL, Multi Language, 1 Windows Server 2019 Standard,16CORE,Media Kit, Multi Language , 1 - Windows Server 2019 Standard,No Media, WS2016 Std Downgrade w/DVD Media,Multi Lang, 1- UEFI BIOS Boot Mode with GPT Partition , 1 - OpenManage EnterpriseAdvanced
7	Network Card	2x RJ45 Ports
8	Recording	Shall support recording 64 or more video channels with a total recording rate up to 512 Mbit per second or better
9	Software	Compatible with Cameras, Encoders including HD, Standard resolution, High Resolution, Pant Tilt, Zoom, Thermal, Cameras, Access Control, IP Speakers, Alarm IO Modules
10	Video compression	H.264 (MPEG-4 Part 10/AVC), Motion JPEG or better
11	Map function	Map functions create a map ping between input data and out putdata displayed in the view results/ on Screen
12	PTZ Control	Pan Till & Zoom controll must be control through recording server
13	Playback	Up to 64x or frame by frame Up to 16 or more cameras synchronized playback
14	Export	Manual and scheduled export, Single images in JPEG format, Video in ASF format, Digital signature on exported recordings, Standalone player

15	Scheduled recording	+The software shall allow recordings for continuous, motion based, event based, or customized as per user / scheduled
16	Microsoft Active Directory support	Yes, multiple user access levels with password protection using local or Windows domain users (Active directory)
17	Alarm Manager &Event triggers	Events triggered by video motion detection, Active Tampering Alarm, Cross Line Detection, External I/O, Action button, System triggers and device event triggers, Manual Triggers, Edge Based Analytic Triggers
18	Power	750 W (100-240 V AC, 10 - 5 A, 50/60 Hz)
19	Connectors	2x USB 3.1,1x USB 3.1 Type-C,2x USB 2.0,x VGA,1x Serial port
20	Operating conditions	10 °C to 35 °C (50 °F to 95 °F)
21	Video Recording Software Upgradation	The Manufacturer shall support free upgrades for Software and firmware
22	Certification	EN/IEC/UL 60950-1, FCC part 15 class A, VCCI class A, RCM AS/NZS CISPR 32 Class A, EN 55032, class A, ICES-003/NMB-003 Class A, KC KN32 Class A, KN-35, EN 55024, EN/IEC 61000-3-2, EN/IEC 61000-3-3, NOM, BSMI, EAC'
23	Warranty	3 Years OEM warranty

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## 16 Channel Network Video Recorder

SN	Feature	Specifications
1	No. of Cameras Supported	16 Ch cameras or more is preferable
2	Processor	Intel Core i5
3	RAM	8 GB
4	Storage	8 TB Raid 0,1
5	Operating Systems	Microsoft windows 10 Enterprises
6	Network Card	1x RJ45 Ports
7	Recording	Shall support recording 16 or more video channels with a total recording rate up to 512 Mbit per second or better
8	Software	Compatible with Cameras, Encoders including HD, Standard resolution, High Resolution, Pan Tilt, Zoom, Thermal, Cameras, Access Control, IP Speakers, Alarm IO Modules
9	Video compression	H.264 (MPEG-4 Part 10/AVC), Motion JPEG or better
10	Map function	Map functions create a map ping between input data and output data displayed in the view results/ on Screen
11	PTZ Control	Pan, Tilt & Zoom of cameras must be controlled through recording server.
12	Playback	Up to 64x or frame by frame Up to 16 or more cameras synchronized playback
13	Export	Manual and scheduled export, Single images in JPEG format, Video in ASF format, Digital signature on exported recordings, Standalone player
14	Scheduled recording	The software shall allow recordings for continuous, motion based, event based, or customized as per user / scheduled
15	Microsoft Active Directory support	Yes, multiple user access levels with password protection using local or Windows domain users (Active directory)
16	Alarm Manager & Event triggers	Events triggered by video motion detection, Active Tampering Alarm, Cross Line Detection, External I/O, Action button, System triggers and device event triggers, Manual Triggers, Edge Based Analytic Triggers
17	Power	750 W
18	Connectors	1x USB 3.1, 1x USB 3.1 Type-C, 2x USB 2.0, x VGA, 1x Serial port
19	Operating conditions	10 °C to 35 °C (50 °F to 95 °F)
20	Video Recording Software Upgradation	The Manufacturer shall support free upgrades for Software and firmware
21	Certification	EN/IEC/UL 60950-1, FCC part 15 class A, VCCI class A, RCM AS/NZS CISPR 32 Class A, EN 55032, class A, ICES-003/NMB-003 Class A, KC KN32 Class A, KN-35, EN 55024, EN/IEC 61000-3-2, EN/IEC 61000-3-3, NOM, BSMI, EAC'
22	Warranty	3 Years OEM warranty

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## Radar With Accessories

SN.	Fea ture	Specifications
1	Sensor	Phased array FMCW (Frequency Modulated Continuous Wave)
2	Object data	Range, direction, velocity, object type
3	Frequency	24.05–24.25 GHz
4	RF transmit power	<100 mW (EIRP) License free. Unharmful radio-waves.
5	Recommended mounting height	3.5 m (11 ft)
6	Detection range	e 3–60 m (10–200 ft) when detecting a person 3–85 m (10–280 ft) when detecting a vehicle
7	Radial speed	Up to 55 km/h (34 mph)
8	Field of detection	Horizontal: 180
9	Distance accuracy	0.7 m (2.3 ft)
10	Angle accuracy	1°
11	Spatial differentiation	3 mb
12	Data refresh rate 1	10 Hz
13	Coverage	5600 m <sup>2</sup> (61000 sq ft) for persons 11300 m <sup>2</sup> (122000 sq ft) for vehicles
14	Object classification	Humans, vehicles, unknown
15	Radar controls	Multiple detection zones, crossline detections, and exclude zones with filters for short-lived objects, object speed, and object type. Radar transmission on/off, coexistence, reference map with rotation and cropping, grid opacity, zone opacity, color scheme, trail lifetime, detection sensitivity, swaying object filter
18	Mode	ARTPEC-7
19	Memory	1024 MB RAM, 512 MB Flash
21	Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles H.265 (MPEG-H Part 2/HEVC) Main Profile Motion PEG
22	Resolution	1920x1080 HDTV 1080p to 640x360
23	Frame rate	Up to 10 fps in all resolutions
24	Video streaming	Multiple, individually configurable streams in H.264, H.265 and Motion JPEG Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265
25	Image settings	Compression, rotation: 0°, 90°, 180°, 270° including corridor format, dynamic text and image overlay
27	Audio streaming	Audio output via edge-to-edge technology
28	Security	Password protection, IP address filtering, HTTPS encryption, IEEE 802.1X (EAP-TLS) network access control, digest authentication, user access log, centralized certificate management, brute force delay protection, signed firmware

29	Supported protocols	IPv4/v6, ICMPv4/ICMPv6, HTTP, HTTP/2, HTTPSc , TLSsc , QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS Bonjour), UPnPDM, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, RTSP, RTP, TCP,UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, SOCKS, SSH, LLDP, CDP, MQTT v3.1.1, Syslog, Link-Local address (ZeroConf)
30	Casing	IP66-, NEMA 4X- and IK08-rated Aluminum and plastic casing Color: White NCS S 1002-B
31	Sustainability	PVC free
32	Power	Power over Ethernet (PoE) IEEE 802.3at, Type 2 Class 4, typical 11 W, max 15 W Power over Ethernet (PoE) IEEE 802.3bt, Type 3 Class 5 or Axis Midspan 60 W required for PoE Out 8–28 V DC, typical 10 W, max 15 W
33	Connectors	DC input RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE output to power an external PoE device Relay: 2-pin terminal block I/O: 6-pin 2.5 mm terminal block for four configurable inputs/outputs
34	Relays	1x 1 form A, 1 NO, max 5A, 24 V DCExpected lifetime 25,000 operations
35	Storage	Support for microSD/microSDHC/microSDXC card Support for SD card encryption (AES-XTS-Plain64 256bit) Recording to network-attached storage (NAS) For SD card and NAS recommendations see axis.com
36	Operating conditions	40 °C to 60 °C (-40 °F to 140 °F) Humidity 10–100% RH (condensing)
37	Storage conditions	40 °C to 65 °C (-40 °F to 149 °F)
38	Approvals	Radio EN 300440, EN 301489-1, EN 301489-51, EN 62311, FCC Part 15 Subpart C EMC EN 55032 Class A, EN 55024, EN 61000-6-1, EN 61000-6-2,EN 61000-6-4, FCC Part 15 Subpart B Class A,ICES-3(A)/NMB-3(A), KC KN32 Class A, RCM AS/NZS CISPR 32 Class A, VCCI Class B, EAC Safety
39	Included accessories	Installation guide, connector kit, pipe adapters, cable gland, cable gaskets, Windows® decoder 1-user license
40	Warranty	5-year warranty

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### SIP Mic With Accessories

Sn.	Feature	Specifications
1	Supported zones.	Server-less paging to up to 12 zones
2	Audio Stream	SIP2.0, RTP multicast
3	Audio codecs	G.711u, G.722
4	Speakers	2 built-in, stereo, power output 2x1 W
5	Pre-recorded announcements	Upload or record a message via the microphone and then play it by simple push of a button to a designated zone.
6	IP PBX (SIP)	Support device may function independently or be simply connected to IP PBX
7	Power	12 to 32 V, power draw max. 1 A PoE to 802.3af standard
8	Logical inputs	2, galvanically separated, sensitive to contact or voltage from 5 to 48 V
9	Relay output	1, galvanically isolated, NO and NC contact, max load 48 V, 1 A
10	Headphone output	3.5 mm jack, stereo, power output 2x30 mW, min. load impedance of 16 Ohm, DR. 101 dB, THD+N -85 dB
11	Primary microphone input	symmetric, XLR, integrated phantom power supply 24 V, DR 88 dB, THD+N -82 dB
12	Headset microphone input	3.5 mm jack, integrated power, supply for electret microphones, DR 84 dB, THD+N -78 dB
13	Line input	3.5 mm jack, mono or stereo non-symmetric stereo, DR 93 dB, THD+N -82 dB
14	Operating temperature	0-40°C
15	Connectors	RJ45 10BASE-T/100BASE-TX PoE
16	Other	Inbuilt software to manage 12 zone of IP speaker

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## Video Management Software

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>
1	Licensing	upto 48 channel supported
2	Number of connected devices per system	8 or more
3	Number of supported recording servers	2 or more
4	Maximum numbers of users	2 or more
5	Multiple video export formats	Yes
6	Supports Smart Client, Web Client and Mobile software	Yes
7	Alarm Manager	Yes
8	Third-party support for video analytics	Yes
9	Failover Recording Servers	Yes
10	Recording Server manager	Yes
11	Support for ONVIF™ compliant devices	Yes
12	Support for PSIA compliant devices	Yes
13	Number of IP device brands supported device I	10 or more
14	Built-in Video Motion Detection (VMD)	Yes
15	Video motion detections per server	All connected Cameras
16	Hardware configurable events (such as I/O input, motion, tampering, temperature, communication)	Yes
17	System error events (for example disk full)	Yes
18	Manual / User defined events	Yes
19	Generic events from external systems	Yes
20	Event-based device start/stop	Yes
21	Alarm description and work instructions	Yes
22	Manage alarms (reassign, change status, comment)	Yes
23	Push alarms to users of Milestone Mobile(7)	Yes
24	Recording capacity per device/day	Less than 1TB/ Unlimited
25	Automatic initial configuration wizard	No
26	Device scanning with device model detection	Yes
27	Device replacement wizard	Yes
28	Offline license activation	Yes
29	Playback mode	Multi-Camera
30	Recording search	Yes
31	Time/date search	Yes
32	Event/alert list in recording	Yes
33	Adjust playback speed	Yes
34	Digital zoom	Yes

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<b>65" 4K Display Monitor</b>		
<b>SN.</b>	<b>Feature</b>	<b>Specifications</b>
1	Stand Type	2 Pole (No-Stand available)
2	Front Color	Ceramic Black
3	Display Size	65"
4	Display Resolution	3,840 X 2,160 (UHD)
5	Brightness (cd/m2 )	400
6	TV Reception	NTSC / ATSC / Clear QA
7	Video HDR (10 Pro / HLG)	Yes / Yes
8	Audio Output	10W+10W
9	Speaker System	2.0 ch
10	SUPERSIGN SW COMPABILITY	Content Management Software (SuperSign CMS), Control and Monitoring Software (Control/Control+), Simple Editor
11	SIGNAGE FEATURE	Crestron Connected® (Network Based Control), DPM (Digital Power Management), Time Scheduler, RTC (Real Time Clock), NTP sync timer, BEACON, Embedded CM (Contents Manager), Embedded GM (Group Manager)
12	SMART FEATURE	webOS 4.5, Smart Home (Launcher Bar), Web Browser, Pre-loaded App (YouTube only), Soft AP, Wi-Fi (802.11ac, Built-in type), Screen Share (Miracast), DIAL, Bluetooth Audio Playback, LG Sound Sync/bluetooth, Mobile Connection Overlay
13	HOSPITALITY FEATURE	Public Display Mode, Lock Mode (Limited), Welcome Screen (Splash Image), Insert Image, IP Channel Manager, External Speaker Out (Int/Fixed, 3.5mm, Stereo, Single ended Type (GND, L+, R+), 1W with 8Ω), V-Lan Tag, RJP (Remote Jack Pack) Compatibility (Teleadapt/Guestlink (HDMI CEC)), Moving Picture Playback (SD/HD/Plus HD), Auto Off/Sleep Timer, Smart Energy Saving, Motion Eye Care
14	MAINTENANCE FEATURE	USB Cloning, WOL, SNMP, Diagnostics (USB), Simplink (HDMI-CEC (1.4)), IR Out (RS-232C), Multi IR Code
15	Set Side	HDMI In 2 (2.0), USB (2.0)
16	Set Rear	HDMI In (HDCP (2.0)), RF In (tuner), AV In (Phone Jack Type), Digital Audio Out (Optical), RS-232C (D-Sub 9pin (Control & Service)), RJ45 (Usage Purpose 2 (Ethernet, SNMP)), External Speaker Out (3.5mm phone jack (Spk-out fixed 0.01~1.00W and line out)), Debug (Phone Jack Type)
17	Voltage, Hz	AC 120V-230/ ~ 50/60 Hz
18	Power Consumption	180.3 W
19	Stand-by	Under 0.5 W

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<b>43" 4K Display Monitor</b>		
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>
1	Stand Type	2 Pole (No-Stand available)
2	Front Color	Ceramic Black
3	Display Size	43"
4	Display Resolution	3,840 X 2,160 (UHD)
5	Brightness (cd/m2 )	300
6	TV Reception	NTSC / ATSC / Clear QA
7	Video HDR (10 Pro / HLG	Yes / Yes
8	Audio Output	10W+10W
9	Speaker System	2.0 ch
10	SUPERSIGN SW COMPABILITY	Content Management Software (SuperSign CMS), Control and Monitoring Software (Control/Control+), Simple Editor
11	SIGNAGE FEATURE	Crestron Connected® (Network Based Control), DPM (Digital Power Management), Time Scheduler, RTC (Real Time Clock), NTP sync timer, BEACON, Embedded CM (Contents Manager), Embedded GM (Group Manager)
12	SMART FEATURE	webOS 4.5, Smart Home (Launcher Bar), Web Browser, Pre-loaded App (YouTube only), Soft AP, Wi-Fi (802.11ac, Built-in type), Screen Share (Miracast), DIAL, Bluetooth Audio Playback, LG Sound Sync/bluetooth, Mobile Connection Overlay
13	HOSPITALITY FEATURE	Public Display Mode, Lock Mode (Limited), Welcome Screen (Splash Image), Insert Image, IP Channel Manager, External Speaker Out (Int/Fixed, 3.5mm, Stereo, Single ended Type (GND, L+, R+), 1W with 8Ω), V-Lan Tag, RJP (Remote Jack Pack) Compatibility (Teleadapt/Guestlink (HDMI CEC)), Moving Picture Playback (SD/HD/Plus HD), Auto Off/Sleep Timer, Smart Energy Saving, Motion Eye Care
14	MAINTENANCE FEATURE	USB Cloning, WOL, SNMP, Diagnostics (USB), Simplink (HDMI-CEC (1.4)), IR Out (RS-232C),
15	JACK INTERFACE: Set Side	HDMI In 2 (2.0), USB (2.0)
16	JACK INTERFACE: Set Rear	HDMI In (HDCP (2.0)), RF In (tuner), AV In (Ethernet, SNMP)), External Speaker Out (3.5mm phone jack (Spk-out fixed 0.01~1.00W and line out)), Debug (Phone Jack Type
17	Voltage, Hz	AC 120V-230/ ~ 50/60 Hz
18	Power Consumption	99.1 W & under 0.5 W stand by

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### Work Station with Peripherals

SN	Feature	Specifications
1	Processor	11th Generation Intel® Core™ i7-10400 (12 MB cache, 6 cores, 12 threads, 2.90 GHz to 4.30 GHz Turbo)
2	RAM	8 GB, 1 x 8 GB, DDR4, 2666 MHz
3	Hard Drive	500GB SATA HDD & 480GB SSD , 7200 RPM, 3.5-inch, 64 MB cache
4	Graphics Crad	nVidia GTX 660 - 2 GB Graphics Card
5	Audio	Yes
6	Network Adapter	10/100/1000 Slot
7	Wireless	802.11ac 1x1 WiFi and Bluetooth
8	Power Cord( Systems)	System Power Cord India 6A
9	Chassis	EPA Chassis with TPM
10	Optical Software	Cyberlink Media Suite Essentials without Media
11	Serial Port/PS2 Adapter	No
12	Operating System	Windows 11 Pro for business license version
13	Microsoft Office	Ms 10 (Latest) or approved equivalent with free upgrades validity of contract including comprehensive AMC period
14	External Port	USB 4/8 port
15	Anti-Virus	Norton (Latest) or approved equivalent with free upgrades validity of contract including comprehensive AMC period
16	Hardware Support	Onsite repairs - Service after Remote Diagnosis*
17	Software	Single-source software & hardware expertise*
18	Mouse	Optical Mouse-MS116 – Black
19	Keyboard	Entry Keyboard KB216 Black (QWERTY)
<b>LED Monitor-22" Flat Screen for Workstation</b>		
20	Resolution	HD resolution of 1280X1024 pixel
21	Front Controls	Power On/Off with LED
23	Video Connectors	VGA/SXGA Audio Inputs PC Audio (mini jack) Video Audio (2 Channel RCA –looping)
24	Input	Composite Video / AV/VGA/HDMI/COMPONENT
25	Power Input	AC Input- 100 to 240 V – 0.5 A,50/60 Hz
26	Power Output	DC Output – 12VDC,0.5 A
27	Display Mode	DVI-I/SXGA/XGA/VGA
28	Display colors	16.7 Millions
29	Emmissions	FCC: Part 15, Class B
30	Immunity	CE: EN55022: 1998/A1:2000/A2:2003
31	Saftey	UL/Cul:6500,EN60950-1:2001
32	Warranty	3 Years

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### Industrial Grade 8 Port PoE Switch

SN	Feature	Specifications
1	Ports	8 x 10/100/1000 Mb/s Gigabit Ethernet (RJ45) PoE+ 2 x 10/100/1000 Mb/s Gigabit SFP
2	Protocols	IPv4, IPv6, Link Agrregation, Mac Filtering .
3	Queuing	Strict Priority, Weighted Round Robin (WRR)
4	Security Features	Attack Prevention, Radius Authentication, Storm Control
5	RFC	RFC 4330
6	Supported IEEE Standards	802.1ab, 802.1d, 802.1q/p, 802.1s, 802.1w, 802.1x, 802.3, 802.3ab, 802.3ad, 802.3af, 802.3an, 802.3at, 802.3az, 802.3u, 802.3x, 802.3z
7	Forwarding Rate	26.78 Mpps
8	Switching Bandwidth	36 Gb/s
9	Priority Queues	4
10	Packet Buffer	1.5 MB
11	Power Draw	150.1 W (Max)
12	AC Input Power	100 to 240 VAC, 50 / 60 Hz
13	PoE Power Budget	120 W
14	PoE per Port	30 W
15	Power Supply Type	Internal
16	Operating Temperature	23 to 122Å°F / -5 to 50Å°C
17	Operating Humidity	10 to 90%
18	Storage Temperature	-13 to 158Å°F / -25 to 70Å°C
19	Storage Humidity	10 to 90%
20	Noise Level	34.8 dB
21	Cooling System	Passive
22	Indicator Lights	Link/Activity, PoE, Speed, System
23	Rack Form Factor	1 RU
24	Warranty	3 Years

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### Industrial Grade 4 Port PoE Switch

