

Addendum 1				
MUMBAI METRO RAIL CORPORATION LIMITED				
NIT Ref. No.: MMRCL/Planning/NIT/K2/2024/01				
Name of Work:		Construction of Commercial Building at Kalbadevi (K2) on CS No. 663, 664, 665, 1/665, 666, 667, 669, 671 & 774 of Bhuleshwar Division in 'C' Ward for Rehabilitation of Metro Line 3 PAP's at Kalbadevi & Girgaon.		
Sr. no.	Volume	Section	Clause No.	New Clause
1	3	8	Securities & other forms	Forms for securities & other forms are enclosed.
2	3	7	Schedule C – Item wise Specifications	Schedule C – Item wise Specifications are enclosed

SECTION- 8

SECURITIES AND OTHER FORMS

.I.

Bank Guarantee for Security Deposit & Additional Security Deposit

- 1) In Consideration of the Mumbai Metropolitan Rail Corporation (here in after called "the MMRC") having agreed to exempt (here in after called "the said contractor(s)" from the demand, under the terms and conditions of an agreement dated made between the MMRC and for _____(hereinafter called "the said Agreement"), of security deposit for the due fulfillment by the said contractor(s) of the terms and conditions contained the said Agreement, on production of a Bank Guarantee for Rs. (rupees).

We, (here in after referred to as "the Bank") at the request of (Contractor(s) do hereby under take to damage caused to or suffered or would be caused to or suffered by the MMRC by reasons of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.

- 2) We, (indicate name of the bank) do here by undertake to pay the amounts due and payable under this guarantee without any demur merely on a demand from the MMRC starting that the amount claimed is due by way to loss or damage to or would be caused to or suffered by the MMRC by reason of breach by the said contractor(s) of any of the items or conditions contained in the said Agreement or by reasons of the contractor(s) failure of repudiation to perform the said Agreement . Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee .However, our liability under this guarantee shall be restricted to an amount to exceeding Rs.
- 3) We undertake to pay the MMRC any money so demanded not withstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating there to, our liability under these presents being absolute and unequivocal.

The payments made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

- 4) We, (indicate the name of the Bank) further agree that the guarantee here in contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement, and that it shall continue to been force able till all the due soft he MMRC under or by virtue of the said Agreement have been fully paid as claims satisfied or discharged or till the MMRC (indicate the name of Administrative Department) certified that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee .Unless a demand or claim under this guarantee is made on us in writing on or before the we shall be discharged from all liability under this guarantee thereafter.
- 5) We, (indicate the name of Bank) further agree with the MMRC that the MMRC shall have the fullest liberty without our consent and without affecting in any manner out obligation here under to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor (s) from time to time or to post pone for any time for from time to time any of the powers exercise able by the MMRC

against the said contractor (s) and to form be arisen force any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reasons of any such variation ,or extension being granted to the said contractor(s)or for any for be arrange, act of commission on the part of the MMRC or any indulgence by the MMRC to the said Contractor(s) or by any such matter or thing what so ever which under the law relating to sure ties would, but for this provision, have effect of sore livings.

- 6) Notwithstanding anything contained herein above, this guarantee is limited to Rs. Shall remain in force until All claims here under must be presented to the guaranty or, not after the said date, all your right under the said guarantee shall be fortified we shall beds charged from all liabilities under this guarantee thereafter.
- 7) This guarantee shall not bed is charged due to the change in the constitution of the Bank or the contractor(s)/Supplier(s).
- 8) We, indicate the name of Bank) lastly under taken to revoke this guarantee during its currency.

Date:-

For (Indicate the name of the Bank)

Form of Performance Security (Guarantee) Bank Guarantee Bond

In consideration of The Executive Director (Planning) (hereinafter called "The Government") having offered to accept the terms and conditions of the proposed agreement between and (Hereinafter called "the said Contractor(s)") for the work(Hereinafter called "the said agreement") having agreed to production of an irrevocable Bank Guarantee for Rs. (Rupees only) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We (Hereinafter referred to as "the Bank") hereby undertake to pay to the Government an amount not exceeding Rs..... (Rupees Only) on demand by the Government.
2. We (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demure, merely on a demand from the Government stating that the amount claimed as required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs..... (Rupees only)
3. We, the said bank further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.
4. We(indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the Government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.
5. We..... (indicate the name of the Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).
7. We (Indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.
8. This guarantee shall be valid up to unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. (Rupees.....) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged. Dated the day of.....of (indicate the name of the Bank)

Declaration of the Contractor(s)

Name of work:

I/ We hereby declare that

- a) I / We have made myself thoroughly conversant with the local site conditions regarding all materials, and labour on which I/ We have worked out my rates for this tender. The conditions of contract, drawings and specifications on this work have been carefully studied and understood by me before submitting the tender. I / We undertake to use only the best materials and method proposed to employ duly approved by the Engineer-in-Charge, MMRC, Mumbai or and to abide by his decision.
- b) Our firm on which name bid is submitted is not blacklisted in last 7 years.
- c) I also undertake to submit certificate of having registered with the Assistant commissioner, labour as required under contract labour rules 1970.

Signature of Bidder

FROM - VIII (B)

Affidavit (on Rs.500/- Stamp Paper)

I Age Address
(Authorized signatory to sign the contract), hereby submit, vide this affidavit in truth, that i am the owner of the contracting firm/ authorized signatory & I am submitting the documents in envelope no. I for the purpose of scrutiny of the contractor. I hereby agree to the conditions mentioned below:-

1. I am liable for action under Indian Penal Code for submission of any false/fraudulent paper/information submitted in envelop no 1.
2. I am liable for action under Indian penal code if during contract period and defect liability period, any false information, false bills of purchases supporting proof of purchase, proof of testing submitted by my staff, subletting company or by myself, I will be liable for action under I P C.
3. I am liable for action under Indian penal code if any papers are found false / fraudulent during contract period and, even after the completion of Contract (finalization of final bill).

(Signature of Contractor)
(Seal of company)

Power of Attorney for signing of bid

Know all men by these presents, we(name of the firm and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorise Mr. / Ms (Name), son/daughter/wife ofand presently residing at, who is presently employed with us/ the Lead Member of our Consortium and holding the position of, as our true and lawful attorney (hereinafter referred to as the "Attorney") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our bid for the **Construction of Commercial Building at Kalbadevi (K2) on CS No. 663, 664, 665, 1/665, 666, 667, 669, 671 & 774 of Bhuleshwar Division in 'C' Ward for Rehabilitation of Metro Line 3 PAP's at Kalbadevi & Girgaon**. Including but not limited to signing and submission of all applications, bids and other documents and writings, participate in bidders' and other conferences and providing information / responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts including the Contract Agreement and undertakings consequent to acceptance of our bid, and generally dealing with the Authority in all matters in connection with or relating to or arising out of our bid for the said Project and/or upon award thereof to us and/or till the entering into of the Contract Agreement with the Authority.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS DAY OF, 2023

For

(Signature, name, designation and address) Witnesses:

1

2

Accepted Notarized

(Signature, name, designation and address of the Attorney)

Notes:

- The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants (s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.
- Wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a board or shareholders resolution/ power of

attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.

- For a Power of Attorney executed and issued overseas, the document will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued. However, the Power of Attorney provided by Bidders from countries that have signed the Hague Legislation Convention, 1961 are not required to be legalised by the Indian Embassy if it carries a conforming Appostille certificate.

FORM OF BID

Description of the Works: Construction of Commercial Building at Kalbadevi (K2) on CS No. 663, 664, 665, 1/665, 666, 667, 668, 669, 671 & 774 of Bhuleshwar Division in 'C' Ward for Rehabilitation of Metro Line 3 PAP's at Kalbadevi & Girgaon.

BID

To :

Address :

1. We offer to execute the Works described above and remedy any defects therein in conformity with the conditions of Contract, Specification, Drawings, Bill of Quantities and Addenda for the sum(s) of (.....)

2. We undertake, if our Bid is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Engineer's notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the document.

3. We agree to abide by this Bid for the period of * days from the date fixed for receiving the same, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

4. Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

5. We understand that you are not bound to accept the lowest or any tender you may receive

6. We accept the appointment of Shri. as the Dispute Review Expert.

(OR)

We do not accept the appointment of Shri as the Dispute Review Expert and propose instead that Shri be appointed as Dispute Review Expert, whose BIO-DATA is attached.

Dated this..... day of20

Signaturein the capacity of..... duly authorized to sign bids for and on behalf of.....

(in block capitals or typed)

Address

.....
.....

Witness

.....
.....

Address

.....
.....

Occupation

.....
.....

SCHEDULE C
ITEM WISE SPECIFICATION

Name Of Project:- Construction of Floor Building at Kalbadevi (K2) at Kalbadevi, CST No. 663 to 671, Mumbai - 400 002

NIT Ref. - MMRC/Planning/2023/01 Dt. 07.02.2024

Name Of Client :- Mumbai Metro Rail corporation Limited

Name Of PMC:- M/s. Shrikhande - Amiad - Designo (Consortium)



Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
A- Civil, RCC & Structural Work						
SH: 1 PILING WORK						
1.1		Empty boring from existing ground level till bottom of capping beam as specified or as the case may be, as shown on the drawings or as directed				
i	SSR 22.52	600mm dia	Rmt	(SSR) 22.52,	Pg. 171	
iii	SSR 22.54	upto1050mm dia	Rmt	(SSR) 22.54,	Pg. 171	
1.2	Non DSR	Secondary Piles :- 800mm dia Providing & construction of cast in situ RCC bored piles of specified diameters in M 40 concrete grade as shown in the structural drawings using rotary drilling rigs. Scope includes setting out cardinal points, boring in over burden through all stratas including dewatering, chiselling through obstacles like boulders, weathered rock, soft rock, hard strata etc, providing temporary steel casing sunk to the required depth through all strata except hard rock & stabilizing the bore wall portion by using bentonite slurry including flushing out the same by pumps of adequate capacity, removing all slush to locations approved, irrespective of lead as directed, lowering the reinforcement cage, welding of new bars of specified dia with stitch weld &/or lap weld in accordance with the structural drawing, as per enclosed technical specification & directions and concreting with ready mix concrete of using tremie arrangements, compaction of concrete etc complete.		MR - As per Manufacturer's Recommendation & Technical Specification		
		800mm dia pile	Rmt			
1.3		Secant Piles :- 900mm dia				
	R3-CS-PLG-1-1	Providing and Casting RCC bored cast in-situ Vertical as per IS 2911 (Part 1, Section 2) by boring through all kinds of soils/ Sand /Rock by rotary hydraulic rigs using temporary casing up to stable strata / bentonite mud circulation as specified, from tip to cut-off elevation of piles. Reinforced Cement Concrete work of filling the bore (after placement of reinforcement cage as per drawing) with M40 grade Ready Mix Concrete using 43 Grade Ordinary Portland Cement conforming to IS : 8112, of approved make and brand with minimum cement content of 400 kg/m ³ and with water -cement ratio, including the water contained in aggregates (10mm to max 20mm size), not exceeding 0.45, with approved plasticizer as specified, including placing of concrete from tip to minimum of 600mm above the specified cut-off level, breaking pile head to cutoff level and exposing pile reinforcement for embedment in pile cap, Disposing & levelling of bored/excavated material suitably at locations approved by the local authorities including all lead and lifts, all complete for piles having diameter of (Pile will be measured for payment for length between pile tip to cut-off level along the pile axis. Reinforcement shall be paid separately) Note : Cost of temporary casing shall be incurred by the Contractor.		MCGM SOR R3-CS-PLG-1-1	153	
		900mm dia piles	Rmt			
1.4	Non DSR	Providing and Casting RCC bored cast in-situ Vertical as per IS 2911 (Part 1, Section 2) by boring through all kinds of soils/ Sand /Rock by rotary hydraulic rigs using temporary casing up to stable strata / bentonite mud circulation as specified, from tip to cut-off elevation of piles. Reinforced Cement Concrete work of filling the bore (after placement of reinforcement cage as per drawing) with M50 grade Ready Mix Concrete using 43 Grade Ordinary Portland Cement conforming to IS : 8112, of approved make and brand with minimum cement content of 400 kg/m ³ and with water -cement ratio, including the water contained in aggregates (10mm to max 20mm size), not exceeding 0.45, with approved plasticizer as specified, including placing of concrete from tip to minimum of 600mm above the specified cut-off level, breaking pile head to cutoff level and exposing pile reinforcement for embedment in pile cap, Disposing & levelling of bored/excavated material suitably at locations approved by the local authorities including all lead and lifts, all complete for piles having diameter of (Pile will be measured for payment for length between pile tip to cut-off level along the pile axis. Reinforcement shall be paid separately) Note : Cost of temporary casing shall be incurred by the Contractor.		MR - As per Manufacturer's Recommendation & Technical Specification		
		Extra over rate for items CS-PLG-1 & 2 for using M40 instead of M 25 for M25 to M40 Grade - 900mm dia Pile				
(i)		900mm dia pile	Rmt			
1.5	Non DSR	Providing & construction of cast in situ RCC bored piles of specified diameters in M 10 concrete grade as shown in the structural drawings using rotary drilling rigs. Scope includes setting out cardinal points, boring in over burden through all stratas including dewatering, chiselling through obstacles like boulders, weathered rock, soft rock, hard rock etc, providing temporary steel casing sunk to the required depth through all strata except hard rock & stabilizing the bore wall portion by using bentonite slurry including flushing out the same by pumps of adequate capacity, removing all slush to locations approved, irrespective of lead as directed, lowering the reinforcement cage, welding of new bars of specified dia with stitch weld &/or lap weld in accordance with the structural drawing, as per enclosed technical specification & directions and concreting with ready mix concrete of using tremie arrangements, compaction of concrete etc complete.		MR - As per Manufacturer's Recommendation & Technical Specification		
		700mm dia Piles	Rmt			