SN	Feature	Specifications
1	Ports	4 x 10/100/1000 Mb/s Gigabit Ethernet (RJ45) PoE+ 2 x 10/100/1000 Mb/s Gigabit SFP
2	Protocols	IPv4, IPv6, Link Agrregation, Mac Filtering .
3	Queuing	Strict Priority, Weighted Round Robin (WRR)
4	Security Features	Attack Prevention, Radius Authentication, Storm Control
5	RFC	RFC 4330
6	Supported IEEE Standards	802.1ab, 802.1d, 802.1q/p, 802.1s, 802.1w, 802.1x, 802.3, 802.3ab, 802.3ad, 802.3af, 802.3an, 802.3at, 802.3az, 802.3u, 802.3x, 802.3z
7	Forwarding Rate	26.78 Mpps
8	Switching Bandwidth	36 Gb/s
9	Priority Queues	2
10	Packet Buffer	1.5 MB
11	Power Draw	150.1 W (Max)
12	AC Input Power	100 to 240 VAC, 50 / 60 Hz
13	PoE Power Budget	60 W
14	PoE per Port	30 W
15	Power Supply Type	Internal
16	Operating Temperature	23 to 122Å°F / -5 to 50Å°C
17	Operating Humidity	10 to 90%
18	Storage Temperature	-13 to 158Å°F / -25 to 70Å°C
19	Storage Humidity	10 to 90%
20	Noise Level	34.8 dB
21	Cooling System	Passive
22	Indicator Lights	Link/Activity, PoE, Speed, System
23	Rack Form Factor	1 RU
24	Warranty	3 Years

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### Industrial Grade Hi POE Injectors

Sr. No.	Feature	Specifications
1	Maximum power deliverable	PSE 60 Watts
2	Power available	PD 50 Watts
3	Voltage Rating	48V
4	Twisted pair Used	4-pair
5	Supported Modes	END-Span+ Mid Span
6	Supported Cabling	CAT 5E/6
7	Warranty	3 Years

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### 10 KVA UPS

SN	Feature	Specifications
1	PHASE	1 phase in / 1 phase out
2	CAPACITY	10000 VA
3	Nominal Voltage	230 Vac (1 Ph+ N)
4	Voltage Range	160 Vac-300 Vac (1-phase) @ 100% load
5	Frequency Range	46~54 Hz or 56~64Hz
6	Power Factor	≥ 0.99 @ 100% load
7	Output Voltage	208 **/220/230/240VAC
8	AC Voltage Regulation	± 1%
9	Frequency Range	46~54Hz or 56~64Hz
10	Frequency Range (Batt. Mode)	50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz
11	Current Crest Ratio	3:1 (max.)
12	Harmonic Distortion	<math>\leq 3\%</math> THD(Linear load), <math>\leq 7\%</math> THD(Non linear load)
13	AC Mode Efficiency	91%
14	Battery Type	SMF
15	Numbers	16-20
16	Charging Current (max.)	12 Amps settable to 10/11/12/13/14/15 Amp
17	Charging Voltage	273 VDC ± 1% (Based on 20pcs bateries)
18	LCD Panel	UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions
19	Battery Mode ,Low Battery ,Overload,fault	Sounding
20	Warranty	3 -year warranty

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**3 kVA  
UPS**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>
1	PHASE	1 phase in / 1 phase out
2	CAPACITY	3000 VA
3	Nominal Voltage	230 Vac (1 Ph+ N)
4	Voltage Range	160 Vac-300 Vac (1-phase) @ 100% load
5	Frequency Range	46~54 Hz or 56~64Hz
6	Power Factor	≥ 0.99 @ 100% load
7	Output Voltage	208 **/220/230/240VAC
8	AC Voltage Regulation (Batt. Mode)	± 1%
9	Frequency Range (Synchronized Range)	46~54Hz or 56~64Hz
10	Frequency Range (Batt. Mode)	50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz
11	Current Crest Ratio	3:1 (max.)
12	Harmonic Distortion	<=3% THD(Linear load), <=7% THD(Non linear load)
13	AC Mode Efficiency	91%
14	Battery Type	SMF
15	Numbers	6
16	Charging Current (max.)	6 Amps settable to 4/5/6/7/8 Amps
17	Charging Voltage	273 VDC ± 1% (Based on 20pcs bateries)
18	LCD Panel	UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions
19	Battery Mode ,Low Battery ,Overload,fault	Sounding
20	Warranty	3 -year warranty

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**Single Phase 15 kVA Servo Stabilizer**

<b>Sr. No.</b>	<b>Feature</b>	<b>Specifications</b>
1	Rating – 15 KVA ServoStabilizer	2KVA to 20 KVA
2	Input Voltage Range	a) 180V – 280Vb) 160V – 280Vc) 140V – 280V
3	Nominal Output Voltage	230V
4	Output Voltage Accuracy	± 1%
5	LineFrequency Variation	47Hz-53Hz .
6	Effect of Power Factor	None
7	Wave Form Distortion	None added
8	Control	Digital/Analogue
9	Response Time	10 ms.
10	Voltage Correction Rate1. Air Cooled2 Oil Cooled	25V / Sec.15V/ Sec
11	Warranty	3 -year warranty

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<b>42U Net rack and Server Rack</b>		
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>
1	42 U Rack	42U Rack Frame/800X1000/Steel/Welded/Black
2	Adopter Kit	19" Adopter kit /42U/Loops/Black
3	Perforated Door -	Front Single, Rear Double door
4	Swing Handle	Swing Handle /Mechanical Lock / Three Point / Common Key/Die Cast Metal
5	Rack mount power distribution unit	1Ph, 230V, 32A, 50/60Hz, Zero U standard with 12 X Indian Round Pin 5/15A, 16A MCB X 2 Circuits- PDU Rating 7.3KVA/Bottom feed-3Mt/ Black/ Inlet Plug Not Installed
6	Cable Basket	Cable Basket/42U/300/Black
7	Horz. Cable	Horz. Cable Organiser/1U/ Channel On Front
8	Universal Rack	Ground Kit-Type 1
9	Mounting Hardware	CR (Pack of 20)
10	Fan	ITE / Rack Air Circulation module/Tower Mount/360CFM
11	Warranty	3 Years

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**9U Netrack and Server Rack**

<b>Sr. No.</b>	<b>Feature</b>	<b>Specifications</b>
1	9 U Rack	9U Rack
2	Adopter Kit	12" Adopter kit /9U/Loops/Black
3	Perforated Door -	Front Single
4	Swing Handle	Swing Handle /Mechanical Lock / Three Point / Common Key/Die Cast Metal
5	Rack mount power distribution Unit	horz. Cable Organiser/1U/ Channel On Front
6	Cable Basket	Cable Basket/9U/
7	Horz. Cable	Horz. Cable Organiser/1U/ Channel On Front
8	Universal Rack	Ground Kit-Type 1
9	Fan	ITE / Rack Air Circulation module/Tower Mount/360CFM
10	Warranty	3 Years

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### Outdoor Armoured 6 core OFC Cable

Sr. No.	Feature	Specifications
1	Product Type	Fiber OSP cable
2	Armor Type	Corrugated steel
3	Cable Type	Loose tube
4	Fibers per Subunit, quantity	6
5	Filler, quantity	0
6	Jacket Color	Black
7	Subunit Type	Gel-filled
8	Total Fiber Count	6
9	Cable Length	2000 m   6,561.68 f
10	Diameter Over Jacket	10 mm   0.394 in
11	Jacket Material	High density polyethylene (HDPE)
12	Minimum Bend Radius, loaded	200 mm   7.874 in
13	Minimum Bend Radius, unloaded	160 mm   6.299 in
14	Tensile Load, short term, maximum	1250 N   281.011 lb
15	Cable Crush Resistance, maximum 3	30 N/mm   171.304 lb/in
16	Fiber Type	OS2
17	Attenuation, maximum	0.22 dB/km @ 1,550 nm   0.34 dB/km @ 1,310 nm
18	Standards Compliance	ANSI/TIA-568.C.3   IEC 60794-1   TIA-492CAAB (OS2)
19	Operating Temperature	20 °C to +70 °C (-4 °F to +158 °F)
20	Cable Qualification Standards	Telcordia GR-20-CORE
21	Fiber Type	OS2
22	Attenuation, maximum	0.22 dB/km @ 1,550 nm   0.34 dB/km @ 1,310 nm
23	Standards Compliance	ANSI/TIA-568.C.3   IEC 60794-1   TIA-492CAAB (OS2)
24	Operating Temperature	20 °C to +70 °C (-4 °F to +158 °F)
25	Cable Qualification Standards	Telcordia GR-20-CORE

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<b>OFC LC Pigtail</b>		
<b>Sr. No.</b>	<b>Feature</b>	<b>Specifications</b>
1	Product Type	Fiber pigtail, unjacketed
2	Color, boot A	Blue
3	Color, connector A	Blue
4	Interface, Connector A	LC/UPC
5	Jacket Color	Yellow
6	Total Fibers, quantity	1
7	Cable Assembly Length, minimum (ft)	1
8	Cable Assembly Length, maximum (ft)	23
9	Cable Assembly Length, minimum (m)	1
10	Cable Assembly Length, maximum (m)	7
11	Cable Retention Strength, maximum	2.00 lb @ 90 °   5.00 lb @ 0 °
12	Fiber Mode	Singlemode
13	Fiber Type	G.652.D   G.657.A1, TeraSPEED®
14	Environmental Specifications	
15	Operating Temperature	(-10 °C to +60 °C (+14 °F to +140 °F))
16	Environmental Space	Low Smoke Zero Halogen (LSZH)

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### Industrial Grade LC Media Converter With SFP

SN	Feature	Specifications
1	Converter	Ethernet to optical fiber
2	Compatible	network video products
3	Support	10/100/1000 Mbps
4	Configuration	Reliable
5	Slots	1 SPF & 1 Lan
6	Environment Type	IN/OUT
7	Type	Converter
8	Mounting Type	DinRail
9	Special Property	Extream Envioment

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### Single Mode Fiber Optic LC-LC Duplex Patch Chord

SN	Feature	Specifications
1	Product Type	Fiber patch cord, duplex
2	Color, boot A	Blue
3	Color, boot B	Blue
4	Color, connector A	Blue
5	Color, connector B	Blue
6	Interface, Connector A	LC/UPC
7	Interface, Connector B	LC/UPC
8	Jacket Color	Yellow
9	Polarity	Pairs, flipped
10	Total Fibers, quantity	2
11	Cable Assembly Length, minimum (ft)	1
12	Cable Assembly Length, maximum (ft)	999
13	Cable Assembly Length, minimum (m)	1
14	Cable Assembly Length, maximum (m)	999
15	Diameter Over Jacket	1.6 mm   0.063 in
16	Cable Retention Strength, maximum	11.24 lb @ 0 °   4.40 lb @ 90 °
17	Fiber Mode	Singlemode
18	Fiber Type	G.652.D   G.657.A1, TeraSPEED®
19	Operating Temperature	10 °C to +60 °C (+14 °F to +140 °F)

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**24 Port Wall Mount LIU Loaded**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>
1	Product Type	Fiber patch/splice panel
2	Product Series	FMS
3	Functionality	Patching   Splicing
4	Body Style	Symmetrical
5	Cable Exit Location	Rear, left side   Rear, right side
6	Color	Black
7	Color, front	Black
8	Interface, front	LC
9	Interface Feature, front	Standard
10	Rack Type	EIA 19 in
11	Rack Units	1
12	Shelf Movement	Sliding
13	Splice Trays Included, quantity	1
14	Splicing Type	Heat shrink, single fiber fusion
15	Total Ports, quantity	24
16	Fiber Mode	Singlemode
17	Fiber Type	OS2
18	Insertion Loss, maximum	0.3 Db
19	Return Loss, minimum	45 dB

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### 6 Port Wall Mount LIU Loaded

SN	Feature	Specifications
1	Product Type	Fiber patch/splice panel
2	Product Series	FMS
3	Functionality	Patching   Splicing
4	Body Style	Symmetrical
5	Cable Exit Location	Rear, left side   Rear, right side
6	Color	Black
7	Color, front	Black
8	Interface, front	LC
9	Interface Feature, front	Standard
10	Rack Type	EIA 19 in
11	Rack Units	1
12	Shelf Movement	Sliding
13	Splice Trays Included, quantity	1
14	Splicing Type	Heat shrink, single fiber fusion
15	Total Ports, quantity	6
16	Fiber Mode	Singlemode
17	Fiber Type	OS2
18	Insertion Loss, maximum	0.3 dB
19	Return Loss, minimum	45 dB

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### 24 Port Manageable SFP Switch

SN	Feature	Specifications
1	IOS	LAN Lite
2	Forwarding bandwidth	28 Gbps
3	Switching bandwidth	56 Gbps
4	10/100/1000 Ethernet Ports	24
5	Uplink Interfaces	4 x 1G SFP
6	Fanless	Y
7	DRAM	512 MB
8	Flash memory	256 MB
9	Dimensions (H x D x W)	1.73 x 9.45 x 17.5 in. (4.4 x 24 x 44.5 cm)
10	Net Weight	6.61 lb (3.0 kg)
11	Warranty	3 Years

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### 7 Ft. CAT 6 Patch Chord

SN	Feature	Specifications
1	Regional Availability	EMEA   Latin America
2	Product Type	Twisted pair patch cord
3	Product Series	NPC
4	Ordering Note	Cords < 1 m are valid elements for use in a channel or as an equipment interconnect but due to their limited length are not guaranteed to meet component compliance requirements that were developed to assess the quality of longer cords   Cords > 1 m are authorized for use in channels and are an effective standalone method used to connect active devices
5	Product Number	CC6ZH
6	ANSI/TIA Category	6
7	Cable Type	U/UTP (unshielded)
8	Conductor Type	Stranded
9	Interface, Connector A	RJ45 plug
10	Interface Feature, Connector A	Standard
11	Interface, Connector B	RJ45 plug
12	Interface Feature, connector B	Standard
13	Jacket Color	Black   Blue   Green   Orange   Red   Slate   White   Yellow
14	Pairs, quantity	4
15	Separator Type	Bisector
16	Transmission Standards	ANSI/TIA-568.2-D   IEEE 802.3bt Type 4   ISO/IEC 11801 Class E
17	Cable Assembly Length Range (m)	1 – 30
18	Cable Assembly Length Range (ft)	1 – 100
19	Cable Assembly Length Range (cm)	15 – 999
20	Cable Assembly Length Range (in)	6 – 999
21	Diameter Over Jacket	5.97 mm   0.235 in
22	Compatible Conductor Gauge, stranded	24 AWG
23	Nominal Velocity of Propagation (NVP)	69%
24	Remote Powering	Fully complies with the recommendations set forth by IEEE 802.3bt (Type 4) for the safe delivery of power over LAN cable when installed according to ISO/IEC 14763-2, CENELEC EN 50174-1, CENELEC EN 50174-2 or TIA TSB-184-A

25	Operating Temperature	20 °C to +60 °C (-4 °F to +140 °F)
26	Relative Humidity	Up to 93%, non-condensing
27	EN50575 CPR Cable EuroClass Fire Performance	Dca
28	EN50575 CPR Cable EuroClass Smoke Rating	s2
29	EN50575 CPR Cable EuroClass Droplets Rating	d2
30	EN50575 CPR Cable EuroClass Acidity Rating	a1
31	Environmental Space	Low Smoke Zero Halogen (LSZH)
32	Flame Test Method	IEC 60332-1
33	Safety Standard	C-Tick   UL 1863

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<b>CAT 6 UTP Cable</b>		
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>
1	Conductor	4 pair UTP cable 23 AWG Solid Bare Electrolytic Grade Copper
2	Primary insulation	PVC
3	Outer Sheath	FRPVC in ace. with IEC 61034, flame-retardant in ace. Cable jacket material FRLS PVC .
5	Coating	Screened to ensure protection against EMI and for cross talk compliance.
6	Application	Indoor I outdoor installation maximum permissible-90mtrs for one point to another.
7	Network support	Supports ultrahigh speed data networks such as Gigabit Ethernet (1000 Base-T and 1000 Base-TX) and beyond.
8	IEEE 802.3ab	Zero-bit Error, UL verified
9	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR for 4-conductor channel
10	Manufacturer	All passive cabling must be from same OEM
11	Filler	PE
12	Outer dia for primary UTP cable	nominal value $\varnothing 9.2 \pm 0.3$ mm
13	Packing	Roll of 305 meters
14	Impedance	100 Ohms + / - 15 ohms
15	Performance characteristics to be provided along with Bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR
16	Delay Skew:	45ns Max
17	Impedance:	100 $\pm$ 15 Ohms
18	Current Rating:	1.5 A Max
19	Conductor DC Resistance:	$\leq 93.5$ OHMS/1000MTR@20Degree C. MAX
20	Voltage:	150VAC
21	NVP	0.67
22	Propagation delay:	536 nS/100M
23	Mutual Capacitance:	5.6nF/100m Nominal
24	Insulation Resistance:	500 M $\Omega$ Minimum
25	Dielectric Strength:	1000 V RMS
26	Contact Resistance:	10 m $\Omega$ Max
27	Approvals	ISO/IEC 11801 ed. 2.2; TIA 568-C.2, ISO 9001;ISO14001

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**5/15 amp 12 Socket Power Distribution Unit**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>
1	Regional Availability	Asia
2	Product Type	12 Socket PDU
3	Product Series	5/15 Amp PDU
4	<b>General Specifications</b>	
		5/15 Amp 12 Socket PDU , 16Amp Single Pole MCB, Light Indicator , 3 meter 2.5 Sq mm Power cord with 16 Amp TOP
5	Warranty	3 Years

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**5/15 amp 6 Socket Power Distribution Unit**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>
1	Regional Availability	Asia
2	Product Type	6 Socket PDU
3	Product Series	5/15 Amp PDU
4	<b>General Specifications</b>	Light Indicator , 1.5 meter 2.5 Sq mm Power cord with 6 Amp TOP
5	Warranty	3 Years

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## Outdoor Pole

SN	Feature	Specifications
1	Type	Self Support
2	Material	Galvanised Steel
3	Height	5 Mtrs as per site requirements
4	Wind Speed	180 Kmph
5	Stress	Within Acceptable Limit
6	Foundation	<p>1) The Foundation of pole to be designed for three types of soil namely soft, medium, hard/rocky</p> <p>2) Guard against corrosion and soil erosion should be taken care of</p> <p>3. The back filling should be done by proper compaction of soil in layers &amp; should be done before erection M20 concrete shall be used. Material mixing and quality control of concrete shall be as per IS 456:2000 , High Strength deformed steel bars of grade Fe 425 confirming to IS:456 shall be used. Spacing of bars shall be as per IS 2502 (1963)</p> <p>4. Welding shall be done as per IS:9595 (1996)</p>
7	Earthing	50x3 mm GI strip should be bonded to the base of the pole & connected to earth pit/grid( If available in plant or if a new earth is to be provided same shall be provided by BMC) at the other end Value of the earth resistance shall be 0.5 ohms)

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### Outdoor Junction Box

Sr. No.	Feature	Specifications
1	Structure	Enclosure with 600W X 9U X 600D front CRCA sheet steel door with 2nos of cam locks with key, one mounting plate, cable entry. Cabinet should have 19" mounting angles to mount IT/ rack mounted equipments. Cabinet should have fan and filter on side to have better air ventilation. Accessories like mountingclamp (Wall / Pole clamp), PG Glands / Gland plats, mounting hardware. Material thickness should be Min 1.6mm Must be IP65/66 Complains
2	Mounting	On Camera Pole / Ground mounted on concretebase.
3	Material	Door: CRCA steel door, all-round foamed-in PUseal, Mounting plate: Sheet steel. Cabinet should be construct with CRCA sheet
4	Painting of Junction box	Painting/Coating: Primary Nano ceramic coating, Electrophoretic Dip Coating with 20-30 Microns and then Power Coating with 80-120 Micron
5	Protection	Min. IP 65/66 or better suitable for operations of Field Equipment's
6	Accessories	<b>Supply includes:</b> – Enclosure with door(s) – Mounting plate – Lock: 3 mm double-bit – JB with PDU's (should have 5 Nos sockets).
7	Approvals	UL, CSA, TÜV, DNV GL, Bureau Veritas, ISO 9001, EN ISO 14001, OHSAS 18001 approvals required

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**3 Core x 2.5 sq. mm Armoured copper FRLS cable**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>
1	Type of cable:	3 Core x 2.5 sq. mm Armoured copper FRLS cable
2	Voltage Rating:	Up to and including 1100 volts
3	Construction:	2.5 sq. mm multi stranded annealed bare electrolytic
4	Primary insulation:	Extruded PVC compound as per IS 5831 type C
5	Inner Sheath:	Extruded PVC compound type ST2
6	Outer Sheath:	Extruded PVC compound, type ST2
7	Armour over inner sheath:	thickness>1.4mm, Galvanized steel
8	Colour	Red, Black, Green
9	Insulation resistance	100M ohm / KM @500V DC
10	Strands	7 nos. with each strand of atleast0.68 mm diameter
11	Core Identification:3 Cores:	3-Cores: Red, Yellow & Blue
12	Rip Chord	Shall be provided

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### 50 mm Outdoor HDPE Pipe

SN	Feature	Specifications
1	Type of Pipe:	Double wall Corrugated Pipes of HDPE.
2	Outer Wall:	Being Corrugated imparts, excellent ring Stiffness (Compression Strength)
3	Inner Wall:	Smooth allowing easy insertion of Cable
4	Colour:	Black outer wall with non-black inner wall.
5	Material:	High density polyethylene (HDPE)
6	Specifications:	IS-16205 Part 24 TEC GR NO. GR/DWC-34/01SEP.2007
7	Dimension:	50 MM OD X 38 MM ID

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## CCTV Control Room at Borivali & Malad Reservoir

SN	Feature	Specifications
1	Structure	4x2 inch - I Channel, Cross Member of 3x1.5 inch C-channel ,overall framework ,internal ,external cladding with insulation & other peripherals <b>SIZE: 7 Ft X 8 Ft</b> OR as per site conditions
2	Roof	2 side slope roof of MS plane sheet welded with MS frame structure , adequate roof bows top inner decorated with 8MM thick MDF laminated board
3	Cage Structure	MS frame work with square pipe & wall thickness 2X2 square pip
4	Outer wall	MS 1.2 MM Corrugated bended sheet welded on MS frame & 8 MMThick MDF Board wiyh Laminated board .
5	Internal wall	12MM Thick MDF Board with Laminated board.
6	Door	Frame work by 3X6.5 square pipe external wall made by MS sheet & Inner wall decorated by 9MM laminated board. Handel and Hold Draft.( suitable lockable arrangement)
7	Insulation	25 MM Thick glass wool shall be used for wall and 50MM thick glass wool to be provided for roof which will be rot proof, fire retardant , Non-hygroscopic and vermin proof
8	Window	3' X 3' window shall be aluminum double shutter sliding type with black powder coating & grill, 4 mm thick glass shall be clear( With Monsoon Shade and safety grille
9	Painting	Epoxy zinc phosphate primer and synthetic epoxy paints used for final 2 Coats
10	Electrical	Concealed Electrical Copper cables & wiring suitable for 250 volts 50
11		HZ single phase AC power supply. Copper cables used are of 2.5 mmfor lighting circuits. ISI mark & concealed PVC conduits insulated copper wire used for wiring in PVC conduit with small size distribution board with MCB protection and to separate with main Power supply
12	Flooring	18 MM thickMarine Ply board with PVC vinyl carpet 1.2 mm thick
13	Bulked light	1 bulked light will be provided outside the cabin
14	Provisions	Supply & Fixing of 1) 1.5 Tone Split AC with Accessories-02 nos , 2) LED Lights 18 W -2 nos , 3) Ceiling Mount Fan-02 Nos , 4) Windwos- Sliding -2 nos with curtain, 5) Electrical Switch Boards /MCBs etc. as per site requirements

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**E. E(M)M.W.**

## Technical Compliances

<b>Full HD Outdoor IR Positioning Camera</b>			
<b>Sr. No.</b>	<b>Feature</b>	<b>Specific ations</b>	<b>Compliance (Y/N)</b>
1	Image Sensor	1/1.9" Progressive Scan CMOS, ,MIL-STD-810G or better with 400 IR Range	
2	Operating Frequency	50 Hz	
3	Day/ Night Operation	Automatic with IR Cut Filter	
4	Minimum Illumination	Colour: 0.07 Lux @ 30 IRE ,BW": 0.01 @ 30 IRE at F1.6 or better	
5	high-speed pan-tilt functionality	360° endless pan range and a Tilt: -90° to +90°	
6	Optical Zoom	30x Minimum & 18x Digital Zoom or better	
7	Lens	7-201 mm or Better	
8	Pan, tilt, manual and preset speed The speed shall be applicable for Manual, Tour and Preset Mode	0.05°/s to 150°/s	
9	Image Resolution	1920 x 1080 or better	
10	Compression	H.264 / H.265 Main, High and Baseline Profiles Motion JPEG	
11	Frame Rate and Bit Rate	25/50 FPS at all resolutions with Controllabe Bit Rate / Bandwidth and Frame Rate	
12	Video Streams	Minimum 4 Streams @ 1920x1080, H264/ H265 , 25 fps or better	
13	Motion Detection	Yes built in with multiple configurable areas in the video stream	
14	Electronic Shutter	1/30000 s to 1/6s or better	
15	Electronic Exposure & Control	Automatic/ Manual	
16	Wide Dyanamic Range	110 dB or better	
17	Electronic Image Stabilization	Required	
18	Image Freeze on PTZ	Required	
19	Preset Positions	Minimum 256 or better	
20	Event Triggers	Analytics, edge storage events, virtual inputs through API Detectors: day/night mode, live stream accessed, shock detection Hardware: fan, network, temperature Input Signal: virtualinputs, manual trigger PTZ: autotracking, error, moving, preset reached, ready Storage: disruption, recording System: system ready Time: use schedule	

21	Event Actions	Record video: SD card and network share Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email Pre- and post-alarm video or image buffering for recording or upload Notification: email, HTTP,HTTPS, and TCP PTZ: PTZ preset, start/stop Alerts tour, autotracking Overlay text, day/night mode	
22	Pixel Counter	Built in	
23	Firmware Upgrade	The firmware upgrade shall be done through web interface, The firmware / upgrade shall be available free of cost	
24	Interface	RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE	
25	Enclosure	IP68-, NEMA 4X- and IK10-rated aluminum casing Wiper included	
26	Memory	1GB RAM, 512 MB Flash or better, The camera shall have inhouse processor for better performance and support for 3rd Party analytics	
27	Certification	UL, CE, FCC Part 15 Subpart B Class A, NIST SP500-267, IEC 60068-2-6, VCCI Class A, RCM AS/NZS CISPR32 Class A, MIL-STD-810G, NEMA TS 2, IEC/EN 62262 IK10,	
28	Embedded Applications	Video Motion Detection, Fence Alerts, Motion Alerts , Anti-Theft and The camera shall provide a platform allowing the upload of third party applications into the camera	
29	MAC compliant	The MAC Addresses of all the camera supplied should be from OEM, not from for ODM Manufacturers	
30	Protocol	The camera shall have Built in IPv4, IPv6 USGv6, HTTP, HTTPS, SSL/TLS, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP®, SNMP v1/v2c/v3, (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, SRTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, SIP, LLDP, MQTT The Camera to be provided by the Bidder all the components / parts / assembly / software used in the offered hardware and software, should not be complying to GB28181, GB/T 28181-2011; GB/T28181-2011; GBT 28181-2011; GBT28181-2011 standards. There should be no option to activate or deactivate these standards in the camera webpage/Settings.	

31	Application Programmers Interface	The interface shall be available for integration with 3rd party analytics and applications in public domain free of cost	
32	Onvif S, G	Required	
33	Warranty	3 Years OEM warranty	

**Bidder's Sign and Stamp**

### UHD Outdoor IR Bullet Camera

Sr. No.	Features	Specifications	COMPLIANCES (Y/N)
1	Image Sensor	Progressive scan RGB CMOS 1/2.5" or better	
2	Image Resolution	8 MP or better with 25 Meter IR Range	
3	Day/ Night Operation	Yes with Builtin IR Cut Filter,	
4	Minimum Illumination	Color: 0.20 lux @ 50 IRE B/W: 0.05 lux @ 50 IRE	
5	IR Illumination	Built in Or External Optimized IR with 25 meter range, 850nm, with adjustable angle and intensity or better	
6	Lens	3–9 mm, F1.6, Remote focus and zoom, P-Iris control, IR corrected ,	
7	Field of View	109°–37° or better	
8	Electronic Shutter	1/60000 s to 2 s or better	
9	Standard Resolution	Forensic WDR, Lightfinder,Optimized IR. Zipstream ,3840 x 2160 or Better	
10	Compression	H.264 in Baseline, Main and High Profile MPEG4, MJPEG	
11	Frame Rate and Bit Rate	Upto 25 FPS at all resolutions with Controllable Bit Rate/ Bandwidth and Frame Rate	
12	Image reproduction	Compression, Color, Brightness, Sharpness, Contrast, Local contrast, White balance, Exposure Control	
13	Multi View Streams	Minimum 8 individually cropped out view areas	
14	Video Streams	Minimum 4 Streams @ H.264, 2160P, 25 fps and Motion JPEG with Controllable frame rate and bandwidth VBR/CBR H.264 or better	
15	Intelligent Motion Detection	Yes, built in with multiple detection scenarios with separate include area, exclude areas, and filters, with multiple include areas. The motion detection shall allow One include area and 3 exclude areas and Filtering for swaying objects, short-lived objects and small objects or better	
16	Digital Auto tracking	The camera should have built-in Automatic object detection and tracking. The camera should automatically detect, digitally zoom in on and follow moving objects such as people or vehicles in its field of view	
17	Pan Tilt Zoom	Digital PTZ, Presets	
18	Electronic Exposure & Control	Automatic/ Manual	
19	Wide Dynamic Range	Forensic Wide Dynamic range	



20	Protocol	<p>The camera shall have Built in IPv4, IPv6 USGv6, HTTP, HTTPSa,, SSL/TLSa,QoS Layer 3 DiffServ,FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP® , SNMP v1/v2c/v3,(MIB-II), DNS, DynDNS, NTP, RTSP, RTP, SRTP, TCP, UDP, IGMP,RTCP, ICMP, DHCP, ARP, SOCKS, SSH, SIP, LLDP, MQTT</p> <p>The Camera to be provided by the Bidder all the components / parts / assembly / software used in the offered hardware and software, should not be complying to GB28181, GB/T 28181-2011; GB/T28181-2011; GBT 28181-2011; GBT28181-2011 standards.</p> <p>There should be no option to activate or deactivate these standards in the camera web page/Settings.</p>	
21	Event Triggers	<p>Analytics</p> <p>Detectors: live stream accessed, video motion detection, audio detection, day/night mode, shock detection, tampering</p> <p>Hardware: network, temperature</p> <p>Input Signal: digital input port, manual trigger, virtual inputs</p> <p>Storage: disruption, recording</p> <p>System: system ready</p> <p>Time: recurrence, use schedule</p>	
22	Event Actions	<p>Record video: SD card and network share</p> <p>Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email, Pre- and post-alarm video or image buffering for recording or upload</p> <p>Notification: email, HTTP, HTTPS, TCP and SNMP trap</p> <p>PTZ: PTZ preset, start/stop guard tour, Overlay text, external output activation, day/night mode</p>	
23	Edge Storage	Built in SD card slot with support upto 128 GB with Class 10 speed and Support for SD card encryption	
24	Storage	The Camers shall have the feature to directly record the videos/ images onto Nas without any Software	
25	Security	Password protection, IP address filtering, HTTPSa encryption, IEEE 802.1X,network access control, digest authentication, user access log, centralized certificate management, brute force delay, protection, signed firmware	
26	Firmware Upgrade	The firware upgrade shall be done though web interface, The firmware shall be available free of cost	

27	Memory	1GB RAM, 512 MB Flash or better with Inhouse Processor	
28	Interface	RJ 45, 100 Base TX	
29	Casing	IP66 , NEMA 4X-, and IK10-rated casing,PVC free	
30	Certification	UL, CE,FCC Part 15 Subpart B Class A,VCCI Class A,EMC	
31	Embedded Applications	Motion Detection, Tampering, Loitering, Advance motion detection,virtual trip-wire. The camera shall provide a platform allowing the upload of third party applications into the camera	
32	Mount	Wall Mount / Pole Mount	
33	Active alerts on speaker	The camera should send trigger via HTTP/HTTPS to IP Speaker for active alerts.	
34	Onvif S, G	Required	
35	Warranty	3 Years OEM Warranty	

**Bidder's Sign and Stamp**

### Full HD IR Indoor Dome Camera

SN	Feature	Specifications	Compliance (y/n)
1	Image Sensor	1/3" progressive scan RGB CMOS or better with 20 meter IR Range	
2	Operating Frequency	50 Hz	
3	Day/ Night Operation	Yes with Builtin IR Cut Filter	
4	Minimum Illumination	Color : 0.19 lux @ 50 IRE ,B/W: 0.04 lux @50 IRE	
5	IR Illumination	Built in Or External Optimized IR with 20 meter range, 850 nm	
6	Lens	2.8 mm, F2.0	
7	Field of View	Horizontal field of view: 105° or better	
8	Electronic Shutter	1/30000 s to 1/5 s or better	
9	Image Resolution	1920x1080 or better	
10	Compression	H.264 / H.265 Baseline, Main and High Profiles, Main Profile ,Motion JPEG	
11	Frame Rate and Bit Rate	Upto 25 FPS at all resolutions with Controllable Bit /Bandwidth & Frame Rate	
12	Multi View Streams	Up to 2 individually cropped out view areas	
13	Video Streams	Minimum 4 Streams @H.264 / H.265, 2MP, 25 fps	
14	Intelligent Analytics	The Camera shall be able to Include or Exclude any area of any size/ dimension within the scene in order to Eliminate False alarm and also optimize the bandwidth and Storage	
15	Digital Auto tracking	The camera shall have Built in Capability to digitally track the movements or Using Video Analytics	
16	Pan Tilt Zoom	Digital PTZ	
17	Wide Dynamic Range	Minimum 118 dB	
18	Protocols	The camera shall have Built in IPv4, IPv6 USGv6, HTTP, HTTPSa,, SSL/TLSa,QoS Layer 3 DiffServ, IGMP,RTCP, ICMP, DHCP, ARP, SOCKS, SSH, SIP, LLDP, The Camera to be provided by the Bidder all the components / parts / assembly / software used in the offered hardware and software, should not be complying to GB28181, GB/T 28181-2011; GB/T28181-2011; GBT 28181-2011; GBT28181-2011 standards. There should be no option to activate or deactivate these standards in the camera web page/Settings.	
19	Security	Password protection, IP address filtering, HTTPSa encryption,,IEEE 802.1x (EAP-TLS) network access control, Digest authentication, User access log, centralized Certificate ,Management, brute force delay	

		protection, signed firmware,secure boot	
20	Firmware Upgrade	The firware upgrade shall be done though web interface. The firmware shall be available free of cost	
21	Memory	512 MB RAM, 512 MB Flash	
22	Interface	RJ 45, 100 Base TX	
23	Enclosure	IP66, NEMA 250 Type 4X, and IK08-rated	
24	Power requirements	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 Max.: 9 W	
25	Operating Temperature	-30°C to 50°C	
26	Operating Humidity	Humidity 10-100% RH (condensing)	
27	Certification	UL, CE, FCC, IEC,IEC 60068-2-6, IEC 60068-2-27,NIST SP500-267,RCM AS/NZS CISPR 32 Class A IEC/EN 62262 IK08, IEC/EN 60529 IP66, NEMA 250 Type 4X	
28	Analytics	Motion Detection, Tampering, Loitering, Advance motion detection,The camera shall provide a platform allowing the upload of third party applications into the camera	
29	Support of 3rd party Analytics	The camera should support 3rd party edge based analytics	
30	Mount	Wall / Ceiling / Surface	
31	Active alerts on 3rd party devices	The camera should send trigger via HTTP/HTTPS for alerts for any compatible IoT devices.	
32	Onvif S, G	Required	
33	Warranty	3 Years OEM warranty	

**Bidder's Sign and Stamp**

<b>Surge Protector for Outdoor Cameras</b>			
<b>Sr. No.</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance(Y/N)</b>
1	Casing	Weatherproof metal enclosure	
2	Weight	300 g or better	
3	Mounting option	Wall Pole (requires straps or similar)	
4	Connectors	RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE	
5	Power	minimum Surge Handling Capability: 10 kV, 5 kA to ground in 8/20 $\mu$ s 800 V, 100 A PoE Input Power: 95 W (max) Input Current: 2 A (max)	
6	Operating conditions	-.40 °C to 85 °C -.40 °F to 185 °F	
7	Humidity	Humidity 0 to 100 % (condensing)	
8	Approvals	IEC 60529 IP66 ,NEMA 250 Type 4X UL 497B EN 50581 REACH WEEE GR1089 IEC 61643-21 ITU-T K.45	
9	Warranty	3 -year warranty	

**Bidder's Sign and Stamp**

### Recording Server

SN	Feature	Specifications	Compliance (Y/N)
1	No. of Cameras Supported	64 Ch cameras or more is preferable	
2	Processor	1 - Intel Xeon Silver 4210R 2.4G, 10C/20T, 9.6GT/s, 13.75M Cache, Turbo, HT (100W) DDR4-2400,	
3	Mother Board On board Accessories	MLK Motherboard, V2 PERC H750 Adapter, Low Profile, Performance BIOS Settings , 2-Jumper Cord - C13/C14, 2M, 250V, 10A (India BIS), Trusted Platform Module 2.0, Dual-Port 1GbE On-Board LOM.,iDRAC Group Manager, Enabled , 1 - iDRAC9,Enterprise, 3.5"Chas up 12 HP HDs 2x3.5" Rear Drives, 1PERC/HBA11,1 - 1xFH, 1 or 2CPU , 1 CPU Standard Thermal for 3.5" Chassis , No Internal Optical Drive, 3200MT/s RDIMMs, Dual, Hot-Plug, Redundant Power Supply (1+1), 750W.	
4	RAM	2X16GB RDIMM, 3200MT/s, Dual Rank.	
5	Storage	12TB X10 Nos, 7.2K RPM SATA 6Gbps 512e 3.5in Hot-plug Hard Drive, 2 - 480GB SSD SATA Read Intensive 6Gbps 512 2.5in Flex Bay AG Drive,3.5in HYB CARR, 1 DWPD, RAID levels: 0, 1, 5, 6, 10	
6	Operating Systems	1- Windows Server 2019 Standard,16CORE,Digitally Fulfilled Recovery Image, 1 Multi Language Software, iDRAC,Factory Generated Password , 1 Windows Server 2019 Standard,16CORE,FI,No Med, No CAL, Multi Language, 1 Windows Server 2019 Standard,16CORE,Media Kit, Multi Language , 1 - Windows Server 2019 Standard,No Media, WS2016 Std Downgrade w/DVD Media,Multi Lang, 1- UEFI BIOS Boot Mode with GPT Partition , 1 - OpenManageEnterprise Advanced	
7	Network Card	2x RJ45 Ports	
8	Recording	Shall support recording 64 or more video channels with a total recording rate up to 512 Mbit per second or better	
9	Software	Compatible with Cameras, Encoders including HD, Standard resolution, High Resolution, Pant Tilt, Zoom, Thermal, Cameras, Access Control, IP Speakers, Alarm IO Modules	
10	Video Compression	H.264 (MPEG-4 Part 10/AVC), Motion JPEG or better	
11	Map function	Map functions create a map ping between input data and out put data displayed in the view results/ on Screen	
12	PTZ Control	Pan Till & Zoom controll must be control through recording server	

13	Playback	Up to 64x or frame by frame Up to 16 or more cameras synchronized playback	
14	Export	Manual and scheduled export, Single images in JPEG format, Video in ASF format, Digital signature on exported recordings, Standalone player	
15	Scheduled recording	The software shall allow recordings for continuous, motion based, event based, or customized as per user / scheduled	
16	Microsoft Active Directory support	Yes, multiple user access levels with password protection using local or Windows domain users (Active directory)	
17	Alarm Manager & Event triggers	Events triggered by video motion detection, Active Tampering Alarm, Cross Line Detection, External I/O, Action button, System triggers and device event triggers, Manual Triggers, Edge Based Analytic Triggers	
18	Power	750 W (100-240 V AC, 10 - 5 A, 50/60 Hz	
19	Connectors	2x USB 3.1, 1x USB 3.1 Type-C, 2x USB 2.0, x VGA, 1x Serial port	
20	Operating conditions	10 °C to 35 °C (50 °F to 95 °F)	
21	Video Recording Software Upgradation	The Manufacturer shall support free upgrades for Software and firmware	
22	Certification	EN/IEC/UL 60950-1, FCC part 15 class A, VCCI class A, RCM AS/NZS CISPR 32 Class A, EN 55032, class A, ICES-003/NMB-003 Class A, KC KN32 Class A, KN-35, EN 55024, EN/IEC61000-3-2, EN/IEC 61000-3-3, NOM, BSMI, EAC'	
23	Warranty	3 Years OEM warranty	

**Bidder's Sign and Stamp**

## 16 Channel Network Video Recorder

SN	Feature	Specifications	Compliance (Y/N)
1	No. of Cameras supported	16 Ch cameras or more is preferable	
2	Processor	Intel Core i5	
3	RAM	8 GB	
4	Storage	8 TB , Raid 0,1	
5	Operating Systems	Microsoft windows 10 Enterprises	
6	Network Card	1x RJ45 Ports	
7	Recording	Shall support recording 16 or more video channels with a total recording rate up to 512 Mbit per second or better	
8	Software	Compatible with Cameras, Encoders including HD, Standard resolution, High Resolution, Pant Tilt, Zoom, Thermal, Cameras, Access Control, IP Speakers, Alarm IO Modules	
9	Video compression	H.264 (MPEG-4 Part 10/AVC), Motion JPEG or better	
10	Map function	Map functions create a map ping between input data and out put data displayed in the view results/ on Screen	
11	PTZ Control	Pan, Till & Zoom of canmeras must be control through recording server.	
12	Playback	Up to 64x or frame by frame Up to 16 or more cameras synchronized playback	
13	Export	Manual and scheduled export, Single images in JPEG format, Video in ASF format, Digital signature on exported recordings, Standalone player	
14	Scheduled recording	The software shall allow recordings for continous, motion based, event based, or customized as per user / scheduled	
15	Microsoft Active Directory support	Yes, multiple user access levels with password protection using local or Windows domain users (Active directory)	
16	Alarm Manager &Event triggers	Events triggered by video motion detection, Active Tampering Alarm, Cross Line Detection, External I/O, Action button, System triggers and device event triggers, Manual Triggers, Edge Based Analytic Triggers	
17	Power	750 W	
18	Connectors	1x USB 3.1,1x USB 3.1 Type-C,2x USB 2.0,x VGA,1x Serial port	
19	Operating conditions	10 °C to 35 °C (50 °F to 95 °F)	