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
1.6	SSR 22.55	Chipping and dressing of the R.C.C. piles upto 0.60 meter including cleaning reinforcement and removal of dismantled materials upto a distance of 50 meter beyond the building area etc. for providing pile caps.	No.	SSR 22.55 - As directed by Engineer In Charge	171	
1.7	SSR 26.34,	Providing and fixing in position HCRM / CRS (Corrosion Resistant Steel)/ Thermo-Mechanically Treated bars of grade Fe-500 bar reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams columns, canopies, staircase, newels, chajjas, lintels pardis, copings, fins, arches etc. as per detailed designs, drawings and schedules, including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required complete. (with minimum total elongation of 14.5% confirming to IS-1786.)	MT	SSR 26.34 - Bd.F.17,	306	
1.8	SSR 22.57	Providing placing and Driving in position 6 millimeter mild steel liner for R.C.C. Piles upto required depth with 12mm thick mild steel cutting edge of 0.50m length at bottom including fabricating cutting the mild steel sheet to required diameter and shape ,welding the joints and driving with the help of required machineries including all materials labours and lifts etc. complete as directed by the Engineer in charge. Upto 3.00 meter deep liner	MT	SSR 22.57 - As directed by Engineer Incharge	171	
1.9	SSR 22.58	Providing placing and Driving in position 6 millimeter mild steel liner for R.C.C. Piles upto required depth with 12mm thick mild steel cutting edge of 0.50m length at bottom including fabricating cutting the mild steel sheet to required diameter and shape ,welding the joints and driving with the help of required machineries including all materials labours and lifts etc. complete as directed by the Engineer in charge. From 3.00 to 9.50 meter deep liner	MT	SSR 22.58- As directed by Engineer Incharge	171	
1.10	R3-CS-PLG-14.3	Carrying out low strain pile integrity test on 600mm / 800mm diameter pile including all arrangements for test, equipments/accessories, materials, labour, submission of test report etc but excluding the cost of installation of job pile (installation of pile shall be paid seperately as per relevent items) all complete as per specification and as directed by the engineer-in-charge.				
	R3-CS-PLG-14.5	900mm Dia	Nos.	MCGM SOR R3-CS-PLG-14.5	159	
	R3-CS-PLG-14.5	800mm Dia	Nos.	MCGM SOR R3-CS-PLG-14.5	159	
1.11	R3-CS-PLG-21	Conducting routine vertical load test for 1.5 times safe load carrying capacity by means of High Strain Dynamic Load Test including provision and erection of crane- hammer-drop mechanism, acceleration and displacement velocity transducers to record both force and velocity including excavation, dewatering, preparation of pile head including building up of pile, additional reinforcement if any etc. all complete as per approved method (ASTM D4945-89), submission of test report, specifications and instructions of the Engineer for piles of following diameter :		MCGM SOR R3-CS-PLG-21	161	
	R3-CS-PLG-21.7	800mm	Nos.	MCGM SOR R3-CS-PLG- 21.7	161	