20	Video Recording Software Upgradation	The Manufacturer shall support free upgrades for Software and firmware	
21	Certification	EN/IEC/UL 60950-1, FCC part 15 class A, VCCI class A, RCM AS/NZS CISPR 32 Class A, EN 55032, class A, ICES-003/NMB-003 Class A, KC KN32 Class A, KN-35, EN 55024, EN/IEC 61000-3-2, EN/IEC 61000-3-3, NOM, BSMI, EAC'	
22	Warranty	3 Years OEM warranty	

**Bidder's Sign and Stamp**

### Outdoor IP Horn Speaker

SN.	Features	Specifications	Compliance (Y/N)
1	Audio	One-way	
2	Microphone frequency	Built-in microphone with frequency 50 Hz - 12kHz	
3	Max sound pressure level	Minimum 118 dB	
4	Frequency response	280 Hz -12.5 kHz	
5	Coverage	Minimum 68° horizontal by 95° vertical (at 2kHz)	
6	Built In Amplifier	7 W Class D amplifier	
7	Security	Password protection, IP address filtering, HTTPS encryption, IEEE 802.1X network access control, Digest authentication, User access log	
8	Compression	AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz,, WAV ,MP3 in mono/stereo from 64 kbps to 320 kbps. Constant and variable bit rate. Sampling rate from 8 kHz up to 48 kHz.	
9	VoIP Support	Support for Session Initiation Protocol (SIP) for integration with Voice over IP (VoIP) systems, peer to peer or integrated with SIP/PBX. Supported SIP features: IPv6, SRTP, SIPS, SIP TLS, DTMF , NAT (ICE, STUN, TURN) Supported codecs: PCMU, PCMA, opus, L16/16000, L16/8000, G.726-32	
10	Supported protocols	IPv4/v6, HTTP, HTTPS, SIP, SSL/TLS, QoS Layer 3 DiffServ, FTP, CIFS/SMB, SMTP, Bonjour, UPnP, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, TCP, UDP, IGMP, ICMP, DHCP, ARP, SSH	
11	Audio functionality	The horn speaker shall support SIP for integration with VoIP, peer-to-peer or integrated into SIP/PBX	
12	Installation and Maintenance	The horn speaker shall include a test functionality allowing a test tone sequence to be generated and measured by the built-in microphone to verify full functionality	
13	API	Horn speakers shall be fully supported by an open and published API (Application Programmers Interface), which shall provide necessary information for integration of functionality into third party applications	
14	Firmware	The firmware upgrade shall be done through web interface, The firmware shall be available free of cost	
15	Audio Speaker test	Shall be available for testing speaker Functionality	

16	Schedule Announcement	Should have inbuilt player to shedhule music/announcement in advance	
17	Event triggers	Call, Virtual inputs	
18	Event actions	File upload via HTTP/network share/ email Notification via email, HTTP and TCP Play audio clip Send Auto Speaker Test Send SNMP trap Status LED	
19	Audio management	Inbuilt Software applications for managing and controlling audio system .Support 20 Zones and 200 speaker with zone management, content management, content scheduling and health monitoring	
20	Functional monitoring	Auto Speaker Test, Connection verification, Built-in system logging	
21	Housing	Impact-resistant aluminum, IP66-, IP67-, NEMA 4X-rated, and MIL-STD-810G .	
22	Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 (max. 13 W)	
23	Connectors	RJ45 10BASE-T/100BASE-TX PoE,I/O: terminal block for one input and one output	
24	Operating Temperature	-40°C to 60 °C (-40 °F to 140 °F)	
25	Operating Humidity	Humidity 10–100% RH (condensing)	
26	Certification	EN, CE, FCC, UL, IEC,IEC/EN/UL 62368-1, IEC/EN/UL 60950-22,EN 55032 Class B	
27	Warranty	3 Years OEM Warranty	

**Bidder's Sign and Stamp**

### Radar with Accessories

SN	Feature	Specifications	Compliance (Y/N)
1	Sensor	Phased array FMCW (Frequency Modulated Continuous Wave)	
2	Object data	Range, direction, velocity, object type	
3	Frequency	24.05–24.25 GHz	
4	RF transmitpower	<100 mW (EIRP) License free. Unharmful radio-waves.	
5	Recommended mounting height	3.5 m (11 ft)	
6	Detection range	e 3–60 m (10–200 ft) when detecting a person 3–85 m (10–280 ft) when detecting a vehicle	
7	Radial speed	Up to 55 km/h (34 mph)	
8	Field of detection	Horizontal: 180	
9	Distance accuracy	0.7 m (2.3 ft)	
10	Angle accuracy	1°	
11	Spatial differentiation	3 mb	
12	Data refresh rate 1	10 Hz	
13	Coverage	5600 m <sup>2</sup> ,(61000 sq ft) for persons 11300 m <sup>2</sup> , (122000 sq ft) for vehicles	
14	Object classification	Humans, vehicles, unknown	
15	Radar controls	Multiple detection zones, crossline detections, and exclude zones with filters for short-lived objects, object speed, and object type. Radar transmission on/off, coexistence, reference map with rotation and cropping, grid opacity, zone opacity, color scheme, trail lifetime, detection sensitivity, swaying object filter	
18	Mode	ARTPEC-7	
19	Memory	1024 MB RAM, 512 MB Flash	
21	Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles H.265 (MPEG-H Part 2/HEVC) Main Profile Motion JPEG	
22	Resolution	1920x1080 HDTV 1080p to 640x360	
23	Frame rate	Up to 10 fps in all resolutions	
24	Video streaming	Multiple, individually configurable streams in H.264, H.265 and Motion JPEG Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265	
25	Image settings	Compression, rotation: 0°, 90°, 180°, 270° including corridor format, dynamic text and image overlay	
27	Audio streaming	Audio output via edge-to-edge technology	
28	Security	Password protection, IP address filtering, HTTPS encryption, IEEE 802.1X (EAP-TLS) network access control, digest authentication, user access log, centralized certificate management, brute force delay protection, signed firmware	

29	Supported protocols	IPv4/v6, ICMPv4/ICMPv6, HTTP, HTTP/2, HTTPS, , TCP,UDP, IGMPv1/v2/v3, RTCP,ICMP, DHCPv4/v6, ARP, SOCKS, SSH, LLDP, CDP, MQTT v3.1.1, Syslog, Link-Local address (ZeroConf)	
30	Casing	IP66-, NEMA 4X- and IK08-rated Aluminum and plastic casing Color:White NCS S 1002-B	
31	Sustainability	PVC free	
32	Power	Power over Ethernet (PoE) IEEE 802.3at, Type 2 Class 4, typical 11 W, max 15 W Power over Ethernet (PoE) IEEE 802.3bt, Type 3 Class 5 or Axis Midspan 60 W required for PoE Out 8–28 V DC, typical 10W, max 15 W	
33	Connectors	DC input RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE ,RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE output to power an external PoE device Relay: 2-pin terminalblock ,I/O: 6-pin 2.5 mm terminal block for four configurable, inputs/outputs	
34	Relays	1x 1 form A, 1 NO, max 5A, 24 V DC Expected lifetime 25,000 operations	
35	Storage	Support for microSD/microSDHC/microSDXCcard Support for SD card encryption (AES- XTS-Plain64 256bit) Recording to network- attached storage (NAS) ,For SD card and NAS recommendations see axis.com	
36	Operating conditions	40 °C to 60 °C (-40 °F to 140 °F) Humidity 10–100% RH (condensing)	
37	Storage conditions	40 °C to 65 °C (-40 °F to 149 °F)	
38	Approvals	Radio EN 300440, EN 301489-1, EN 301489-51, EN 62311, FCC Part 15 Subpart CEMC EN 55032 Class A, EN 55024, EN 61000-6-1, EN 61000-6-2, EN 61000-6-4, FCC Part 15 Subpart B Class A, ICES-3(A)/NMB-3(A), KC KN32 Class A, RCM AS/NZS CISPR 32 Class A, VCCI Class B, EAC Safety IEC/EN/UL 62368-1, IEC/EN/UL 60950-22 Environment IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP66, IEC/EN 62262 IK08, NEMA 250 Type 4X	

39	Dimensions	285 x 206 x 152 mm (11.2 x 8.1 x 6.0 in)	
40	Weight	2.4 kg (5.3 lb)	
41	Included accessories	Installation guide, connector kit, pipeadapters, cable gland, cable gaskets, Windows® decoder 1-user license	
42	Warranty	5-year warranty	

**Bidder's Sign and Stamp**

### SIP Mic With Accessories

Sr. No.	Feature	Specifications	Compliance (Y/N)
1	Supported zones.	Server-less paging to up to 12 zones	
2	Audio Stream	SIP2.0, RTP multicast	
3	Audio codecs	G.711u, G.722	
4	Speakers	2 built-in, stereo, power output 2x1 W	
5	Pre-recorded announcements	Upload or record a message via the microphone and then play it by simple push of a button to a designated zone.	
6	IP PBX (SIP)	Support device may function independently or be simply connected to IP PBX	
7	Power	12 to 32 V, power draw max. 1 A PoE to 802.3af standard	
8	Logical inputs	2, galvanically separated, sensitive to contact or voltage from 5 to 48 V	
9	Relay output	1, galvanically isolated, NO and NC contact, max load 48 V, 1 A	
10	Headphone output	3.5 mm jack, stereo, power output 2x30 mW, min. load impedance of 16 Ohm, DR. 101 dB, THD+N -85 dB	
11	Primary microphone input	symmetric, XLR, integrated phantom power supply 24 V, DR 88 dB, THD+N -82 dB	
12	Headset microphone input	3.5 mm jack, integrated power, supply for electret microphones, DR 84 dB, THD+N -78 dB	
13	Line input	3.5 mm jack, mono or stereo non-symmetric stereo, DR 93 dB, THD+N -82 dB	
14	Operating temperature	0-40°C	
15	Connectors	RJ45 10BASE-T/100BASE-TX PoE	
16	Other	Inbuilt software to manage 12 zone of IP speaker	

**Bidder's Sign and Stamp**

### Video Management Software

Sr No	Feature	Specifications	Compliance (Y/N)
1	Licensing	upto 48 channel supported	
2	Number of connected devices per system	8 or more	
3	Number of supported recording servers	2 or more	
4	Maximum numbers of users	2 or more	
5	Multiple video export formats	Yes	
6	Supports Smart Client, Web Client and Mobile Software	Yes	
7	Alarm Manager	Yes	
8	Third-party support for video analytics	Yes	
9	Failover Recording Servers	Yes	
10	Recording Server manager	Yes	
11	Support for ONVIF™ compliant devices	Yes	
12	Support for PSIA compliant devices	Yes	
13	Number of IP device brands supported device Integration	10 or more	
14	Built-in Video Motion Detection (VMD)	Yes	
15	Video motion detections per server	All connected Cameras	
16	Hardware configurable events (such as I/O input, motion, tampering, temperature, communication failure)	Yes	
17	System error events (for example disk full)	Yes	
18	Manual / User defined events	Yes	
19	Generic events from external systems	Yes	
20	Event-based device start/stop	Yes	
21	Alarm description and work instructions	Yes	
22	Manage alarms (reassign, change status, comment)	Yes	
23	Push alarms to users of Milestone Mobile(7)	Yes	
24	Recording capacity per device/day	Less than 1TB/ Unlimited	
25	Automatic initial configuration wizard	No	
26	Device scanning with device model detection	Yes	
27	Device replacement wizard	Yes	
28	Offline license activation	Yes	
29	Playback mode	Multi-Camera	
30	Recording search	Yes	
31	Time/date search	Yes	
32	Event/alert list in recording	Yes	
33	Adjust playback speed	Yes	
34	Digital zoom	Yes	

**Bidder's Sign and Stamp**



<b>65" 4K Display Monitor</b>			
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Stand Type	2 Pole (No-Stand available)	
2	Front Color	Ceramic Black	
3	Display Size	65"	
4	Display Resolution	3,840 X 2,160 (UHD)	
5	Brightness (cd/m2 )	400	
6	TV Reception	NTSC / ATSC / Clear QA	
7	Video HDR	Yes / Yes	
8	Audio Output	10W+10W	
9	Speaker System	2.0 ch	
10	SUPERSIGN SW COMPABILITY	Content Management Software (SuperSign CMS), Control and Monitoring Software (Control/Control+), Simple Editor	
11	SIGNAGE FEATURE	Crestron Connected® (Network Based Control), DPM (Digital Power Management), Time Scheduler, RTC (Real Time Clock), NTP sync timer, BEACON, Embedded CM (Contents Manager), Embedded GM	
12	SMART FEATURE	webOS 4.5, Smart Home (Launcher Bar), Web Browser, Pre-loaded App (YouTube only), Soft AP, Wi-Fi (802.11ac, Built-in type), Screen Share (Miracast), DIAL, Bluetooth Audio Playback, LG Sound Sync/bluetooth, Mobile Connection Overlay	
13	HOSPITALITY FEATURE	Public Display Mode, Lock Mode (Limited), Welcome Screen (Splash Image), Insert Image, IP Channel Manager, External Speaker Out (Int/Fixed, 3.5mm, Stereo, Single ended Type (GND, L+, R+), 1W with 8Ω), V-Lan Tag, RJP (Remote Jack Pack) Compatibility (Teleadapt/Guestlink (HDMI CEC)), Moving Picture Playback (SD/HD/Plus HD), Auto Off/Sleep Timer, Smart Energy Saving, Motion Eye Care	
14	MAINTENANCE FEATURE	USB Cloning, WOL, SNMP, Diagnostics (USB), Simplink (HDMI-CEC (1.4)), IR Out (RS-232C), Multi IR Code	
15	Set Side	HDMI In 2 (2.0), USB (2.0)	
16	JACK INTERFACE: Set Rear	HDMI In (HDCP (2.0)), RF In (tuner), AV In (Ethernet, SNMP)), External Speaker Out (3.5mm phone jack 0.01~1.00W and line out)),	
17	Voltage, Hz	AC 120V-230/ ~ 50/60 Hz	
18	Power Consumption	180.3 W	
19	Stand-by	Under 0.5 W	

**Bidder's Sign and Stamp**

**43" 4K Display Monitor**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Stand Type	2 Pole (No-Stand available)	
2	Front Color	Ceramic Black	
3	Display Size	43"	
4	Display Resolution	3,840 X 2,160 (UHD)	
5	Brightness (cd/m2 )	300	
6	TV Reception	NTSC / ATSC / Clear QA	
7	Video HDR (10 Pro / HLG)	Yes / Yes	
8	Audio Output	10W+10W	
9	Speaker System	2.0 ch	
10	SUPERSIGN SW COMPABILITY	Content Management Software (SuperSign CMS), Control and Monitoring Software (Control/Control+), Simple Editor	
11	SIGNAGE FEATURE	Crestron Connected® (Network Based Control), DPM (Digital Power Management), Time Scheduler, RTC (Real Time Clock), NTP sync timer, BEACON, Embedded CM (Contents Manager), Embedded GM	
12	SMART FEATURE	webOS 4.5, Smart Home (Launcher Bar), Web Browser, Pre-loaded App (YouTube only), Soft AP, Wi-Fi (802.11ac, Built-in type), Screen Share (Miracast), DIAL, Bluetooth Audio Playback, LG Sound Sync/bluetooth,	
13	HOSPITALITY FEATURE	Public Display Mode, Lock Mode (Limited), Welcome Screen (Splash Image), Insert Image, IP Channel Manager, External Speaker Out, Single ended Type (GND, L+, R+), 1W with 8Ω), RJP Compatibility ( HDMI CEC)), Moving Picture Playback (SD/HD/Plus HD), Auto Off/Sleep Timer, Smart Energy Saving, Motion Eye Care	
14	MAINTENANCE FEATURE	USB Cloning, WOL, SNMP, Diagnostics (USB), Simplink (HDMI-CEC (1.4)), IR Out (RS-232C), Multi IR Code	
15	Set Side	HDMI In 2 (2.0), USB (2.0)	
16	JACK INTERFACE: Set Rear	HDMI In (HDCP (2.0)), RF In (tuner), AV In RJ45 (Usage Purpose 2 (Ethernet, SNMP)), External Speaker Out (3.5mm phone jack (Spk-out fixed 0.01~1.00W and line out)),	
17	Voltage, Hz	AC 120V-230/ ~ 50/60 Hz	
18	Power Consumption (Typ.)	99.1 W & under 0.5 W	

**Bidder's Sign and Stamp**

<b>Work Station with Peripherals</b>			
<b>Sr. No.</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Processor	11th Generation Intel® Core™ i7-10400 (12MB cache, 6 cores, 12 threads, 2.90 GHz to 4.30 GHz Turbo)	
2	RAM	8 GB, 1 x 8 GB, DDR4, 2666 MHz	
3	Hard Drive	500GB SATA HDD & 480GB SSD , 7200 RPM, 3.5-inch, 64 MB cache	
4	Graphics Crad	nVidia GTX 660 - 2 GB Graphics Card	
5	Audio	Yes	
6	Network Adapter	10/100/1000 Slot	
7	Wireless	802.11ac 1x1 WiFi and Bluetooth	
8	Power Cord( Systems)	System Power Cord India 6A	
9	Chassis	EPA Chassis with TPM	
10	Optical Software	Cyberlink Media Suite Essentials without Media	
11	Serial Port/PS2 Adapter	No	
12	Operating System	Windows 11 Pro for business license version	
13	Microsoft Office	Ms 10 (Latest) or approved equivalent with free upgrades till validity of contract including comprehensive AMC period	
14	External Port	USB 4/8 port	
15	Anti-Virus	Norton (Latest) or approved equivalent with free upgrades till validity of contract including comprehensive AMC period	
17	Keyboard & Mouse	Entry Keyboard KB216 Black (QWERTY)	
	<b>LED Monitor-22" Flat Screen for Workstation</b>		
18	Resolution	HD resolution of 1280X1024 pixel	
19	Front Controls	Power On/Off with LED	
20	Video Connectors	VGA/SXGA Audio Inputs PC Audio (mini jack) Video Audio (2 Channel RCA – looping)	
21	Input	Composite Video / AV/VGA/HDMI/COMPONENT	
22	Power Input	AC Input- 100 to 240 V – 0.5 A,50/60 Hz	
25	Power Output	DC Output – 12VDC,0.5 A	
26	Display Mode	DVI-I/SXGA/XGA/VGA	
27	Display colors	16.7 Millions	
28	Emmissions	FCC: Part 15, Class B	
30	Immunity	CE: EN55022: 1998/A1:2000/A2:2003	
31	Saftey	UL/Cul:6500,EN60950-1:2001	
32	Warranty	Three years onsite	

**Bidder's Sign and Stamp**

<b>Industrial Grade 8 Port PoE Switch</b>			
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Ports	8 x 10/100/1000 Mb/s Gigabit Ethernet (RJ45) PoE+, 2 x 10/100/1000 Mb/s Gigabit SFP	
2	Protocols	IPv4, IPv6, Link Agrregation, Mac Filtering .	
3	Queuing	Strict Priority, Weighted Round Robin (WRR)	
4	Security Features	Attack Prevention, Radius Authentication, Storm Control	
5	RFC	RFC 4330	
6	Supported IEEE Standards	802.1ab, 802.1d, 802.1q/p, 802.1s, 802.1w, 802.1x, 802.3, 802.3ab, 802.3ad, 802.3af, 802.3an, 802.3at, 802.3az, 802.3u, 802.3x, 802.3z	
7	Forwarding Rate	26.78 Mpps	
8	Switching Bandwidth	36 Gb/s	
9	Priority Queues	4	
10	Packet Buffer	1.5 MB	
11	Power Draw	150.1 W (Max)	
12	AC Input Power	100 to 240 VAC, 50 / 60 Hz	
13	PoE Power Budget	120 W	
14	PoE per Port	30 W	
15	Power Supply Type	Internal	
16	Operating Temperature	23 to 122Â°F / -5 to 50Â°C	
17	Operating Humidity	10 to 90%	
18	Storage Temperature	-13 to 158Â°F / -25 to 70Â°C	
19	Storage Humidity	10 to 90%	
20	Noise Level	34.8 Db	
21	Cooling System	Passive	
22	Indicator Lights	Link/Activity, PoE, Speed, System	
23	Rack Form Factor	1 RU	
24	Warranty	3 Years	
25	Cooling System	Passive	
26	Indicator Lights	Link/Activity, PoE, Speed, System	
27	Rack Form Factor	1 RU	
28	Warranty	3 Years	

**Bidder's Sign and Stamp**

<b>Industrial Grade 4 Port Poe Switch</b>			
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Ports	4 x 10/100/1000 Mb/s Gigabit Ethernet (RJ45) PoE+	
		2 x 10/100/1000 Mb/s Gigabit SFP	
2	Protocol	IPv4	
		IPv6	
		Link Aggregation	
		MAC Filtering	
		Port Mirroring	
3	Queuing	Strict Priority, Weighted Round Robin (WRR)	
4	Security Features	DoS Attack Prevention	
		RADIUS Authentication	
		Storm Control	
5	Supported IEEE Standards	802.1ab, 802.1d, 802.1q/p, 802.1s, 802.1w, 802.1x, 802.3, 802.3ab, 802.3ad, 802.3af, 802.3an, 802.3at, 802.3az, 802.3u, 802.3x, 802.3z	
6	Forwarding Rate	26.78 Mpps	
7	Switching Bandwidth	36 Gb/s	
8	Priority Queues	4	
9	Packet Buffer	1.5 MB	
10	Power Draw	150.1 W (Max)	
11	AC Input Power	100 to 240 VAC, 50 / 60 Hz	
12	PoE Power Budget	120 W	
13	PoE per Port	30 W	
14	Power Supply Type	Internal	
15	Operating Temperature	23 to 122Â°F / -5 to 50Â°C	
16	Operating Humidity	10 to 90%	
17	Storage Temperature	-13 to 158Â°F / -25 to 70Â°C	
18	Storage Humidity	10 to 90%	
19	Noise Level	34.8 dB	
20	Cooling System	Passive	
21	Indicator Lights	Link/Activity, PoE, Speed, System	
22	Warranty	3 Years	

**Bidder's Sign and Stamp**

**Industrial Grade Hi POE injectors**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Maximum power deliverable	PSE 60 Watts	
2	Power available	PD 50 Watts	
3	Voltage Rating	48V	
4	Twisted pair Used	4-pair	
5	Supported Modes	END-Span+ Mid Span	
6	Supported Cabling	CAT 5E/6	
7	Warranty	3 Years	

**Bidder's Sign and Stamp**

<b>10 KVA UPS</b>			
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	PHASE	1 phase in / 1 phase out	
2	CAPACITY	10000 VA	
3	Nominal Voltage	230 Vac (1 Ph+ N)	
4	Voltage Range	160 Vac-300 Vac (1-phase) @ 100% load	
5	Frequency Range	46~54 Hz or 56~64Hz	
6	Power Factor	≥ 0.99 @ 100% load	
7	Output Voltage	208 **/220/230/240VAC	
8	AC Voltage Regulation (Batt. Mode)	± 1%	
9	Frequency Range (Synchronized Range)	46~54Hz or 56~64Hz	
10	Frequency Range (Batt. Mode)	50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz	
11	Current Crest Ratio	3:1 (max.)	
12	Harmonic Distortion	<math>\leq 3\%</math> THD(Linear load), <math>\leq 7\%</math> THD(Non linear load)	
13	AC Mode Efficiency	91%	
14	Battery Type	SMF	
15	Numbers	20	
16	Charging Current (max.)	40 Amps settable to 41/42/43/44/45/ Amps	
17	Charging Voltage	273 VDC ± 1% (Based on 20pcs bateries)	
18	LCD Panel	UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions	
19	Battery Mode ,Low Battery ,Overload,fault	Sounding	
20	Warranty	3 -year warranty	

**Bidder's Sign and Stamp**

<b>3 kVA UPS</b>			
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	PHASE	1 phase in / 1 phase out	
2	CAPACITY	3000VA	
3	Nominal Voltage	230 Vac (1 Ph+ N)	
4	Voltage Range	160 Vac-300 Vac (1-phase) @ 100% load	
5	Frequency Range	46~54 Hz or 56~64Hz	
6	Power Factor	≥ 0.99 @ 100% load	
7	Output Voltage	208 **/220/230/240VAC	
8	AC Voltage Regulation (Batt. Mode)	± 1%	
9	Frequency Range (Synchronized Range)	46~54Hz or 56~64Hz	
10	Frequency Range (Batt. Mode)	50 Hz ± 0.1 Hz or 60 Hz ± 0.1 Hz	
11	Current Crest Ratio	3:1 (max.)	
12	Harmonic Distortion	<math>\leq 3\%</math> THD(Linear load), <math>\leq 7\%</math> THD(Non linear load)	
13	AC Mode Efficiency	91%	
14	Battery Type	SMF	
15	Numbers	6	
16	Charging Current (max.)	12 Amps settable to 10/11/12/13 Amps	
17	Charging Voltage	273 VDC ± 1% (Based on 20pcs bateries)	
18	LCD Panel	UPS status, Load level, Battery level, Input/Output voltage, Discharge timer, and Fault conditions	
19	Battery Mode ,Low Battery ,Overload,fault	Sounding	
20	Warranty	3 -year warranty	

**Bidder's Sign and Stamp**



**Single Phase 15 KVA Servo Stabilizer**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Rating – 15 KVA Servo Stabilizer	2KVA to 20 KVA	
2	Input Voltage Range	a) 180V – 280V b) 160V – 280V c) 140V – 280V	
3	Nominal Output Voltage	230V	
4	Output Voltage Accuracy	± 1%	
5	Line Frequency Variation	47Hz-53Hz .	
6	Effect of Power Factor	None	
7	Wave Form Distortion	None added	
8	Control	Digital/Analogue	
9	Response Time	10 ms.	
10	Voltage Correction Rate 1. Air Cooled 2 Oil Cooled	25V / Sec. 15V/ Sec	
11	Warranty	3 -year warranty	

**Bidder's Sign and Stamp**

<b>42 U Netrack and Server Rack</b>			
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
	42 U Rack	42U Rack Frame/800X1000/Steel/Welded Rack	
	Adopter Kit	19" Adopter kit /42U/Loops/Black	
	Perforated Door -	Front Single, Rear Double door	
	Swing Handle	Swing Handle /Mechanical Lock / Three Point / Common Key/Die Cast Metal	
	Rack mount power distribution unit	1Ph, 230V, 32A, 50/60Hz, Zero U standard with 12 X Indian Round Pin 5/15A, 16A MCB X 2 Circuits- PDU Rating 7.3KVA/Bottom feed-3Mt/ Black/ Inlet Plug Not Installed	
	Cable Basket	Cable Basket/42U/300/Black	
	Horz. Cable	Horz. Cable Organiser/1U/ Channel On Front	
	Universal Rack	Ground Kit-Type 1	
	Mounting Hardware	CR (Pack of 20)	
	Fan	ITE / Rack Air Circulation module/Tower Mount/360CFM	
	Warranty	3 Years	

**Bidder's Sign and Stamp**

<b>9U Netrack and Server Rack</b>			
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	9 U Rack	9U Rack	
2	Adopter Kit	12" Adopter kit /9U/Loops/Black	
3	Perforated Door -	Front Single	
4	Swing Handle	Swing Handle /Mechanical Lock / Three Point / Common Key/Die Cast Metal	
5	Rack mount power distribution unit	horz. Cable Organiser/1U/ Channel On Front	
6	Cable Basket	Cable Basket/9U/	
7	Horz. Cable	Horz. Cable Organiser/1U/ Channel On Front	
8	Universal Rack	Ground Kit-Type 1	
9	Fan	ITE / Rack Air Circulation module/Tower Mount/360CFM	
10	Warranty	3 Years	

**Bidder's Sign and Stamp**

**Outdoor Armoured 6 core OFC Cable**

<b>Sr. No.</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Product Type	Fiber OSP cable	
2	Armor Type	Corrugated steel	
3	Cable Type	Loose tube	
4	Fibers per Subunit, quantity	6	
5	Filler, quantity	0	
6	Jacket Color	Black	
7	Subunit Type	Gel-filled	
8	Total Fiber Count	6	
9	Cable Length	2000 m   6,561.68 f	
10	Diameter Over Jacket	10 mm   0.394 in	
11	Jacket Material	High density polyethylene (HDPE)	
12	Minimum Bend Radius, loaded	200 mm   7.874 in	
13	Minimum Bend Radius, Unloaded	160 mm   6.299 in	
14	Tensile Load, short term, Maximum	1250 N   281.011 lb	
15	Cable Crush Resistance, maximum 3	30 N/mm   171.304 lb/in	
16	Fiber Type	OS2	
17	Attenuation, maximum	0.22 dB/km @ 1,550 nm   0.34 dB/km @ 1,310 nm	
18	Standards Compliance	ANSI/TIA-568.C.3   IEC 60794-1   TIA-492CAAB (OS2)	
19	Operating Temperature	20 °C to +70 °C (-4 °F to +158 °F)	
20	Cable Qualification Standards	Telcordia GR-20-CORE	
21	Fiber Type	OS2	
22	Attenuation, maximum	0.22 dB/km @ 1,550 nm   0.34 dB/km @ 1,310 nm	
23	Standards Compliance	ANSI/TIA-568.C.3   IEC 60794-1   TIA-492CAAB (OS2)	
24	Operating Temperature	20 °C to +70 °C (-4 °F to +158 °F)	
25	Cable Qualification Standards	Telcordia GR-20-CORE	

**Bidder's Sign and Stamp**

<b>OFC LC Pigtail</b>			
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Product Classification		
2	Product Type	Fiber pigtail, unjacketed	
3	Color, boot A	Blue	
4	Color, connector A	Blue	
5	Interface, Connector A	LC/UPC	
6	Jacket Color	Yellow	
7	Total Fibers, quantity	1	
8	Dimensions		
9	Cable Assembly Length, minimum (ft)	1	
10	Cable Assembly Length, maximum (ft)	23	
11	Cable Assembly Length, minimum (m)	1	
12	Cable Assembly Length, maximum (m)	7	
13	Mechanical Specifications		
14	Cable Retention Strength, maximum	2.00 lb @ 90 °   5.00 lb @ 0 °	
15	Fiber Mode	Singlemode	
16	Fiber Type	G.652.D   G.657.A1, TeraSPEED®	
17	Environmental Specifications		
18	Operating Temperature	(-10 °C to +60 °C (+14 °F to +140 °F))	
19	Environmental Space	Low Smoke Zero Halogen (LSZH)	

**Bidder's Sign and Stamp**

**Industrial Grade LC Media Converter With SFP**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Converter	Ethernet to optical fiber	
2	Compatible	Network video products	
3	Support	10/100/1000 Mbps	
4	Configuration	Reliable	
5	Slots	1 SPF & 1 Lan	
6	Environment Type	IN/OUT	
7	Type	Converter	
8	Mounting Type	DinRail	
9	Special Property	Extream Envioment	

**Bidder's Sign and Stamp**

**Single Mode Fiber Optic LC-LC Duplex Patch Chord**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Product Type	Fiber patch cord, duplex	
2	Color, boot A	Blue	
3	Color, boot B	Blue	
4	Color, connector A	Blue	
5	Color, connector B	Blue	
6	Interface, Connector A	LC/UPC	
7	Interface, Connector B	LC/UPC	
8	Jacket Color	Yellow	
9	Polarity	Pairs, flipped	
10	Total Fibers, quantity	2	
11	Cable Assembly Length, minimum (ft)	1	
12	Cable Assembly Length, maximum (ft)	999	
13	Cable Assembly Length, minimum (m)	1	
14	Cable Assembly Length, maximum (m)	999	
15	Diameter Over Jacket	1.6 mm   0.063 in	
16	Cable Retention Strength, maximum	11.24 lb @ 0 °   4.40 lb @ 90 °	
17	Fiber Mode	Singlemode	
18	Fiber Type	G.652.D   G.657.A1, TeraSPEED®	
19	Operating Temperature	10 °C to +60 °C (+14 °F to +140 °F)	
20	Fiber Mode	Singlemode	
21	Fiber Type	G.652.D   G.657.A1, TeraSPEED®	
22	Operating Temperature	10 °C to +60 °C (+14 °F to +140°F)	

**Bidder's Sign and Stamp**

**24 Port Wall Mount LIU Loaded**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Product Type	Fiber patch/splice panel	
2	Product Series	FMS	
3	Functionality	Patching   Splicing	
4	Body Style	Symmetrical	
5	Cable Exit Location	Rear, left side   Rear, right side	
6	Color	Black	
7	Color, front	Black	
8	Interface, front	LC	
9	Interface Feature, front	Standard	
10	Rack Type	EIA 19 in	
11	Rack Units	1	
12	Shelf Movement	Sliding	
13	Splice Trays Included, Quantity	1	
14	Splicing Type	Heat shrink, single fiber fusion	
15	Total Ports, quantity	24	
16	Fiber Mode	Singlemode	
17	Fiber Type	OS2	
18	Insertion Loss, maximum	0.3 dB	
19	Return Loss, minimum	45 dB	

**Bidder's Sign and Stamp**



**6 Port Wall Mount LIU Loaded**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Product Type	Fiber patch/splice panel	
2	Product Series	FMS	
3	Functionality	Patching   Splicing	
4	Body Style	Symmetrical	
5	Cable Exit Location	Rear, left side   Rear, right side	
6	Color	Black	
7	Color, front	Black	
8	Interface, front	LC	
9	Interface Feature, front	Standard	
10	Rack Type	EIA 19 in	
11	Rack Units	1	
12	Shelf Movement	Sliding	
13	Splice Trays Included, quantity	1	
14	Splicing Type	Heat shrink, single fiber fusion	
15	Total Ports, quantity	6	
16	Fiber Mode	Singlemode	
17	Fiber Type	OS2	
18	Insertion Loss, maximum	0.3 dB	
19	Return Loss, minimum	45 dB	

**Bidder's Sign and Stamp**

### 24 Port Manageable SFP Switch

SN	Feature	Specifications	Compliance (Y/N)
1	IOS	LAN Lite	
2	Forwarding bandwidth	28 Gbps	
3	Switching bandwidth	56 Gbps	
4	10/100/1000 Ethernet Ports	24	
5	Uplink Interfaces	4 x 1G SFP	
6	Fanless	Y	
7	DRAM	512 MB	
8	Flash memory	256 MB	
9	Dimensions (H x D x W)	1.73 x 9.45 x 17.5 in. (4.4 x 24 x 44.5 cm)	
10	Net Weight	6.61 lb (3.0 kg)	
11	Warranty	3 Years	

**Bidder's Sign and Stamp**

### Supply and Installation of 7 Ft. CAT 6 Patch Chord

SN	Feature	Specifications	Compliance (Y/N)
1	Regional Availability	Asia   EMEA   Latin America	
2	Product Type	Twisted pair patch cord	
3	Product Series	NPC	
4	Ordering Note	Cords < 1 m are valid elements for use in a channel or as an equipment interconnect but due to their limited length are not guaranteed to meet component compliance requirements that were developed to assess the quality of longer cords   Cords > 1 m are authorized for use in channels and are an effective standalone method used to connect active devices	
5	Product Number	CC6ZH	
6	ANSI/TIA Category	6	
7	Cable Type	U/UTP (unshielded)	
8	Conductor Type	Stranded	
9	Interface, Connector A	RJ45 plug	
10	Interface Feature, connector A	Standard	
11	Interface, Connector B	RJ45 plug	
12	Interface Feature, connector B	Standard	
13	Jacket Color	Black   Blue   Green   Orange   Red   Slate   White   Yellow	
14	Pairs, quantity	4	
15	Separator Type	Bisector	
16	Transmission Standards	ANSI/TIA-568.2-D   IEEE 802.3bt Type 4   ISO/IEC 11801 Class E	
17	Cable Assembly Length Range (m)	1 – 30	
18	Cable Assembly Length Range (ft)	1 – 100	
19	Cable Assembly Length Range (cm)	15 – 999	
20	Cable Assembly Length Range (in)	6 – 999	
21	Diameter Over Jacket	5.97 mm   0.235 in	
22	Compatible Conductor Gauge, stranded	24 AWG	
23	Nominal Velocity of Propagation (NVP)	69%	
24	Remote Powering	Fully complies with the recommendations set forth by IEEE 802.3bt (Type 4) for the safe delivery of power over LAN cable when installed according to ISO/IEC 14763-2, CENELEC EN 50174-1, CENELEC EN 50174-2 or TIA TSB-184-A	

25	Operating Temperature	20 °C to +60 °C (-4 °F to +140 °F)	
26	Relative Humidity	Up to 93%, non-condensing	
27	EN50575 CPR Cable EuroClass Fire Performance	Dca	
28	EN50575 CPR Cable EuroClass Smoke Rating	s2	
29	EN50575 CPR Cable EuroClass Droplets Rating	d2	
30	EN50575 CPR Cable EuroClass Acidity Rating	a1	
31	Environmental Space	Low Smoke Zero Halogen (LSZH)	
32	Flame Test Method	IEC 60332-1	
33	Safety Standard	C-Tick   UL 1863	

**Bidder's Sign and Stamp**

### CAT 6 UTP Cable

SN	Feature	Specifications	Compliance (Y/N)
1	Conductor	4 pair UTP cable 23 AWG Solid Bare Electrolytic Grade Copper	
2	Primary insulation	PVC	
3	Outer Sheath	FRPVC in ace. with IEC 61034, flame-retardant in ace. Cable jacket material FRLS PVC .	
4	Coating	Screened to ensure protection against EMI and for cross talk compliance.	
5	Application	Indoor I outdoor installation maximum permissible- 90mtrs for one point to another.	
6	Network support	Supports ultrahigh speed data networks such as Gigabit Ethernet (1000 Base-T and 1000 Base-TX) and beyond.	
7	IEEE 802.3ab	Zero-bit Error, UL verified	
8	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR for 4- connector Channel	
9	Manufacturer	All passive cabling must be from same OEM	
	Filler	PE	
10	Outer dia for primary UTP cable	nominal value $\varnothing 9.2 \pm 0.3$ mm	
11	Packing	Roll of 305 meters	
12	Impedance	100 Ohms + / - 15 ohms	
13	Performance characteristics to be provided along with bid	Attenuation, Pair-to-pair and PS NEXT, ELFEXT and PSELFEXT, Return Loss, ACR and PS ACR	
14	Delay Skew:	45ns Max	
15	Impedance:	100 $\pm$ 15 Ohms	
16	Current Rating:	1.5 A Max	
17	Conductor DC Resistance:	$\leq 93.5$ OHMS/1000MTR@20Degree C. MAX	
19	Voltage:	150VAC	
20	NVP	0.67	
21	Propagation delay:	536 nS/100M	
22	Mutual Capacitance:	5.6nF/100m Nominal	

23	Insulation Resistance:	500 MΩ Minimum	
24	Dielectric Strength:	1000 V RMS	
25	Contact Resistance:	10 mΩ Max	
26	Approvals	ISO/IEC 11801 ed. 2.2; TIA 568-C.2, ISO 9001; ISO14001	

**Bidder's Sign and Stamp**

**5/15 amp 12 Socket Power Distribution Unit**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Regional Availability	Asia	
2	Product Type	12 Socket PDU	
3	Product Series	5/15 Amp PDU	
4	<b>General Specifications</b>		
		5/15 Amp 12 Socket PDU	
		16Amp Single Pole MCB	
		Light Indicator	
		3 meter 2.5 Sq mm Power cord with 16 Amp TOP	
5	Warranty	3 Years	

**Bidder's Sign and Stamp**

**5/15 amp 6 Socket Power Distribution Unit**

<b>Sr. No.</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Regional Availability	Asia	
2	Product Type	6 Socket PDU	
3	Product Series	5/15 Amp PDU	
4	<b>General Specifications</b>		
		5/15 Amp 6 Socket PDU	
		Light Indicator	
		1.5 meter 2.5 Sq mm Power cord with 6 Amp TOP	
5	Warranty	3 Years	

**Bidder's Sign and Stamp**



<b>Outdoor Pole</b>			
<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Type	Self Support	
2	Material	Galvanised Steel	
3	Height	5 Mtrs as per site requirements	
4	Wind Speed	180 Kmph	
5	Stress	Within Acceptable Limit	
6	Foundation	1) The Foundation of pole to be designed for three types of soil namely soft, medium, hard/rocky	
		2) Guard against corrosion and soil erosion should be taken care of	
		3. The back filling should be done by proper compaction of soil in layers & should be done before erection M20 concrete shall be used. Material mixing and quality control of concrete shall be as per IS 456:2000, High Strength deformed steel bars of grade Fe 425 conforming to IS:456 shall be used. Spacing of bars shall be as per IS 2502 (1963)	
		4. Welding shall be done as per IS:9595 (1996)	
7	Earthing	50x3 mm GI strip should be bonded to the base of the pole & connected to earth pit/grid( If available in plant or if a new earth is to be provided same shall be provided by BMC) at the other end Value of the earth resistance shall be 0.5 ohms)	
8	Warranty	3 Years	

**Bidder's Sign and Stamp**

### Outdoor Junction Box

SN	Feature	Specifications	Compliance (Y/N)
1	Structure	Enclosure with 600W X 9U X 600D front CRCA sheet steel door with 2nos of cam locks with key, one mounting plate, cable entry. Cabinet should have 19" mounting angles to mount IT/ rack mounted equipments. Cabinet should have fan and filter on side to have better air ventilation. Accessories like mounting clamp (Wall / Pole clamp), PG Glands / Gland plats, mounting hardware. Material thickness should be Min 1.6mm Must be IP 65/66 Complains	
2	Mounting	On Camera Pole / Ground mounted on concrete base.	
3	Material	Door: CRCA steel door, all-round foamed-in PU seal, Mounting plate: Sheet steel. Cabinet should be construct with CRCA sheet	
4	Painting of Junction box	Painting/Coating: Primary Nano ceramic coating, Electrophoretic Dip Coating with 20-30 Microns and then Power Coating with 80-120 Micron	
5	Protection	Min. IP 65/66 or better suitable for operations of Field Equipment's	
6	Accessories	<b>Supply includes:</b> – Enclosure with door(s) – Mounting plate – Lock: 3 mm double-bit – JB with PDU's (should have 5 Nos sockets).	
	Approvals	UL, CSA, TÜV, DNV GL, Bureau Veritas, ISO 9001, EN ISO 14001, OHSAS 18001 approvals required	
8	Warranty	3 Years	