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
		Important Notes -				
		Unless other wise specified, cement shall be OPC of grade 53 and the mix design shall be approved by the structural consultant. In case of concrete mix design the fly ash content shall be restricted to a max of 25% upon approval of Structural Consultants.				
		Pile length mentioned in the BOQ is indicative, however the Pile length may vary based on the strata encountered at site.				
		The scope shall also include any other related activities involved, material, resource not specifically described herein below but essential for satisfactory & timely completion of the Shore Piling work.				
		The scope shall also include guide / temporary steel casing sunk to the required depth.				
		Muck / bored material generated during piling work shall be removed, carted away from the site by the piling contractor. The scope shall also include disposal of the same at an approved destination as per the norms of statutory authority.				
		The Rates are included Royalty, Loading & Unloading Charges				
2		SH: 2 STRUCTURAL STEEL WORK				
2.1	SSR 23.01	Providing and fabricating structural steel work in rolled sections like joists, channels, angles, tees etc. as per detailed design and drawings or as directed including cutting, fabricating, hoisting, erecting, fixing in position making riveted/bolted/welded connections with & without connecting plates, braces etc. and including one coat of anticorrosive paint and overit two coats of oil painting of approved quality and shade etc. complete. Structural steel of grade Fe250	MT	SSR 23.01 - Bd.C.2	275	
3		SH:3 EARTH WORK				
3.1		Excavation in Soil				
3.1.1	R3-CS-EW-1	Excavation for foundations, substructures, basements, tanks, sumps, walls, chambers, manholes, trenches, pits, pits & general building works in all types of soils, vegetable earth, soft murum, running sand, shingle, turf clay, loam, peat, ash, shale, slag, chalk, garbage, muddy/ marshy/ slushy soil, marine clay, reclaimed land etc. for depths/lifts upto 1.5M measured from the ground level, including dressing/ trimming the sides, leveling and ramming of bottoms, manual dewatering, removing rank vegetation, backfilling in layers not more than 200mm thickness, watering, consolidating, compacting to achieve not less than 97% Modified Proctor density conforming to relevant IS, stacking the selected material in measurable heaps for future use within owners space or disposing within an initial lead of 150m as directed, loading, unloading, leveling excluding shoring, strutting etc. complete as directed by Engineer-in-Charge.	Cum	R3-CS-EW-1	5	
3.1.2	R3-CS-EW-2a	Extra over above item CS-EW-1 for lift from 1.5m to 3.0m.	Cum	R3-CS-EW-2a	5	
3.1.3	R3-CS-EW-2b	Extra over above item CS-EW-1 for lift from 3.0m to 4.5m	Cum	R3-CS-EW-2b	5	
3.1.4	R3-CS-EW-2c	Extra over above item CS-EW-1 for lift from 4.5m to 6.0m	Cum	R3-CS-EW-2c	5	
3.2	R3-CS-EW-3	Excavation for foundation, substructures, basements, tanks, sumps, walls, chambers, manholes, trenches, pits & general building works in soft/ disintegrated rock, sand stone, stiff clay, gravel, cobblestone, hard laterite, water bound macadam, wet mix macadam, asphalt mix carpet of any type, pitching, soling, paths and hardcore, lime concrete, plain cement concrete, stone masonry and all types of brick/ block masonry below ground level, rock boulders, etc. for depths/ lifts upto 1.5M measured from the ground level, including dressing/ trimming the sides, leveling of bottoms, manual dewatering, removing rank vegetation, backfilling in layers not more than 200mm thickness, watering, consolidating, compacting to achieve not less than 97% Modified Proctor density conforming to relevant IS, stacking in measurable heaps for future use within owners space or disposing within an initial lead of 150m as directed, loading, unloading, leveling excluding shoring, strutting etc. complete as directed by Engineer-in-Charge.		R3-CS-EW-3	5	
3.2.1	R3-CS-EW-7-a	Extra over the items CS-EW-03 to CS-EW-06 for lift from 1.5m to 3.0m.	Cum	R3-CS-EW-7-a	6	

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
3.2.2	R3-CS-EW-7-b	Extra over the items CS-EW-03 to CS-EW-06 for lift from 3m to 4.5m.	Cum	R3-CS-EW-7-b	6	
3.2.3	R3-CS-EW-7-c	Extra over the items CS-EW-03 to CS-EW-06 for lift from 4.5m to 6.0m.	Cum	R3-CS-EW-7-c	6	
3.3	R3-CS-EW-4	Excavation by chiseling by manual operations, pneumatic breaker, hammer, drilling, compressor breaker, jack hammer etc. for foundations, substructures, basements, tanks, sumps, walls, chambers, manholes, poles, pits & general building works in hard rock, reinforced concrete, Bituminous macadam for depths/lifts upto 1.5M, including dressing/trimming the sides, leveling of bottoms, manual dewatering, removing rank vegetation, backfilling in layers not more than 200mm thickness, watering, consolidating, compacting to achieve not less than 97% Modified Proctor density conforming to relevant IS, stacking in measurable heaps for future use within owners space or disposing within an initial lead of 150m as directed, unloading, leveling excluding shoring, strutting etc. complete as directed by Engineer-in-Charge, loading.	Cum	R3-CS-EW-4	6	
3.4	R3-CS-EW-8	Disposing and carting away surplus excavated material outside the premises for lead upto 3 km including levelling.	Cum	R3-CS-EW-8	6	
3.5	R3-CS-EW-9	Add for each additional lead of 1km beyond initial lead of 3km including levelling. (Considering dumping ground at @ 50 Kms from site. (50 Kms - 3kms (ref item no. 2 above)=47 Kms)	Cum	R3-CS-EW-9	6	
3.6	R3-CS-EW-10	Dewatering the excavated trenches/pits, pools of water, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in-charge including cost of machinery, labour, fuel, pipe and it's accessories etc. complete.	HP/Hr.	R3-CS-EW-10	6	
3.7	SSR 21.25	Providing preconstructional antitermite treatment as per I.S. 6313 (Part-I) to the soil along the external face of building by punching holes of 1.2 of 1.5 C.M. diametre about 30 -60 cm deep at 15 cm c/c as close to the wall as possible and to inject 0.5 percent of aldrin or chlorophytrifos at the rate of 7.5 litres per hole and sealing the same with proper filling and covering 10 years guarantee on bond paper.	Sqm.	SSR 21.25 - As directed by Engineer in charge.	156	
3.8	SSR 21.36	Filling in plinth and floors with approved excavated material (available at site) in 15cm. to 20cm. layers including watering and compacting etc. complete.	Cum	SSR 21.36 - Bd.A.10	262	
3.9	SSR 21.37	Filling in plinth and floors with contractors material/brought from outside and approved by Engineer incharge in layers of 15 cm to 20 cm including watering and compaction etc. complete. (behind retaining wall)	Cum	SSR 21.37 - Bd.A. 11	262	
3.10	R3-CS-EW-27	Providing & Laying 150 mm thick dry stone Rubble Soling with average 150 mm size hard stone set in regular lines, handpacked and interstices thoroughly filled with small chips including filling in with good quality murum brought from outside, compacting with iron rammers, watering, sand spreading 12mm thk. layer of grit on top etc complete as directed by Engineer In Charge. (Note: The rate includes the royalty and other taxes if any)	Sqm.	MCGM SOR 2023 R3-CS-CW-27	17	
3.11	SSR 17.36	Providing and fixing pressure relief pipes of 110 mm diametre of PVC as per drawing for R.C.C Raft, galleries returns, abutments, wing wall etc complete.	Rmt	SSR 17.36 - MORT&H (5th Rev.) 2705, 2706	132	
3.12	R3-CS-CW-24	Providing and laying C.C. floor of mix M-15 with ready mixed concrete from RMC. The ready mixed concrete shall be laid and vibrated with a poker vibrator and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge.	Cum	MCGM SOR 2023 R3-CS-CW-24	16	
3.13	MR	Supply, unloading, shifting, fixing, testing Modi Foam filling system & its accessories as per manufacturer's specification etc. complete and as directed by Engineer in charge	Cum	MR - As per Manufacturer's Recommendation & Technical Specification		
3.14	MR	Providing & Fixing Welded flat mesh for Modifoam filling system as per manufacturer's specification etc. complete and as directed by Engineer in charge	Sqm.	MR - As per Manufacturer's Recommendation & Technical Specification		