**Bidder's Sign and Stamp**

**3 Core x 2.5 sq. mm Armoured copper FRLS cable**

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Type of cable:	3 Core x 2.5 sq. mm Armoured copper FRLS cable	
2	Voltage Rating:	Up to and including 1100 volts	
3	Construction:	2.5 sq. mm multi stranded annealed bare Electrolytic	
4	Primary insulation:	Extruded PVC compound as per IS 5831 type C	
5	Inner Sheath:	Extruded PVC compound type ST2	
6	Outer Sheath:	Extruded PVC compound, type ST2	
7	Armour over inner sheath:	thickness>1.4mm, Galvanized steel	
8	Colour	Red, Black, Green	
9	Insulation resistance	100M ohm / KM @500V DC	
10	Strands	7 nos. with each strand of atleast0.68 mm Diameter	
11	Core Identification:3 Cores:	3-Cores: Red, Yellow & Blue	
12	Rip Chord	Shall be provided	
13	Warranty	3 Years	

**Bidder's Sign and Stamp**

### 50 mm Outdoor HDPE Pipe

<b>SN</b>	<b>Feature</b>	<b>Specifications</b>	<b>Compliance (Y/N)</b>
1	Type of Pipe:	Double wall Corrugated Pipes of HDPE.	
2	Outer Wall:	Being Corrugated imparts, excellent ring Stiffness (Compression Strength)	
3	Inner Wall:	Smooth allowing easy insertion of Cable	
4	Colour:	Black outer wall with non-black inner wall.	
5	Material:	High density polyethylene (HDPE)	
6	Specifications:	IS-16205 Part 24 TEC GR NO. GR/DWC-34/01SEP.2007	
7	Dimension:	50 MM OD X 38 MM ID	
8	Warranty	3 Years	

**Bidder's Sign and Stamp**

## CCTV Control Room at Borivali & Malad Reservoir

SN	Feature	Specifications	Compliance (Y/N)
1	Structure	4x2 inch - I Channel, Cross Member of 3x1.5 inch C-channel ,overall framework ,internal ,external cladding with insulation& other peripherals <b>SIZE: 7 Ft X 8 Ft</b> OR as per site conditions	
2	Roof	2 side slope roof of MS plane sheet welded with MS framestructure , adequate roof bows top inner decorated with 8MM thick MDF laminated board	
3	Cage Structure	MS frame work with square pipe & wall thickness 2X2square pip	
4	Outer wall	MS 1.2 MM Corrugated bended sheet welded on MS frame& 8 MM Thick MDF Board wiyh Laminated board .	
5	Internal wall	12MM Thick MDF Board with Laminated board.	
6	Door	Frame work by 3X6.5 square pipe external wall made by MS sheet & Inner wall decorated by 9MM laminated board. Handel and Hold Draft.( suitable lockable arrangement)	
7	Insulation	25 MM Thick glass wool shall be used for wall and 50MMthick glass wool to be provided for roof which will be rot proof, fire retardant , Non-hygroscopic and vermin proof	
8	Window	3' X 3' window shall be aluminum double shutter sliding type with black powder coating & grill, 4 mm thick glass shall be clear( With Monsoon Shade and safety grille	
9	Painting	Epoxy zinc phosphate primer and synthetic epoxy paints used for final 2 Coats	
10	Electrical	Concealed Electrical Copper cables & wiring suitable for 250volts 50	
11		HZ single phase AC power supply. Copper cables used areof 2.5 mm for lighting circuits. ISI mark & concealed PVC conduits insulated copper wire used for wiring in PVC conduit with small size distribution board with MCB protection and to separate with main Power supply	
12	Flooring	18 MM thickMarine Ply board with PVC vinyl carpet 1.2 mm Thick	
13	Bulked light	1 bulked light will be provided outside the cabin	
14	Provisions	Supply & Fixing of 1) 1.5 Tone Split AC with accessories- 02 nos , 2) LED Lights 18 W -2 nos , 3)Ceiling Mount Fan- 02 Nos , 4) Windwos- Sliding -2 nos with curtain, 5) Electrical Switch Boards /MCBs etc. as per site requirements	

**Bidder's Sign and Stamp**

## **SELECTIONS OF MATERIAL.**

1. All materials brought on the site of work and meant to be used in the same, shall be the best of their respective kinds and to the approval of the Engineer. The Engineer or his representative will accept that the materials are really the best of their kinds, when it is proved beyond doubt that no better materials of the particular kind in question are available in the market or higher version of material can be accepted with no additional /extra cost.
2. The Bidder shall obtain the approval of the Engineer of samples of all materials to be used in the works and shall deposit these samples with him before placing an order for the materials with the suppliers. The materials brought on the works shall conform in every respect to their approved samples. Fresh samples shall be deposited with the Engineer whenever the type or source of any material changes.
3. The Bidder shall check each fresh consignment of materials as it is brought to the site of works to see that they conform in all respects to the Specifications of the samples approved by the Engineer, or both.
4. The Engineer will have the option to have any of the materials tested to find out whether they are in accordance with the Specifications and the Bidder will bear all expenses for such testing. All B bills, vouchers and test certificates, which in the opinion of the Engineer or his representative are necessary to convince him as to the quality of the materials or their suitability shall be produced for his inspection when required.
5. Any materials that have not been found to conform to the specifications will be rejected forthwith and shall be removed from the site by the Bidder at his own cost within 24 hours.
6. The Engineer shall have power to cause the Bidders to purchase and use such materials from any particular source, as may in his opinion be necessary for the proper execution of the work.
7. Notwithstanding the source, the sand shall be washed using sand washing machine

**SE(BHR)**

**A. E.WW(M)WS/N-II**

**E. E. (M)MW**

# **SCOPE OF WORK**

The Hydraulic Engineer's Department of BRIHANMUMBAI MAHANAGARPALIKA

Supplies about 3850 M.L.D. of water daily to over 14 million citizens of Mumbai. The water is supplied to various localities directly from trunk mains or through reservoirs and tunnel stations. Pumping stations are installed at hilly areas where gravity supply is not possible.

The A.E.W.W.(M)W.S./North-II division carries out operation maintenance of various pumping station & reservoirs in 'P' & 'R' wards i.e. Western Suburbs / North. In addition to replacement & installation of new pumping stations where water supply is not fulfill is also carried out by this section.

- 1. The Bidder/Bidder shall visit the site to assess the quantum of the work prior to submitting their offer. It is essential on the part of Bidder to collect complete details of the nature of work to be carried out by visiting the site and by visiting office of addressee, as no claim shall be entertained later on account of ignorance of site conditions and detail required.**
- 2. The prospective Bidder shall submit the site inspection report along with the bid. This report includes detailing of cable requirement, type of camera, location of the camera, schematic diagram of CCTV Surveillance system (location of camera, server, work station, large display units, cable layouts, setting up of control cabin etc.) failing which the Bidder will be out rightly rejected without giving any further clarifications.**
- 3. The site inspection shall be strictly carried out in consultation with BMC's site engineer in order to understand the BMC's CCTV Surveillance requirement in better manner for the complete plant. This site inspection shall be preferably carried out before pre-bid meeting scheduled for this project. The site inspection report will be discussed in the pre-bid meeting.**
4. The allied accessories / components, if required to make CCTV Surveillance system functional, shall be considered and installed without any extra cost. These accessories / components shall be installed as per B.M.C.'s approved procedure mentioned in FME 2018. The Bidder shall make the arrangement for referring FME 2018 schedule of BMC on their own before submission of tender.
- 5. The necessary permission from concerned department wherever required, shall be sought by the successful Bidder.**
6. The successful Bidder shall visit the sites along with their engineers and submit the required architecture / plan / drawings of complete surveillance system & the necessary interfacing arrangements, types of cables, cabling arrangement for the transfer of video images, data,

signal etc. along with the specifications for the necessary approval from B.M. C.'s Engineer prior to starting their work.

7. The total work of CCTV surveillance system along with 3 years free maintenance period i.e. defect liability period is indivisible. The tender will be evaluated as a whole.
8. The Bidders shall set up state of art Control Room (CR) for professional CCTV Surveillance System in the Borivali & Malad Reservoir with necessary interior / civil work.
9. There shall be 2 Nos. of Split Air Condition units of 1.5 Ton each with required electric points & MCBs for ACs, LED Tube lights for sufficient illumination, requisite power points at least 4 Nos. of 15 amps and 4 Nos. of 5 amps, other electric points for Fans with 2 Nos. of ceiling fans in Control Room (CR). Any changes required for maintaining the aesthetics of Control Room shall be in the scope of the Bidders. The prospective Bidder shall consider the cost of repairs / civil work / interiors while bidding for the tender.
10. The Control Room (CR) shall be provided with sufficient office chairs, at least 2 Nos., which will match the aesthetics of each Control Room.
11. All the Cameras and allied equipment's shall be strictly as per BMC's technical specifications. **No Chinese brand cameras will be entertained / considered for fair competitiveness and organizational benefits. Any such proposals with Chinese brand equipments will be out rightly rejected. BMC have every right to demand Certificate of Origin for the cameras as well as their prime components.**
12. Third party certification for the various features of the cameras and their allied accessories / components may be demanded for the evaluation of the bid, if required.
13. **There shall be at least 90 days uninterrupted recording of the events which might be required for post event analysis.**
14. All the equipment of external fitment like camera enclosure (IP – 66 or equivalent) and relevant certificate shall be produced by the successful Bidder. The junction box (IP – 65 or equivalent), if any, shall be weather proof.
15. The Bidder shall submit the reference list of installation for similar products / components in the technical bid along with the copy of work order, satisfactory work completion certificate from the organizations where these equipments were installed.
16. The Bidder shall submit the information about the make, their technical datasheet along with codification and order code for the products which they are going to offer in the technical bid.
17. **Complete CCTV Surveillance System (All the cameras and allied accessories) shall be new and the copy of un-priced work order placed with OEM for the same and acceptance letter from the OEM shall be submitted.**



- 18. The Horn Speakers, 2 way MIC, Surge Protector, Radar , Cameras & NVRs shall be exclusively of one make only to avoid inter compatibility issue and support issue.**
- 19. All the passive components / allied accessories used for the structured cabling shall be exclusively of one make only and shall be as per the international standard TIA 568 B for networking through structured cabling. The same shall be necessarily certified by the Original Equipment Manufacturer (OEM) of structured cable.**
- 20. All the data / recording shall be fetched and stored in server located at Borivali & Malad Reservoir server room. The required accessories / components for fetching the data shall be considered while bidding.**
- 21. All the required software and firmware upgrades shall be the Bidder's responsibility without having any additional cost during the 3 years of free maintenance period i.e. defect liability period**
- 22. Guarantee shall consist of repairing or replacing defective parts free of cost during guarantee period.**
- 23. All the cables to be supplied (Data cable, Power cable, Video cable, OFC etc., if required) shall be new and of the fresh stock.**
- 24. All the cables (Data cable, Power cable, Video cable, OFC etc., if required) shall be laid down as per BMC's approved procedure mentioned in FME 2018. The Bidder shall make the arrangement for referring FME 2018 schedule of BMC on its own before submission of tender. The cable shall be terminated through lugs only. All excavated trenches, if any, shall be backfilled and reinstated properly.**
- 25. The payment of cable and conduit shall be made on actual laid basis and the quantity of cable given in the tender are only for estimate purpose.**
- 26. The prospective Bidders shall submit the authorization letter from the Original Equipment Manufacturer in the prescribed format for the technical back-up for**
- 27. participating in this tender for the contract period of Six (6) months, 3 years of free maintenance period i.e. defect liability period thereafter.**
- 28. Rack of appropriate size as per requirement of site along with trays for mounting Switches, DVR / NVR, Monitors (Large Display Units) etc., if any, shall be provided.**
- 29. Barbed wire shall be provided for all outdoor cameras which are mounted on the poles or otherwise to protect the cameras, cables etc. from nuisance of monkeys.**
- 30. During the Defect Liability Period i.e. Free Maintenance Period, maintenance personnel of the Bidder shall visit these locations of CCTV Surveillance System for routine as well as**

breakdown maintenance fortnightly or as per the requirement of BMC. Breakdown maintenance shall be attended within 48 hrs. from the time of logging the complaint.

31. If the problem is not rectified within 96 Hrs. from the time of logging the complaint, then penalty of Rs. 500/- per day per camera will be levied.
32. The successful Bidder shall impart sufficient hands on training to the BMC's security staff. The operator shall intimate to the respective security persons on duty if any untoward incident happens.
33. **The Bidder shall keep the complete CCTV Surveillance System in smooth working condition throughout the free maintenance contract period of 3 years.**
34. **The Bidder shall make his own arrangement for local conveyance throughout the free maintenance period of 3 years.**
35. All tools, tackles, testing equipments, skilled and unskilled manpower for the execution of contract are to be arranged by the successful Bidder.
36. While carrying out the work, if any damage is caused to any Municipal property, the same shall be made good by the Bidder as per the guidelines from the BMC engineer. The cost of re-instatement shall be borne by the Bidders.
37. The Bidder shall have service center and support / back-up office in Mumbai or Thane or Navi Mumbai or in MMRDA Region.
38. The work shall be carried out with good workmanship following standard Engineering practice. The Bidder shall depute the workmen of best knowledge of carrying out the work.
39. The Bidder shall provide "Identity Card" to all the work force at site.
40. After successful completion of surveillance system at each location, Bidder should hand over the full functional **CCTV System** to Security officer in charge.
41. After completion of entire work, one month tanning of cctv systems to be given to security personnel for the period of one month and then after as and when required till DLP.
42. The CCTV surveillance Systems to be monitor at cctv control room and main gate security cabin simultaneously.
43. All outdoor unit such as camera, radar etc shall be covered insurance against theft, damages etc for 3 years during DLP period it such incidence occur contractor shall replace within 7 days after reporting

## **General Conditions**

- 1) The Bidder is advised to visit the site to take actual measurements at the time of erection of the all the structure to avoid mismatch at site.
- 2) The Bidder is advised to visit the site before submitting the offer to get acquainted with the job and exact scope and nature of work. The negligence of scope of work will be to the account of Bidder.
- 3) All tools, equipment's, manpower, materials etc. shall be arranged by the successful Bidder at his own cost; however electricity & water is available at site shall be made available by BMC free of cost.
- 4) BMC will not be held responsible for any mishap happened to men, material of the Bidder. Bidder shall be held responsible for any mishap happening due to his own mistakes.
- 5) Any damage to Municipal property while carrying out said work shall be borne by Bidder.
- 6) The successful Bidder shall have to rectify defects/discrepancies observed / pointed out, if any by BMC's engineers, during commissioning / during guarantee period , at his own cost.
- 7) The successful Bidder shall carry out the work which is not included in the Specification and scope of work but required for satisfactory completion of work without claiming of any extra cost
- 8) The Bidder shall carry out the work with best workmanship with standard engineering practices under supervision of the engineer.
- 9) The successful Bidder shall carry out work on working days between 10.00 am to 05.00 pm
- 10) Bidder shall bear all the expenses to the S.G.N.P. forest department during inspection of site & execution of work

**S.E.(BHR)**

**AEWW(M)WS/N-II**

**E.E.(Maint.)M.W.**

**DATA SHEETS TO BE FILLED IN**  
**FOLLOWING INFORMATION TO BE FURNISHED BY THE BIDDER/BIDDERS**

List of following copies to be attached along with tender document.

<b>Sr. No.</b>	<b>Documents</b>	<b>Attached / not attached</b>
1	Work experience certificate (Single / Two/ Three)	
2.	Annual turnover for last three years	
3.	Manufacturer Authorization	
4.	EMD receipt (screen shot)	
5	GST Registration	
6	Bank Solvency	
7.	Partnership deed in case of joint stock Company. Power of attorney registered in BMC's. office in case of joint stock company	
8.	Liquid Assest	
9.	BMC / Govt. registration certificate	
10	PF & ESIC registration certificate	
11	Litigation History	
12	Undertaking for site situation	
13	Pan card with photo	
14	Tender form duly filled & signed	
15	Annexure A	
16	Best Price certificate	
17	Declaration cum indemnity bond (annexure C)	
18	Pre-contract integrity pact (Annexure B)	
19	Irrevocable undertaking on Rs 500 stamp paper	
20	Special annexure I	
21	Technical Compliances format to be fill (Total 37)	

**(NOTE : Offers received with incomplete information shall be treated as non-responsive.)**

**Bidder's Sign and Stamp**

**SECTION 10**

**FRAUD AND CORRUPT  
PRACTICE**

## **FRAUD AND CORRUPT PRACTICES**

- The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process. Notwithstanding anything to the contrary contained herein, the Authority may reject an Application without being liable in any manner whatsoever to the Applicant if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process.
- Without prejudice to the rights of the Authority under relevant Clause hereinabove, if an Applicant is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Bidding Process, such Applicant shall not be eligible to participate in any tender or RFQ issued by the Authority during a period of 2 (two) years from the date such Applicant is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.
- For the purposes of this Clause , the following terms shall have the meaning hereinafter respectively assigned to them:
  - A. **“corrupt practice”** means  
the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Bidding Process (for avoidance of doubt, offering of employment to, or employing, or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly, with the Bidding Process or the LOA or has dealt with matters concerning the Concession Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Bidding Process); or  
save and except as permitted under the relevant sub clause, engaging in any manner whatsoever, whether during the Bidding Process or after the issue of the LOA or after the execution of the Concession Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the

Concession Agreement, who at any time has been or is a legal, financial or technical adviser of the Authority in relation to any matter concerning the Project;

- B. “fraudulent practice”** means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process ;
- C. “coercive practice”** means impairing or harming or threatening to impair or harm, directly or indirectly, any person or property to influence any persons participation or action in the Bidding Process;
- D. “undesirable practice”** means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and
- E. “Restrictive practice”** means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Bidding Process.
- F.** If the Employer/Financier determines that the Bidder has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Employer may, after giving 14 days” notice to the Bidder, terminate the Bidder's employment under the Contract and expel him from the Site, and the provisions of relevant Clause shall apply as if such expulsion had been made.
- G.** Should any employee of the Bidder be determined to have engaged in corrupt, fraudulent, collusive, coercive, or obstructive practice during the execution of the Works, then that employee shall be removed in accordance with relevant Clause.

**For the purposes of this Sub-Clause:**

- i. “corrupt practice” is the offering, giving, receiving to soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
- ii. “another party” refers to a public official acting in relation to the procurement process or contract execution. In this context, “public official” includes Financer staff and employees of other organizations taking or reviewing procurement decisions.
- iii. “fraudulent practice” is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a

financial or other benefit or to avoid an obligation;

- iv. “collusive practice” is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
- v. “coercive practice” is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
- vi. “obstructive practice” is deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede the Financier investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
- vii. acts intended to materially impede the exercise of the Financers inspection and audit rights provided .
- viii. “party” refers to a public official; the terms “benefit” and “obligation” relate to the procurement process or contract execution; and the “act or omission” is intended to influence the procurement process or contract execution.
- ix. “parties” refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, noncompetitive levels.
- x. a “party” refers to a participant in the procurement process or contract execution.

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# **SECTION 11**

## **PRE BID MEETING**

## **PRE-BID MEETING**

Pre-bid meeting of the interested parties shall be convened at the designated date, time and place. A maximum of three representatives of each Applicant shall be allowed to participate on production of authority letter from the Applicant.

During the course of Pre-bid meeting, the Applicants will be free to seek clarifications and make suggestions for consideration of the Authority. The Authority shall Endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Bidding Process.

Pre bid meeting will be held at HE 's chamber 1<sup>st</sup> floor, Worli hub, worli, Mumbai.

### **12.1 Interpretation of e-Tender Document:**

- a) Bidder(s) shall examine the tender document and acquaint themselves to all conditions and matters affecting the cost of the works. If any Bidder(s) finds discrepancies or omissions in the Document or if in doubt about their meaning, he should address a query during pre-bid meeting.
- b) Any resulting interpretation of the tender document will be issued to Bidder(s) as an addendum. Verbal clarification obtained from any source shall not be binding on the Corporation.
- c) No Bidder(s) shall amend the text of any document except as may be necessary to comply with any addendum.

### **12.2 Clarification of e-Tendering Documents**

Pre-bid meeting (If proposed as per e-Tender notice)

- a) The Bidder or his authorized representative is allowed to attend a pre-bid meeting as per the date, time and venue mentioned in the tender notice/header data.
- b) The purpose of the pre-bid meeting will be to clarify issues and to answer questions on any matter that may be raised prior to the pre-bid meeting.
- c) Any Bidder requiring any clarification of the tender document and/or the works may submit his questions on A.E.W.W.(M.)W.SN-II's e-mail i.e. [aewwmwsn02.he@mcgm.gov.in](mailto:aewwmwsn02.he@mcgm.gov.in) ease note that all emails which will reach the inbox o n e d a y on or before meeting till 5.00 p.m. will be considered for pre-bid.

**SECTION –12**

**LIST OF APPROVED BANKS**

## **LIST OF APPROVED BANKS**

1. The following Banks with their branches in Greater Mumbai and in suburbs and extended suburbs up to Virar and Kalyan have been approved only for the purpose of accepting Banker's guarantee from 1997-98 onwards until further instructions.
2. The Bankers Guarantee issued by branches of approved Banks beyond Kalyan and Virar can be accepted only if the said Banker's Guarantee is countersigned by the Manager of a branch of the same Bank, within the Mumbai Limit categorically endorsing thereon that said bank-ers Guarantee is binding on the endorsing Branch of the bank within Mumbai limits and is liable to be on forced against the said branch of the Bank in case of default by the contrac- tor/supplier furnishing the bankers Guarantee.