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		Note : This lead will be admissible only within MCGM limits. The distance between centerlines shall be taken as the lead which shall be measured by the shortest route on the plan and not the actual route taken by the Contractor. Here Centerlines represents the center point (for area/mass excavation) and the center chainage for linear excavation.				
		2. The Engineer In Charge shall exclusively include these directions in the Tender/Bid document and the Tenders/Bidders shall be insisted to make the declaration of the dumping plot at the time of submission of Bid.				
		3. The Engineer In Charge shall take the quantity in account for the disposal only upto Municipal Limits for the Shortest Route and payment will be made as per the actual distance within municipal limit. The payment will be restricted to the shortest distance upto the Municipal limit for the plot identified outside the Municipal limit.				
		4. Prior Specific sanction of Head of Dept. should be taken if transportation is to be done at night for above items, (i.e. between 8.00 pm. to 6 am.) and the rate shall be reduced by 10%. This item will be operated/executed with the				
		5. The rate includes the handling/supporting the existing utilities such as cables, drains, pipes, water mains etc. It also includes the royalty and other taxes if any.				
4		SH: 4 CEMENT CONCRETE WORK				
4.1	SSR 24.04	Providing and laying Cast in situ/Ready Mix cement concrete in M15 of trap/ granite / quartzite / gneiss metal for foundation and bedding / steps including steel centering, formwork, laying/pumping, compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface, only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.),with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)	Cum	SSR 24.04 - Bd.E.2 - 288 and B.7 Page No 38	288	
4.2	R3-CS-CW-62	Providing & Laying Plum concrete consisting of 80% P.C.C. mix (1:3:6) and 20% Rubble stone of maximum size of 150 mm laid in layers with ramming consolidating,watering including dewatering cost,seigniorage & conveyance of all materials,labour charges,machine mixing,finishing the surface etc. complete.	Cum	R3-CS-CW-62	31	
5		SH: 5 REINFORCED CEMENT CONCRETE WORK				
5.1	SSR 25.13	Providing and laying Cast in situ/Ready Mix cement concrete M-25 of trap/ granite/quartzite/ gneiss metal for R.C.C. work in foundations like raft, strip foundations, grillage and footings of R.C.C. columns and steel stanchions etc. including bailing out water, Steel centering, formwork, cover blocks, laying / pumping, compaction and curing roughening the surface if special finish is to be provided (Excluding reinforcement and structural steel) etc. complete, with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)	Cum	SSR 25.13 - Bd.F.3 Page One Number 298 and B.7, Page One Number38	298	
5.2	SSR 25.11	Providing and laying in situ /Ready Mix cement concrete M-20 of trap / granite /quartzite/ gneiss metal for R.C.C. work in foundations like raft, strip foundations, grillage and footings of R.C.C. columns and steel stanchions etc. including bailing out water, Steel centering formwork, laying/pumping cover blocks, compaction and curing roughening the surface if special finish is to be provided (Excluding reinforcement and structural steel) etc. complete, with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 25.11 - Bd.F.3 and B.7, Page One Number38	298	
5.3	SSR 22.61	Providing and laying Cast in situ/Ready Mix cement concrete M-45 of trap metal for R.C.C. pile caps as per detailed designs and drawings, including bailing out water manually, centering, formwork, laying/ pumping, compacting, finishing and curing etc. with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade) complete (Excluding steel reinforcement)		SSR 22.61 - As directed by Engineer In Charge	172	
5.4	SSR 25.54	Providing and laying Cast in situ/Ready Mix cement concrete M-30 of trap / granite/quartzite/ gneiss metal for R.C.C. beams and lintels as per detailed designs and drawings or as directed including steel centering, formwork, cover blocks, laying/pumping, compactionand roughening the surface if special finish is to be provided and curing etc. complete. (Excluding reinforcement and structural steel),with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 25.54 - As directed by Engineer In Charge	171	
5.5	SSR 25.19	Providing and laying Cast in situ/Ready Mix cement concrete M-45 of trap / granite / quartzite/ gneiss metal for R.C.C. work in foundations like raft, strip foundations, grillage and footings of R.C.C. columns and steel stanchions etc. columns as per detailed designs and drawing or as directed including steel centering, formwork, cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete. (Excluding reinforcement and structural steel),with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 25.19 - Bd.F.3 Page One Number 298 and B.7, Page One Number38	298	

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5.6	SSR 25.39	Providing and laying Cast in situ/Ready Mix cement concrete M-50 of trap / granite / quartzite/ gneiss metal for R.C.C. columns as per detailed designs and drawing or as directed including steel centering, formwork, cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete, (Excluding reinforcement and structural steel).with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 25.39 - Bd.F.5 and B.7, Page.One Number 38	300	
5.7	SSR 25.39	Providing and laying Cast in situ/Ready Mix cement concrete M-40 of trap/ granite /quartzite/ gneiss metal for R.C.C. columns as per detailed designs and drawing or as directed including steel centering, formwork, cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete, (Excluding reinforcement and structural steel).with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 25.39 - Bd.F.5 Page One and B.7, Page.One Number 38	300	
5.8	SSR 25.58	Providing and laying Cast in situ/Ready Mix cement concrete M-40 of trap /granite/quartzite/ gneiss metal for R.C.C. beams and lintels as per detailed designs and drawings or as directed including steel centering, formwork, cover blocks, laying/pumping, compactionand roughening the surface if special finish is to be provided and curing etc. complete (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 25.58 - Bd.F.6 and B.7, Page One Number38	300	
5.9	25.54	Providing and laying Cast in situ/ Ready Mix cement concrete M-30 of trap / granite/quartzite/ gneiss metal for R.C.C. beams and lintels as per detailed designs and drawings or as directed including steel centering, formwork, cover blocks, laying/pumping, compactionand roughening the surface if special finish is to be provided and curing etc. complete. (Excluding reinforcement and structural steel).with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 25.54 - Bd.F.6 Page One Number 300 and B.7, Page One Number38	300	
5.10	SSR 25.78	Providing and laying Cast in situ/Ready Mix cement concrete M-40 of trap /granite/ quartzite/ gneiss metal for R.C.C. slabs and landings as per detailed designs and drawings including steel centering, formwork, cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete, (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 25.78 - Bd.F.8 and B.7, Page One Number38	302	
5.11	SSR 26.07	Providing and laying Cast in situ/Ready Mix cement concrete M-40 of trap/ granite/ quartzite / gneiss metal for R.C.C. chajja as per detailed design and drawings including steel centering, formwork, cover blocks, laying/pumping, compacting and roughening the surface if special finish is to be provided and curing complete. (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 26.07 - Bd.F.9 and B.7, Page One Number38	303	
5.12	SSR 25.78	Providing and laying Cast in situ/Ready Mix cement concrete M-45 of trap /granite/ quartzite/ gneiss metal for landings as per detailed designs and drawings including steel centering, formwork, cover blocks, laying/pumping, compaction finishing the formed surfaces with cement mortar 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete, (Excluding reinforcement and structural steel) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 25.78 - Bd.F.8 and B.7, Page One Number38	302	

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5.13	SSR 26.26	Providing and laying Cast in situ/Ready Mix cement concrete in M-45 of trap / quartzite /granite /gneiss metal for R.C.C. Waist slab, and steps of staircases as per detailed design and drawings or as directed including steel centering, plywood/ steel formwork, steel props, laying/pumping, compaction, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening the surface if special finish is to be provided and curing etc. complete. (Excluding einforcement, including cover block). (Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc.) with fully automatic micro processor based PLC with SCADA enabled reversible Drum Type mixer/ concrete Batch mix plant (Pan mixer) etc. complete. With fine aggregate (Crushed sand VSI Grade)		SSR 26.26 - Bd. F. 13 /L.S. 456 (2000)	305	
		General Notes - The unit rate shall take into account the following				
		The Concrete used shall be 'Controlled Concrete'. Providing / Supplying, pumping and laying controlled concrete conforming to grades as specified in IS 456 and as per the specifications using mix approved by the structural consultant. Concrete shall be dense & crack free.				
		Contractor is advised to study the drawings before submission of the quote.				
		The mix design shall be carried out in accordance to the relevant IS Codes, in approved lab and the same shall be approved by the Structural Consultant. For mix design of all concrete grades, fly ash content shall limited to 25 % and in case of GGBS it would be 40% as approved by the Structural Consultant				
		Designing of the mix, batching, mechanical mixing, transport, pumping and placing at all heights and location, all shapes and sizes, laying to required slopes, vibrating, curing and finishing, scaffolding, hacking the concrete surface, plant and machinery, hire and fuel, incidental charges, deshuttering, cutting of formwork for passing services, conduits, or for dowels, Loading & Unloading, Royalty etc complete to finish the work etc complete				
		Contractor shall maintain a certified testing lab at site with a minimum facilities / equipments.				
		Contractor shall rectify all water leakages in concrete with proper grouting.				
		All testing and quality assurance shall be as per tender specifications / conditions				
		Unless otherwise specified, all structural / concrete elements shall have form finish and no hacking shall be done or no plastering shall be provided over any concrete surface.				
		The scope shall also include protecting, curing of concrete surfaces as directed, concreting by either pumping or by approved mechanized means only.				
		The Contractor may set up his own dedicated computerized RMC plant of adequate capacity at site or Ready Mix Concrete shall be procured from approved manufacturer.				
		The rate for RCC work shall include forming of projections, sinking of floors in toilets or wherever required, keeping provision in shuttering for niches, dowel bars etc.				
		The contractors shall co-ordinate with other agencies appointed for services viz laying conduits, placing boxes, pipes, clamps etc.				
		The scope also includes necessary surface preparation providing and applying approved bonding agent and cement 1:1 proportion for construction joints as per manufacturer specifications.				
		Scope also includes necessary Surface preparation including casting of slab should be completed in all respect before erection of greater height scaffolds for big cantilevers etc.				
		Concrete rates are exclusive of formwork. Unless otherwise specified, formwork & reinforcement shall be measured and paid under respective items				
		After concreting the concrete shall be cured & covered with Hessian cloth stiched with Plastic sheet which has to be applied on wet concrete surface for minimum 7 days.				
		The contractor shall take all necessary precautions for concreting operations during Summer season / hot weather & shall design temprature control concrete to be used for larger concrete pour to control heat of hydration by using cold water / ice flakes.				
		In no case any defective concrete in any of the structural elements shall be acceptable. The contractor shall undertake remedial measures as instructed by the Structural Consultant. The remedial measures shall be smoothly finished with CM 1:4 at no extra cost. Any undulations, bulging etc shall be chipped and finished by the contractor without any extra cost.				