### **List of approved Banks:-**

<b>A</b>	<b>S.B.I and its subsidiary Banks</b>
1	State Bank Of India.
2	State Bank Of Bikaner & Jaipur.
3	State Bank Of Hyderabad.
4	State Bank Of Mysore.
5	State Bank Of Patiyala.
6	State Bank Of Saurashtra.
7	State Bank Of Travankore.
<b>B</b>	<b>Nationalized Banks</b>
8	Allahabad Bank.
9	Andhra Bank.
10	Bank Of Baroda.
11	Bank Of India.
12	Bank Of Maharashtra.
13	Central Bank Of India.
14	Dena Bank.

15	Indian Bank.
16	Indian Overseas Bank.
17	<del>Oriental Bank Of Commerce.</del>
18	Punjab National Bank.
19	Punjab & Sindh Bank.
20	<del>Syndicate Bank.</del>
21	Union Bank Of India.
22	<del>United Bank Of India.</del>
23	UCO Bank.
24	Vijaya Bank.
24A	<del>Corporation Bank.</del>
<b>C</b>	<b>Scheduled Commercial Banks</b>
25	Bank Of Madura Ltd.
26	Bank Of Rajasthan Ltd.
27	Banaras State Bank Ltd.
28	Bharat Overseas Bank Ltd
29	Catholic Syrian Bank Ltd.
30	City Union Bank Ltd.
31	Development Credit Bank.
32	Dhanalakshmi Bank Ltd.
33	Federal Bank Ltd.
34	Indsind Bank Ltd.
35	I.C.I.C.I Banking Corporation Ltd.
36	Global Trust Bank Ltd.
37	Jammu & Kashmir Bank Ltd.
38	Karnataka Bank Ltd.

39	KarurVysya Bank Ltd.
40	Laxmi Vilas Bank Ltd.
41	Nedugundi Bank Ltd.
42	Ratnakar Bank Ltd.
43	Sangli Bank Ltd.
44	South Indian Bank Ltd.
45	S.B.I Corporation &Int Bank Ltd.
46	Tamilnadu Mercantile Bank Ltd.
47	United Western Bank Ltd.
48	Vysya Bank Ltd.
<b>D</b>	<b>Schedule Urban Co-op Banks</b>
49	Abhyudaya Co-op Bank Ltd.
50	Bassein Catholic Co-op Bank Ltd.
51	Bharat Co-op Bank Ltd.
52	Bombay Mercantile Co-op Bank Ltd.
53	Cosmos Co-op Bank Ltd.
54	Greater Mumbai Co-op Bank Ltd.
55	JanataSahakari Bank Ltd.
56	Mumbai District Central Co-op Bank Ltd.
57	Maharashtra State Co-op Bank Ltd.
58	New India Co-op Bank Ltd.
59	North Canara G.S.B. Co-op Bank Ltd.
60	Rupee Co-op Bank Ltd.
61	Sangli Urban Co-op Bank Ltd.
62	Saraswat Co-op Bank Ltd.
63	ShamraoVithal Co-op Bank Ltd.

64	Mahanagar Co-op Bank Ltd.
65	Citizen Bank Ltd.
66	Yes Bank Ltd.
<b>E</b>	<b>Foreign Banks</b>
67	ABM AMRO (N.Y.) Bank.
68	American Express Bank Ltd.
69	ANZ Grindlays Bank Ltd.
70	Bank Of America N.T. & S.A.
71	Bank Of Tokyo Ltd.
72	Bankindosuez.
73	BanqueNationale de Paris.
74	Barclays bank.
75	City Bank N.A.
76	Hongkong & Shanghai banking Corporation.
77	Mitsui Taiyokbe Bank Ltd.
78	Standard Chartered Bank.
79	Cho Hung Bank.

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# **SECTION –13**

## **APPENDIX**



**FORM OF TENDER**

To,  
The Municipal Commissioner for BMC  
Sir,

I/ We have read and examined the following documents relating to the work of

**“ Supply, Installation, Testing and Commissioning of CCTV Surveillance System at BHR, MHR, Mahaveer Nagar & Liberty Garden Tunnel under AEW(M)WS/North-II division.”**

- i) Notice inviting tender.
- ii) Directions to Bidders (General and special)
- iii) General condition of contract for M & E Work of the **BRIHANMUMBAI MAHANAGARPALIKA** as amended up to date.
- iv) Relevant drawings, if any.
- v) Specifications.
- vi) Special directions
- vii) Annexure A & B.
- viii) Bill of Quantities and Rates.

1A. I/We  
(full name in capital letters, starting with surname), the Proprietor/ Managing Partner/  
Managing Director/ Holder of the Business, for the establishment / firm / registered  
company, named herein below, do hereby offer to

.....  
.....  
.....

Referred to in the specifications and schedule to the accompanying form of contract of  
the rates entered in the schedule of rates sent herewith and signed by me/ us” (strike  
out the portions which are not applicable).

1B. I/We do here by state and declare that I/We, whose names are given herein below in  
details with the addresses, have not filled in this tender under any other name or under  
the name of any other establishment /firm or otherwise, nor are we in any way related  
or concerned with the establishment /firm or any other person, who have filled in the  
tender for the aforesaid work.”

2. I/We hereby tender for the execution of the works referred to in the aforesaid documents,  
upon the terms and conditions, contained or referred to therein and in accordance with  
the specifications designs, drawings and other relevant details in all respects.

**\* At the rates entered in the aforesaid Bill of Quantities and Rates.**

3. According to our requirements for payment of Earnest Money amounting to  
Rs. \_\_\_\_\_/- (Rs. In words \_\_\_\_\_ )

I/We have deposited the amount through online payment gateways with the C.E. of the  
Corporation not to bear interest.

4. I/We hereby request you not to enter into a contract with any other person/s for the

~~execution of the works until notice of non/acceptance of this tender has first been~~

communicated to me/us, and in consideration of yours agreeing to refrain from so doing I/we agree not to withdraw the offer constituted by this tender before the date of communication to me/us of such notice of non/acceptance, which date shall be not later than ten days from the date of the decision of the Standing Committee or Education Committee of the Corporation, as maybe required under the Mumbai Municipal Corporation Act, not to accept this tender.(Subject to condition 5 below).

- 5. I/We also agree to keep this tender open for acceptance for a period of 180 days from the date fixed for opening the same and not to make any modifications in its terms and conditions which are not acceptable to the Corporation.
- 6. I/We agree that the Corporation shall, without prejudice to any other right or remedy, be at liberty to forfeit the said earnest money absolutely, if.
  - a. I/We fail to keep the tender open as aforesaid.
  - b. I/We fail to execute the formal contract or make the contract deposit when called upon to do so.
  - c. I/we do not commence the work on or before the date specified by the Engineer in his work order.
- 7. I/We hereby further agree to pay all the charges of whatsoever nature in connection with the preparation, stamping and execution of the said contract.
- 8. ~~I/We further agree that, I/we shall register ourselves as "Employer" with the Bombay Iron and Steel Labour Board and fulfill all the obligatory provisions of Maharashtra Mathadi, Hamal and other Manual workers (Regulation of Employment and Welfare) Act 1969 and the Bombay Iron and Steel unprotected workers Scheme 1970.~~
- 9. "I/We..... have failed in the accompanying tender with full knowledge of liabilities and, therefore, we will not raise any objection or dispute in any manner relating to any action, including forfeiture of deposit and blacklisting, for giving any in-formation, which is found to be incorrect and against the instructions and directions given in this tender.
- 10. "I/We further agree and undertake that in the event it is revealed subsequently after the allotment of work/contract to me/us, that any information given by me/us in this tender is false or incorrect, I/We shall compensate the BRIHANMUMBAI MAHANAGARPALIKA for any such losses or inconvenience caused to the Corporation in any manner and will not resist any claim for such compensation on any ground whatsoever. I/we agree and undertake that I/we shall not claim in such case any amount by way of damages or compensation for cancellation of the contract given to me/us or any work assigned to me/us or is withdrawn by the Corporation,"

Address -

Yours faithfully,

.....

.....

**Bidder sign & Office stamp**

**Digital Signature of the Bidder or the Firm** Full Name and private residential address of all the partners constituting the Firm

1.....

2.....

3.....

4.....

5.....

A/c No.

.....

1. ....

Name of Bank

2. ....

.....

3. ....

Name of Branch

4. ....

.....

5. ....

Vendor No.

.....

1 .....

2.....

3.....

## Draft articles of agreement for Execution of Works

Tender / Quotation No:

Dated ..... 20...

Standing Committee Resolution No. .... of ..... / Mayor's/  
Municipal Commissioner's Sanction No. .... Dated.....contract for the carrying out work  
of Surveillance system during the period from ..... to

.....THIS AGREEMENT MADE ON THIS.....day

.....Month..... Year between M/S.....(

Partner / Proprietor's Full Name) in habitant/s of Mumbai, carrying on business at in Mumbai  
under the style and name

M/S.....for and behalf of  
himself/ themselves ,his / their heirs, executors, administrators and assigns (Hereinafter called '  
the Bidder/s')

of the FIRST PART and Shri/Smt.....the Dy.

Municipal Commissioner in which expressions are included unless such inclusion is inconsistent  
with the

context of meaning therefore include Dy. Municipal Commissioner and any officers of

**BRIHANMUMBAI MAHANAGARPALIKA** authorized by the Dy. Municipal Commissioner and shall also

include their successors & assign / assignee for the time being holding office, of the SECOND

PART and the BRIHANMUMBAI MAHANAGARPALIKA (Hereinafter called ' the corporation') of

the THIRD PART. WHEREAS the Municipal Commissioner for BMC has interallia deputed under

Section 56 and 56(b)of the BMC Act 1888 his powers functions and duties under the provisions

contained in Chapter III of the BMC Act 1888 to the Dy. Municipal Commissioner. AND

WHEREAS the Dy. Municipal Commissioner is pursuance of the power vested in him / her under

the provision of the BMC Act 1888 and in accordance with the provision of the said Act,

invited Tender for the work

of.....

..... and / or certain work mentioned in the schedule / specification here to annexed.

AND WHEREAS the Bidder/s has/have submitted tender for the said work and his/their said

tender was accepted by Municipal Commissioner with the approval of the Mayor/Standing

Committee/Education Committee of the corporation on the terms and conditions hereinafter

specified. AND WHEREAS the said Bidder/s has / have paid deposit of Rs...../-

(Rupees ..... ) in the office of

.....as Contract Deposit for the due and faithful performance

of this contract OR has / have furnished the General Undertaking and Guarantee for

Rs...../- (Rupees

.....) of Bank,

for the payment interallia of the said amount of the Contract Deposit in the office of

.....for the due and faithful performance of this contract. NOW

THESE PRESENTS WITNESS and it is hereby agreed and declared between and by the parties

hereto as follows:-

In this agreement words and expressions shall have the same meanings as are respectively  
assigned to them in the General Conditions of Contract for works hereinafter referred to. The  
following document shall be deemed to form and be read and construed, as part of this agreement  
viz.

a) The said E-Tender and Letter of Acceptance

- b) The drawings
- c) The Specifications
- d) General Conditions of Contract for Civil Works of BMC as amended up to date.
- e) Performance Security
- f) Appendices
- g) Any other document listed in the contract data as forming part of the contract.

In consideration of the payments to be made by the Commissioner to the Bidder as hereinafter-mentioned the Bidder hereby covenants with the Commissioner to complete the Works / Supply in all respects with the provision of the contract.

he commissioner hereby covenants to pay the Bidder in consideration of the competition of the works/supply the contract sum, at times and in the manner prescribed by the Bidder.

IN WITNESS WHERE of the parties hereto have caused their respective common seals to be hereto affixed (or hereunto set their respective hands and seals) the day and year above written. Signed and delivered by the Bidders

.....

.....

Trading under the name & style of Bidders

In the presence of .....

Full Name.....

Address .....

.....

Signed by the Director / Dy. MC

in the presence of ..... Director / Dy. MC

The common seal of the BRIHANMUMBAI MAHANAGARPALIKA was here into affixed on the

.....20..... in the presence of two Members of the Standing

Committee / Education Committee of the BMC

(1)..... (1).....

(2)..... (2).....

and in the presence of the Municipal Secretary. ....

**Municipal Secretary**

**E.E.(Maint.)M.W.**

**Dy. H.E.( Maint)**

**H.E.**

**Note: The successful bidder will have to pay for preparing contract documents, legal charges, and stamp duty And stationery charges as mentioned in section 6**

## BANKERS GURANTEE IN LIEU OF CONTRACT DEPOSIT

THIS INDENTURE made this \_\_\_\_\_ day of \_\_\_\_\_ BETWEEN  
THE \_\_\_\_\_ BANK incorporated under the English/Indian Companies Acts and  
carrying on business in Mumbai (hereinafter referred to as 'the bank' which expression shall  
be  
deemed to include its successors and assigns) of the first part  
~~inhabitants carrying on business at and \_\_\_\_\_ in Mumbai under the style~~  
name of Messer"s \_\_\_\_\_ (hereinafter referred to as 'the consultant') of the  
second part Shri. \_\_\_\_\_

THE MUNICIPAL COMMISSIONER FOR GREATER MUMBAI (hereinafter referred to as  
'the commissioner' which expression shall be deemed, also to include his successor or  
successors for the time being in the said office of Municipal Commissioner ) of the third part and  
THE BRIHANMUMBAI MAHANAGARPALIKA (hereinafter referred to as 'the Corporation') of  
the fourth part WHEREAS the consultants have submitted to the Commissioner tender for the  
execution of the work of "  
and the terms of such tender /contract require that the consultants shall deposit with the  
Commissioner as/contract deposit/ earnest money and /or the security a sum  
of Rs. \_\_\_\_\_ (Rupees  
\_\_\_\_\_) AND WHEREAS if and when any such tender is accepted by  
the Commissioner, the contract to be entered into in furtherance thereof by the consultants will  
provide that such deposit shall remain with and be appropriated by the Commissioner towards  
the Security - deposit to be taken under the contract and be redeemable by the consultants, if  
they shall duly and faithfully carry out the terms and provisions of such contract and shall duly  
satisfy all claims properly chargeable against them there under AND WHEREAS the consultants  
are constituents of the Bank and in order to facilitate the keeping of the accounts of the  
consultants, the Bank with the consent and concurrence of the consultants has requested the  
Commissioner to accept the undertaking of the Bank hereinafter contained, in place of the  
Bidders depositing with the Commissioner the said sum as earnest money and /or security as  
aforesaid AND WHEREAS accordingly the Commissioner has agreed to accept such  
undertaking NOW THIS AGREEMENT WITNESSES that in consideration of the premises, the  
Bank at the request of the consultants ( hereby testified ) UNDERTAKES WITH the  
commissioner to pay to the commissioner upon demand in writing , whenever required by him  
, from time to time, so to do, a sum not exceeding in the whole Rs. \_\_\_\_\_ (Rupees  
) \_\_ under the terms of the said tender and /or the contract .The B.G. Is valid up to

"Notwithstanding anything what has been stated above, our liability under the above guarantee is restricted to Rs. \_\_\_\_\_ only and guarantee shall remain in force up to unless the demand or claim under this guarantee is made on us in writing on or before all your right under the above guarantee shall be forfeited and we shall be released from all liabilities under the guarantee thereafter"

IN WITNESS WHEREOF

WITNESS(1) \_\_\_\_\_

Name and \_\_\_\_\_

address \_\_\_\_\_

WITNESS(2) \_\_\_\_\_

Name and \_\_\_\_\_ the duly constituted Attorney Manager

address \_\_\_\_\_

the Bank and the said Messer"s \_\_\_\_\_

\_\_\_\_\_ (Name of the Bank)

WITNESS(1) \_\_\_\_\_

Name and \_\_\_\_\_

address \_\_\_\_\_

WITNESS(2) \_\_\_\_\_

Name and \_\_\_\_\_

For Messer"s \_\_\_\_\_

address \_\_\_\_\_

have here into set their respective hands the day and year first above written.

**The amount shall be inserted by the Guarantor, representing the Contract Deposit in Indian Rupees.**

**PROFORMA FOR THE UNDERTAKING TO BE SUBMITTED BY THE  
BIDDER  
(ON THEIR LETTER HEAD)**

To,  
The Municipal Commissioner,  
Brihanmumbai Mhanagarpalika

Date:

Sub: \_\_\_\_\_

Sir,

I/We, have read the terms and conditions mentioned herein and agree to accept the same. Further the undersigned hereby undertake that -

1. ~~All Asphalt Works required to be done under the captioned contract work shall be got executed with the specified asphalt mixes manufactured in M.C.G.M. approved Asphalt Plants only.~~
2. ~~All the Paver blocks required for the Paver block works to be carried out under the captioned contract work shall be procured from the specified manufacturers approved with M.C.G.M.~~
3. ~~The R.M.C. works required to be done under the captioned contract work shall be got executed with the specified R.M.C. mixes supplied by M.C.G.M. approved R.M.C. plants only.~~
4. ~~All the pipes/ specials required if any for the works will be procured from the manufacturer approved with M.C.G.M only.~~
5. ~~All the M.S pipes/ specials required if any will be fabricated from B.I.S. approved Company/ I.S.O 9000 Certified Company, confirmed to I.S 3589, I.S 2062.~~
6. ~~All the Air valves, Sluice valves & the Butterfly Valves required if any, will be procured from the Company approved with M.C.G.M.~~
7. All the observations & instructions made by the quality assurance agency appointed if any for the tender work are binding on us and same will be complied immediately.

Yours Faithfully,

**Bidder's Sign and Rubber Stamp**



**ANNEXURE " A "**

**Name of Work: “ Supply, Installation, Testing and Commissioning of CCTV Surveillance System at BHR, MHR, Mahaveer Nagar & Malad Tunnel under AEWWS(M)WS/North-II division.”**

**1) Earnest Money**

- a) Name of Ward : AEWWS(M)WS North-II
- b) Estimated cost of Tender : **N.A. for Item rate basis tender**
- c) Earnest Money : **Rs. 3,02,900/-**

**2) Definition** : The Engineer for this work is  
**Hydraulic Engineer (H.E).**

**3) Security Deposit Amended**

- a) **Contract Deposit** : 2 % of the Contract Sum
- b) **Retention Money** : There is no Retention Money for M & E Work

**4) Completion Period** : 06 (Six) Months

**5) Defect Liability Period** : **Three Years ( 36 Months)**

**6) Payment Terms** : 100% against successful commissioning of SITC work at MCGM site & payment within 30 days after receipt of bill, but subject to NOC of Vig. Dept. if selected for Vig. Check.

**Signature of Tender Issuing Officer**

**Signature of Bidder**

Date: \_\_\_\_\_

**ANNEXURE "B"**  
**( On Rs. 500/- Stamp Paper)**

**PRE-CONTRACT INTEGRITY PACT**

The Bidder commits himself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of his bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commits himself to the following:-

1. The Bidder will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BMC, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the Contract.
2. The Bidder further undertakes that he has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favor, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BMC or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the Contract or any other Contract with the Government for showing or forbearing to show favor or disfavor to any person in relation to the Contract or any other Contract with the Government.
3. The Bidder will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
4. The Bidder will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
5. The Bidder, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BMC or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
6. The Bidder shall not use improperly, for purposes of competition or personal gain, or

pass on to others, any information provided by the BMC as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The Bidder also undertakes to exercise due and adequate care lest any such information is divulged.

7. The Bidder commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
8. The Bidder shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
9. The Bidder and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Bidding Process. Notwithstanding anything to the contrary contained herein, the Authority may reject an Application without being liable in any manner whatsoever to the Applicant if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice in the Bidding Process

For the purposes of this Clause 9, the following terms shall have the meaning herein after respectively assigned to them :

1. "fraudulent practice" means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Bidding Process ;
- 2."coercive practice" means impairing or harming or threatening to impair or harm, directly or indirectly, any person or property to influence any persons participation or action in the Bidding Process;
- 3."undesirable practice" means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Bidding Process; or (ii) having a Conflict of Interest; and
- 4."restrictive practice" means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Bidding Process.

**Signature of Bidder**

**ANNEXURE "C"**  
**UNDERTAKING-CUM-INDEMNITY BOND**  
**(On 500/- Stamp Paper)**

I, \_\_\_\_\_ of \_\_\_\_\_, do hereby declared and undertake as under.

1. I declare that I have submitted certificates as required to Executive engineer (Monitoring) at the time of registration of my firm/company \_\_\_\_\_ and there is no change in the contents of the certificates that are submitted at the time of registration.
2. I declare that I \_\_\_\_\_ in capacity as Manager/Director/Partners/Proprietors of \_\_\_\_\_ has not been charged with any prohibitory and /or penal action such as banning (for specific time or permanent)/de-registration or any other action under the law by any Government and/or Semi Government and/or Government undertaking.
3. I declare that I have perused and examined the tender document including addendum, condition of contract, specifications, drawings, bill of quantity etc. forming part of tender and accordingly, I submit my offer to execute the work as per tender documents at the rates quoted by me in capacity as \_\_\_\_\_ of \_\_\_\_\_.
4. I further declare that if I am allotted the work and I failed to carry out the allotted work in accordance with the terms and conditions and within the time prescribed and specified, BMC is entitled to carry out the work allotted to me by any other means at my risk and cost, at any stage of the contract.
5. I also declare that I will not claim any charge/damages/compensation for non-availability of site for the contract work at any time.
6. I declare that I will positively make the arrangements of the required equipment on the day of commencement or with respect to the progress of the work in phases, as per the instructions of site in charge.