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		Steel Reinforcement				
5.14	SSR 26.34	Providing and fixing in position HCRM / CRS (Corrosion Resistant Steel) / Thermo-Mechanically Treated bars of grade Fe-500 bar reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams columns, canopies, staircase, newels, chajjas, lintels, parapets, copings, fins, arches etc. as per detailed designs, drawings and schedules. including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required complete. (with minimum total elongation of 14.5% confirming to IS-1786.)		SSR 26.34 - Bd.F.17,	306	
5.15	CPWD 5.42	Providing and fixing parallel threaded couplers conforming to IS code on "Reinforcement Couplers for Mechanical Splices of Bars for Concrete Reinforcement - Specification", to reinforcement bars including threading, enlargement at connection by forging, protecting the prepared reinforcement bars and related operations as required to complete the works per direction of Engineer-in-Charge.		CPWD 5.42	122	
5.15.1		Coupler for 12mm diameter reinforcement bar	each	CPWD 5.42.1	122	
5.15.2	CPWD 5.42.1	Coupler for 16mm diameter reinforcement bar	each	CPWD 5.42.1	122	
5.15.3	CPWD 5.42.2	Coupler for 20mm diameter reinforcement bar	each	CPWD 5.42.2	122	
5.15.4	CPWD 5.42.3	Coupler for 25mm diameter reinforcement bar	each	CPWD 5.42.3	122	
5.15.5	CPWD 5.42.4	Coupler for 28mm diameter reinforcement bar	each	CPWD 5.42.4	122	
5.15.6	CPWD 5.42.5	Coupler for 32mm diameter reinforcement bar	each	CPWD 5.42.5	122	
		General Note				
		Unless otherwise specified rate quoted shall include the following.....				
		Cost of all reinforcement, labour, equipment / tools & plants required, shifting, infrastructure facilities required etc.				
		Work at any depth below ground level or any height above ground level and at all levels, heights & elevation and location as specified.				
		HCRM/ Corrosion resisting steel/Thermo-Mechanically Treated bars of grade Fe-500 / 500D or more and with minimum total elongation of 14.5% confirming to IS-1786.				
		Cutting, wastage, straightening, bending, hoisting, fixing, welding, supporting in position, PVC cover blocks, 18 gauge GI binding wire				
		Unless otherwise noted in the bills of Quantities, method of measurements shall be in accordance with IS 1200. Reinforcement shall be measured only in lengths of bars as actually placed in position on standard weight basis, no allowance shall be made in the weight for rolling margin. Authorised laps and splices shall be measured. Chairs of any shape & profiles, Spacer bar of any shape & profile, cover block, wastage and binding wire will not be measured and shall be included in the quoted rates.				
		Tests on material shall conform to IS Specification and the test shall be carried out as directed either at site Laboratory or at any approved test laboratory.				
		Re-rolled steel bars may be used , however rerolled bars shall be accompanied with Material Test Certificate & shall be tested at NABL accredited Lab & should conform to IS requirement for every lot purchased. Entire rerolled steel component shall be more than 10% requirement.				
		For measurement & payment, actual quantity for reinforcement bars provided and authentic laps OR couplers provided (but excluding hooks, spacer bars, chairs, pins, laps that are not authentic, temporary fixing & supports etc) shall be measured. The contractor shall take into account the quantities for hooks, spacer bars, chairs, pins, laps that are not authentic, temporary fixing & supports etc complete and quote accordingly. No extra payment on this account shall be considered.				
		In the event if it is observed that the reinforcement is showing sign of rusting / corrosion due to atmospheric effect or during monsoon and the same is not accepted by the Project Manager, then the contractor at his cost shall apply an approved anti corrosive treatment over such steel.				
6		SH : 6 Water Proofing				
		Treatment to Pile Head (dia as per drg.)				
6.1	MR	Re-Profiling of Pile Surface: The tension pile surface will be re-profiled using non-shrink cementitious grout, in minimum 15mm thickness, all as per manufacturers recommendations.		MR - As per Manufacturer's Recommendation & Technical Specification		
		Waterproofing of Pile Head Treatment with Epoxy Grout : The tension pile head will be waterproofed using solvent free epoxy resin based mortar consisting of resin, hardener and quartz sand as per manufacturer's recommendation of approved equivalent by the Design Engineer, in minimum 10mm thickness, all as per manufacturers recommendations to be done by the Main Contractor.				
		Piles Sides : Sealing the sides of pile head after reprofiling with a Alsan Flashing / 2 component PU liquid membrane Alsan Flashing or approved equivalent by Design Engineer, 50 mm wide on Membrane & 75 mm height on side of the pile & on top till reinforcement. etc. complete with all lead and lift for all materials and labour and as per manufacturer's specification.				
		600mm dia- RCC Piles - Tower Parking	No.			
		800mm dia- RCC Piles - Tower Parking	No.			