**Signature of Bidder**

**The Municipal Commissioner,  
Brihanmumbai Mahanagarपालिका**

I/ We say that, BMC has also withheld the Retention Money from the R.A. Bills at the rate of \_\_\_% of the individual R.A. Bill, as security for due and faithful compliance of the terms and conditions of the Tender document/ Contract Agreement of the said contract work.

I/ We say that, I/ We am/ are aware about the circular issued by the State Government of Maharashtra, under No. संकिर्ण-1010/प्र.क्र.100/2020/व्यय12 dated 29.07.2020 in order to overcome the crises of Covid-19 pandemic.

I/ We say that, I/ We am/ are also aware about the latest circular under no. CA(Finance)/Project/21 dated 07.08.2020 issued by the BMC, in lieu of the aforesaid circular of the State Government, and in order to help/ exempt/ refund the Bidders, the contract security deposit/ retention money is restricted to 2% of the total contract cost, for completing the ongoing BMC works, within the prescribed time limit.

I/We say that, I/ We have gone through the aforesaid circular with Annexures therein issued by BMC and I/We agree to the said reduction in Contract Deposit amount/ Retention Money deposit, at offset rate as per working given in the aforesaid circular of BMC.

I/ We say that, due to said reduction in Contract Deposit amount/ Retention Money, I/ We got the financial benefits and hence, hereby agree to give BMC, the offset in contract rate (\_\_\_\_\_) as accepted by BMC while allotting the contract work to me/ us.

I/ We hereby authorize BMC to reduce the contract rate (\_\_\_\_\_) from \_\_\_\_\_ to \_\_\_\_\_ and further agree to give the said offset, even if any changes in the tax structure.

I/We say and undertake that, in future if any saving incurred in contract period / contract sum then as per said circular and I/we am/are ready to give consent to recover the entire/balance off set amount from my Final bill or my final dues pending with BMC.

I/ We hereby submit my/ our Undertaking-Cum-Indemnity bond, to abide by the said circular and Annexures therein issued under no. CA(Finance)/Project/21 dated 07.09.2020.

I/ We am/are aware that the suspension or revocation or termination of this Contract Agreement, for any reason whatsoever shall not prejudice or affect any claim or demand whatsoever of the Municipal Commissioner or any authority of the BMC hereunder, nor shall I/ We be entitled in the event of the suspension or revocation of this Contract Agreement to any refund of any payment whatsoever made by me/ us hereunder.

I/ We hereby declare and indemnify save and harmless the BMC, its officers, servants

and agents and the Municipal Commissioner from and against all actions, acts, costs, suits, claims, damages, demands of any nature and kind whatsoever, which may be instituted claimed or made against the BMC, its officers, servants and agents and the Municipal Commissioner by any person or persons, any third party or legal entity by reasons of the BMC and/ or the Municipal Commissioner having reduced the Contract Deposit amount/ Retention Money deposit and I/ We reduced the contract rate (\_\_\_\_\_) from \_\_\_\_\_ to \_\_\_\_\_.

I/ We say that, this Undertaking-cum-Indemnity Bond are and shall be deemed to form part of the Contract Agreement dated \_\_\_\_\_ and shall be read and construed to be part of the Contract Agreement \_\_\_\_\_ and violations of any of the terms and condition of the aforesaid Undertaking-cum-Indemnity Bond will be treated as breach of the Contract Agreement dated \_\_\_\_\_ and will be dealt accordingly.

I/ We say and undertake that I/ We shall be liable to civil as well as criminal prosecution in the event information submitted by me/ us are found to be fake/ false and/or incorrect and in such case not only the Security Deposit/ Retention Money paid by me/ us shall be forfeited by BMC, but BMC shall also be entitled to initiate appropriate legal/ penal action against me/ us.

I/ We say that the Undertaking-Cum-Indemnity bond is binding on me/ us my/ our legal heirs/ executors, administrators, successors and assigns.

I/ We hereby undertake that the copy of the Aadhar card and/or Pan Card/ Registration Certificate submitted towards my/ our identification belongs to me/ us.

I/ We state on solemn affirmation that whatever stated herein above is true to my/ our own knowledge and I/ We believe the same to be true.

Place :-

Date :-

SIGNED SEALED AND DELIVERED )

BY THE WITHINNAMED )

\_\_\_\_\_ )

In the presence of )

1. \_\_\_\_\_ )

2. \_\_\_\_\_ )

**OR**

SIGNED, SEALED AND DELIVERED )

By the within named )

M/s. \_\_\_\_\_ )  
By its sole Proprietor )  
Shri. \_\_\_\_\_ )  
In the presence of )  
1. \_\_\_\_\_ )  
2. \_\_\_\_\_ )

**OR**

SIGNED SEALED AND DELIVERED )  
By the within named  
M/s. \_\_\_\_\_ )  
Through its Partner )  
Shri. \_\_\_\_\_ )  
In the presence of )  
1. \_\_\_\_\_ )  
2. \_\_\_\_\_ )

**OR**

THE COMMON SEAL OF THE )  
M/s. \_\_\_\_\_ )  
has been hereunto affixed pursuant )  
to the resolution passed by the )  
Board of Directors of the above )  
named company in their Meeting )  
held on \_\_\_\_\_ )  
In the presence of )  
1. \_\_\_\_\_ )  
2. \_\_\_\_\_ )  
The Directors of the Company who have )  
in token thereof set their hand hereunto )  
In the presence of )  
1. \_\_\_\_\_ )  
2. \_\_\_\_\_ )

**OR**

SIGNED SEALED AND DELIVERED )  
By the within named )  
M/s. \_\_\_\_\_ )

a Joint Venture/ Consortium of )  
M/s. \_\_\_\_\_ and )  
M/s. \_\_\_\_\_ )  
Through its Authorized Signatory )  
Shri. \_\_\_\_\_ )  
In the presence of )  
1. \_\_\_\_\_ )  
2. \_\_\_\_\_ )

**Note:**

In case of Applicant being Partnership Firm/ Company, copy of Power of Attorney authorizing one of the partner/ director to sign on behalf of the firm/ company shall be insisted upon.

Identified by Me

Before Me,



**Annexure- D**  
**Rate Analysis**

**Item Description -**

<b>Sr. No.</b>	<b>Description of rate analysis Parameters</b>	<b>Unit</b>	<b>Quantity</b>	<b>Rate</b>	<b>Amount</b>
1	Basic Material (Rate should be inclusive of all taxes)				
2	Machinery Hire Charges				
3	Labour Type		(Labour components)		
4	Total of all components				
5	Overhead & Profit 15% on 4				
6	Total Rate (4+5)				
7	Per unit rate				

**Bidder's Sign and Stamp**

# Annexure-E

(Irrevocable Undertaking)

**Subject:-**

**Bid No.:-**

**(On Rs.500/- Stamp Paper with Notary)**

I Shri / Smt. ----- aged ----- years Indian Inhabitant. Proprietor / Partner/ Director of M/s----- resident at ----- do hereby given Irrevocable undertaking as under;

1) I say & undertake that as specified in section 171 of CGST Act 2017, any reduction in rate of tax on supply of goods or services or the benefit of input tax credit shall be mandatorily passed on BMC by way of commensurate reduction in prices.

2) I further say and undertake that I understand that in case the same is not passed on and is discovered at any later stage, BMC shall be at liberty to initiate legal action against me for its recovery including, but not limited to an appeal to the Screening Committee of GST Counsel.

3) I say that above said irrevocable undertaking is binding upon me/ my Partners/company/ other directors of the company and also upon my/our legal heirs, assignee, Executor, administrator etc.

4) If I fails to compliance with the provisions of the GST Act, I shall be liable for penalty/punishment or both as per the provisions of GST Act.

Whatever has been stated here in above is true & correct to my/our own knowledge& belief. Solemnly affirmed at DEPONANT this day of BEFORE ME Interpreted Explained and Identified by me

**Bidder's Signature with full name & address with rubber stamp**

**Annexure – “F”  
(UNDERTAKING FOR SITE VISIT)**

I \_\_\_\_\_ Proprietor/Partners/Directors having my/our office  
address \_\_\_\_\_

\_\_\_\_\_ do hereby state & undertake as follows.

I say that I have submitted my tender for the work of  
\_\_\_\_\_  
\_\_\_\_\_

Having Bid Invitation No. \_\_\_\_\_ for the BRIHANMUMBAI MAHANAGARPALIKA  
I affirm that , I have inspected the site of work before the submission of tender on  
date \_\_\_\_\_ & reckoned all probable difficulties as could be reasonably  
foreseen by us as  
Experience Bidder. This is in pursuance of the relevant provision in this behalf in the conditions  
of contract which shall be binding on us.

**Place :**

**Dated :**

**Proprietor/Partners/Directors/POA Holder  
(Seal of Firm/Company)**

Identified by me,

BEFORE ME

**(Site Engineer)**

**Annexure – “G”**

**Irrevocable Undertaking**

(on Rs. 500/-Stamp Paper)

I Shri. / Smt. ....aged .....years Indian Inhabitant.  
Proprietor / Partner/Director of M/s. ....resident  
at.....do hereby give  
Irrevocable undertaking as under:

- 1) I say I undertake that as specified in section 171 of CGST Act, 2017, any reduction in rate of tax on supply of goods or services or the benefit of input tax credit shall be mandatorily passed on to BMC by way of commensurate reduction in prices.
- 2) I further say and undertake that I understand that in case the same is not passed on and is discovered at any stage, BMC shall be at liberty to initiate legal action against me for its recovery including, but not limited to, an appeal to the Screening Committee of GST Counsel.
- 3) I say that above said irrevocable undertaking is binding upon me/my partners/company/other Directors of the company and also upon my four legal heirs, assignee, executor, administrator etc.
- 4) If I fail to compliance with the provisions of the GST Act, I shall be liable for penalty / punishment or both as per the provisions of GST Act.

Whatever has been stated here in above is true & correct to my / our own knowledge & belief.

solemnly affirmed at  
This day of

DEPONANT

BEFORE ME

Interpreted Explained and Identified by me.

**Annexure – “H”**

**MANUFACTURERS AUTHORISATION CERTIFICATE  
(In case of bidder who are authorized dealers of manufacturer)**

No. : \_\_\_\_\_

Date : \_\_\_\_\_

To,

Municipal Commissioner,  
Municipal Corporation of Greater Mumbai,  
Mumbai

Sub : Tender for \_\_\_\_\_  
\_\_\_\_\_

Tender No. \_\_\_\_\_ dated \_\_\_\_\_ Due Date \_\_\_\_\_

Dear Sir,

We are established and reputed manufacturer of ..... do hereby say that.

- a) M/s. ....(Name and address) are our authorized Agents / distributors and we have authorized them to represent us to tender, negotiate and conclude the contract for the above goods, manufactured by us, with you for the above tender.
- b) We will accept the responsibility for the satisfactory execution of orders placed on the above said authorized agents/distributors.
- c) We will provide requisite inspection and testing facilities as and when required by BMC at our factories before finalization of tender and / or in respect of orders placed on said authorized agents/distributors.
- d) The price quoted by the said authorized agents/distributors for this tender is reasonable and is not higher than what we would have quoted, had we participated in this tender.
- e) The challan prepared by the agents/ distributors would be accompanied by a certificate from us certifying that the stores covered under the challan have been manufactured by us.
- f) The stores offered and supplied by the said agent / distributor would bear our trade mark.
- g) We will be responsible for the contractual obligations related to quality aspects, replacement of items, making available sufficient quantity as and when required etc during the contract period which includes DLP period of 3 years.
- h) Our details are as under: :
  - i) Business Address:-
  - ii) Reg. Office Address:-
  - iii) Location of Manufacturing Unit - iv) Tel. No.:-
  - v) e-mail ID:-
  - vi) Fax No.:-

Yours faithfully,

Name of signatory Stamp

(This letter should be on letterhead of the manufacturer and should be signed by a person competent to bind the manufacturer.)

**PROFORMAS :**

**PROFORMA-I**

The list of similar works as stated in para 'A' of Post qualification during last five Years –

<b>PROFORMA-I</b>					
Sr. No.	Name of the Project	Name of the employer	Stipulated date of completion	Actual date of completion	Actual Cost of work done
1	2	3	4	5	6

**NOTE:**

- j. Scanned Attested copies of completion/performance certificates from the Engineer-in- Charge for each work should be annexed in the support of information furnished in the above proforma.
- k. Works shall be grouped financial year-wise.

**PROFORMA- II**

Yearly turnover of Works during the last three years.

<b>PROFORMA- II</b>					
Sr. No.	Financial year	Annual Turnover of Works	Updated value to current year	Average of last 3 years	Page No.
1					
2					
3					
Total					

**NOTE:** The above figures shall tally with the audited balance sheets uploaded by the tenderers duly certified by Chartered Accountant.

**PROFORMA- III**

**At least similar work, as stated in para 'A' of Post qualification,.**

<b>PROFORMA- III</b>							
Name of the Project	Name of the Employer	Cost of the Project	Date of is-sue of work Order	Stipulated Date of Completion	Actual Date of Completion	Actual cost of work done	Remarks explaining reasons for delay, if any
1	2	3	4	5	6	7	8

**Note:** Scanned Attested copies of completion/performance certificates from the Engineer-in- charge for each work should be annexed in support of information furnished in the above proforma.

**PROFORMA- IV**

**PERSONNEL:**

<b>PROFORMA- IV</b>					
Sr. No.	Post	Name (Prime Candidate/ Alternate)	Qualification	Work Experience	
				No. of Years	Name of Projects
1					
2					
3					
4					

**NOTE:** Scanned Attested copies of qualification certificates and details of work experience shall be submitted /uploaded.

**MACHINERY: (for special work only)**

<b>PROFORMA- V/A</b>			
Sr. No.	Equipment	Number	Owned/Leased/Assured access
1	2	3	4

  

<b>PROFORMA- V/B</b>			
Sr. No.	Equipment	Number	Owned
1	2	3	4

~~**Note:** The tenderer(s) shall furnish/upload the requisite Scanned Attested documents of ownership/leased of machineries. The undertaking from the suppliers will not be accepted.~~

**PROFORMA - VI / A**

**Details of Existing Commitments and ongoing works –**

<b>PROFORMA - VI / A</b>							
Description of work	Place	Contract No. & Date	Name & Address of employer	Value of Contract in Rs.	Scheduled date of completion	Value of work remaining to be completed	Anticipated Date of completion
1	2	3	4	5	6	7	8

~~**Note:** Scanned Attested copies of completion/performance certificates from the Engineer-in- Charge for each work should be annexed in the support of information furnished in the above proforma.~~

**PROFORMA - VI / B**

**Details of works for which bids are already uploaded –**

<b>PROFORMA - VI / B</b>						
Description of work	Place	Name & Addresses of employee	Value of Contract in Rs.	Time Period	Date on which decision is expected	Remarks
1	2	3	4	5	6	7

~~**Note:** Scanned Attested copies of certificates from the Engineer-in-charge for each work shall be annexed.~~



**C) PROFORMA- III**

At least similar work, as stated in para, "A" of Post qualification,

PROFORMA- III							
Name of the Project	Name of the Employer	Cost of the Project	Date of issue of work Order	Stipulated Date of Completion	Actual Date of Completion	Actual cost of work done	Remarks explaining reasons for delay, if any
1	2	3	4	5	6	7	8

**Note:** Scanned Attested copies of completion/performance certificates from the Engineer-in-charge for each work should be annexed in support of information furnished in the above proforma.

**D) PROFORMA- IV****PERSONNEL:**

PROFORMA- IV					
Sr. No.	Post	Name (Prime Candidate (Alternate)	Qualification	Work Experience	
				No. of Years	Name of Projects
1	Project Manager				
2	Quality Control Engineer				
3	Site Engineer				
4	Site Supervisor				

**NOTE:** Scanned Attested copies of qualification certificates and details of work experience shall be submitted /uploaded.

**E) ~~PROFORMA-V~~**

**MACHINERY: As applicable**

**a) For Special work**

**~~PROFORMA-V/A~~**

Sr. No.	Equipment	Number	Owned/Leased/Assured
1	2	3	4

**~~PROFORMA-V/B~~**

Sr. No.	Equipment	Number	Owned
1	2	3	4

**Note:** The Bidder(s) shall furnish/upload the requisite Scanned Attested documents of owner-

ship/leased of machineries. The undertaking from the suppliers will not be accepted.

**b) For Routine work**

The Bidder(s) to qualify this bid shall either own equipment, in full working order, as listed below, or must demonstrate that based on known commitments, they will be available for timely use in the proposed contract as specified in Equipment Capability

**~~PROFORMA-V/C~~**

Sr. No	Equipments owned / access to	Requirements (No)	RTO Vehicle nos. /
1	2	3	4
01	Pumps for dewatering		
02	Submersible pumps for		
03	Rock breaker with compressor		
04	Pipe		
05	Ratchet Drilling machine.		
06	Roller Vibratory Min. 10T		
07	Welding		
08	Compresso		
09	Transit Mixer (Tilted)		
10	J.C.B.		
11	Excavator / Poclain		
12	Dumper / Trucks 8 Cu.m		
13	Dumper / Trucks 4 Cu.m		
14	C.C.T.V. Camera		
15	Mobile D.G.set		
16	Plate Vibrator		

**Note:** The Bidder(s) shall furnish/upload the requisite Scanned Attested documents of ownership / leased of machineries. The undertaking from the suppliers will not be accepted.

**F) PROFORMA – VI**

Details of Existing Commitments and ongoing works –

PROFORMA - VI / A							
Descripti on of work	Place	Contract No. & Date	Name & Ad- dresses of employer	Value of Contract in Rs.	Scheduled date of completion	Value of work remaining to be completed	Anticipated Date of completion
1	2	3	4	5	6	7	8

**Note:** Scanned Attested copies of completion/performance certificates from the Engineer-in- Charge for each work should be annexed in the support of information furnished in the above pro-forma.

Details of works for which bids are already uploaded –

PROFORMA - VI / B						
Descriptio n of work	Place	Name &Addresses of employee	Value of Contract in Rs	Time Period	Date on which decision is expected	Remarks
1	2	3	4	5	6	7

**Note:** Scanned Attested copies of certificates from the Engineer-in-charge for each work shall be annexed.

**G) PROFORMA VII**

**~~Maximum Quantity of total Pavement Quality Concrete (M35 or richer mix) on volumetric basis in Cu.m, completed in one single contract during the last seven(7) financial /calendar years~~**

<del>Year</del>	<del>Name of the Works</del>	<del>Name of the Employers</del>	<del>Quantity of Concrete (M 35 or richer mix) (Cum)</del>	<del>Remarks</del>
1	2	3	4	5

**H) PROFORMA VIII**

The bidder to qualify this bid shall own or have assured access (through hire, lease, and other commercial means) in full working order, to the equipment as listed below, and must demonstrate that based on known commitments, they will be available for timely use in the proposed contract.

<b>Sr. No</b>	<b>Equipment</b>	<b>N</b>
<b>0</b>	<b>2</b>	<b>3</b>
1	Computerized Batch mix Asphalt Plant Capacity min. 80 M.T per hr. with valid registration of M.C.G.M.	
2	R.M.C Plant (computerized) – Capacity 60 Cu.m per hr. (or two nos. of 30 Cu.m. per hr. in lieu of 60 cum per hr.) with valid registration of M.C.G.M.	
3	Paver Blocks (BIS Certified) manufacturing factory approved by M.C.G.M with valid registration.	

**NOTE:** a) The minimum suggested major equipments to begin with for execution of works in accordance with the prescribed construction schedule are shown in the above list. The bidder shall mobilize prior to bidding of this bid and mandatorily during the contract implementation, additional equipment as directed by Engineer-in-charge.

**I) PROFORMA IX**

Information on Litigation History in which the bidder is involved.

<b>Other Party (ies)</b>	<b>Employer</b>	<b>Cause of Dispute</b>	<b>Amount involved</b>	<b>Remarks showing Present</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

**Note:** Scanned Attested copies of completion/performance certificates from the Engineer-in-charge for each work should be annexed and uploaded.

**J) PROFORMA – X**

Information of certificate issuing authorities

<b>Sr.No.</b>	<b>Employer/Name of issuing Authority</b>	<b>Designation of issuing Authority</b>	<b>E-mail ID of issuing Authority</b>	<b>Contact numbers of issuing Authority</b>

K) ~~PROFORMA-XI~~: DELETED.

**INFORMATION ABOUT INSTALLATION OF SCADA ETC.**

MANDATORY REQUIREMENT FOR REGISTERED/ASSURED PLANTS REQUIRED AND TO ALL MACHINERIES OWNED/ASSURED REQUIRED.

**MANDATORY REQUIREMENT:**

<i>Particulars</i>	<i>Whether Installed</i>	<i>Copies of Certification of installer com-</i>
	<i>Yes / No</i>	<i>Yes/</i>
<i>1</i>	<i>2</i>	<i>3</i>
Intelligent Compaction system - compatible for L&T, Escort, JCB, Greaves or equivalent		
Agent Software for Compactor		
Batch Mix Plant SCADA Automation		
Software Agent Batch Mix Plant connectivity		
Software agent RMC plant connectivity		
Vehicles Tracking System with automation loading		
Vehicles Tracking System - Per month Subscription		
SCADA Automation for ICPB Factory		

**Note:- Intending bidder shall give undertaking to provide the information on SCADA as required in PROFORMA – X.**

--- X ---- X ---- X ----