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6.2	MR	Below raft slab Supply of material for waterproofing in foundation with laying one layer of pre-applied fully bonded 1.2mm (minimum) thick. HDPE water proofing membrane SUNPRUFE of Ms. Sunanda Speciality Coatings Pvt. Ltd. or other approved equivalent consisting of HDPE sheet (HDPE should be virgin HDPE & not recycled, thickness of bare HDPE layer shall not be less than 0.75 mm) coated with pre-applied pressure sensitive adhesive layer and a trafficable, non tacky, smooth finish, weather & dirt resistant non absorbent protective coating covered with a clear release liner, at bottom and on sides of foundation/ raft / pile cap/plinth beam/ tie beam below ground. The membrane shall be projected 250 mm (min) from bottom level of foundation/pile cap/beams on all sides for fully encapsulation of concrete below ground level, including covering sides of HDPE membrane by 8mm HDPE dimple board, having minimum density of 85 kg/m ³ & hardness 20 (Shore-A) including providing mortar fillet of 50 x 50 mm at sharp edges, making holes for pile in pile cap, plinth/tie beam etc. all complete as per manufacturer specification / ESL specification no 13224-000-81-41-SP-0001 Colour White Finish -Sand Composite Thickness (ASTM D 3767) 1.2 mm/1.5 mm (HDPE min 0.8 mm) 1.8 mm (HDPE min 1 mm) Tensile Strength, Film (ASTM D 412) >25 MPa Elongation (ASTM D 412) >600% Low Temperature Flexibility @ -25oC (ASTM D 1970) Pass Resistance to Hydrostatic Head (ASTM D 5385) >60 m Crack Cycling (ASTM D 836/ASTM C 1305) Pass Peel Adhesion to Concrete (ASTM D 903) >880 N/m Dimensional Stability (ASTM 1204) <2% Puncture Resistance (ASTM E 154) >1000 N Weatherability and UV Resistance (ASTM G 154) Passes Conformance IS 16471 Type I	Sqm.	MR - As per Manufacturer's Recommendation & Technical Specification		
		Retaining Wall				
6.3	MR	Retaining Wall (Confined Area) (The Membrane shall be used in Confined condition, the main contractor will provide masonry / Lean concrete for the waterproofing agency to fix the membrane on the surface)				
		Supply of material for waterproofing in foundation with laying one layer of pre-applied fully bonded 1.2mm (minimum) thick. HDPE water proofing membrane SUNPRUFE of Ms. Sunanda Speciality Coatings Pvt. Ltd. or other approved equivalent consisting of HDPE sheet (HDPE should be virgin HDPE & not recycled, thickness of bare HDPE layer shall not be less than 0.75 mm) coated with pre-applied pressure sensitive adhesive layer and a trafficable, non tacky, smooth finish, weather & dirt resistant non absorbent protective coating covered with a clear release liner, at bottom and on sides of foundation/raft /pile cap/plinth beam/ tie beam below ground. The membrane shall be projected 250 mm (min) from bottom level of foundation/pilecap/beams on all sides for fully encapsulation of concrete below ground level, including covering sides of HDPE membrane by 8mm HDPE dimple board, having minimum density of 85 kg/m ³ & hardness 20 (Shore-A) including providing mortar fillet of 50 x 50 mm at sharp edges, making holes for pile in pile cap, plinth/tie beam etc. all complete as per manufacturer specification / ESL specification no 13224-000-81-41-SP-0001 Colour White Finish -Sand Composite Thickness (ASTM D 3767) 1.2 mm/1.5 mm (HDPE min 0.8 mm) 1.8 mm (HDPE min 1 mm) Tensile Strength, Film (ASTM D 412) >25 MPa Elongation (ASTM D 412) >600% Low Temperature Flexibility @ -25oC (ASTM D 1970) Pass Resistance to Hydrostatic Head (ASTM D 5385) >60 m Crack Cycling (ASTM D 836/ASTM C 1305) Pass Peel Adhesion to Concrete (ASTM D 903) >880 N/m Dimensional Stability (ASTM 1204) <2% Puncture Resistance (ASTM E 154) >1000 N Weatherability and UV Resistance (ASTM G 154) Passes Conformance IS 16471 Type I	Sqm.	MR - As per Manufacturer's Recommendation & Technical Specification		

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6.4	52.25	Retaining Wall (Unconfined Area) Trowel applied Cementitious Membrane				
		Clean the existing surface of Retaining Wall thoroughly to remove dirt, loose particles, laitance etc. For emergency waterproofing of existing terrace. Use a vacuum cleaner or high pressure jet or wire brushing as per requirement. Examine the surface closely for any cracks. Fill it with acrylic polymeric non-shrink crack filler putty as approved by Engineer in charge a pure aliphatic, acrylic, polymer modified ready to use paste. After filling, allow the surface to dry for atleast 24 hrs. If the depth of the crack is more than 2-3 mm apply in layers at intervals. Moisten the surface with a water jet one day prior to the application of waterproofing coating. Mix 1 part of 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) membrane as approved by Engineer in charge and 1 part of grey cement by weight using a low speed mechanical stirrer to form slurry lump free consistency. Apply this as a primer coat of 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) membrane as approved by Engineer in charge. Apply the same slurry by roller at 24 hrs interval between the applications of each coat. Allow the primer coat to set for 24 hrs. After the primer coat is set, apply two coats of pure enoate based polymer titanium dioxide based 2-(methoxycarbonyl)-1-propene-butyl-2 propenoate (TMPBP) and 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) of waterproof coating as approved by Engineer in charge on surface. Ensure that no pinholes are let untouched. Allow the membrane to cure for 24-48 hours. Single Component, UV Resistant, Elastomeric, High Build Waterproof Coating (Confirming to DIN 1048) should have following minimum properties: 1) Elongation % (ASTM D 638): @ 400% 2) Tensile Strength (ASTM D 412): 150 psi 3) Water Permeability (DIN 1048): Zero 4) Solids: > 65% 5) pH: 8.5 - 10.5	Sqm.	SSR 52.25 - As directed by Engineer in charge	434	
		External side				
6.5	MR	Treatment to Construction Joints:				
	a	Cleaning the surface properly with the help of required tools, tackles etc. Providing and applying 200 mm wide band on construction joint, it should be on 100mm wide on either side from centre of construction joints with one coat of Sunprime PU primer of Sunanda specialty coatings pvt ltd followed by two coats of Elastorooft 2k of Sunanda specialty coatings pvt ltd on construction joints surface.	Rmt	MR - As per Manufacturer's Recommendation & Technical Specification		
	i	Cleaning for lift pit				
	ii	Cleaning for Sealing/Packing joints in Outlets Pipes: (Considered upto 200mm dia)				
	iii	ETP tank internal waterproofing				
	b	Providing and fixing non reversible PVC nozzle for grouting slurry of cement, shrinkage compensating compound (Sunplex) and Polyalk WP in proportion of 50kg bag of cement, 330 gm pouch sunplex and 3 lit of Polyalk WP and water as per required consistency under required pressure till refusal. every 600 mm from center to center.	Per packer			
6.6	MR	Sealing of Tie Rod Holes:				
		Sealing the periphery of sockets, grooves with Non Shrink micro concrete or equivalent to be placed in between form works before concreting, preferably placed in the centre of the wall thickness, one no for each buried or embedded Tie Rod. At all heights and levels of RCC wall.. Removing of tie rod hole will be main contractors scope.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		

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6.7	SSR 52.25	Lift pit Waterproofing Clean the existing surface of Lift Pit thoroughly to remove dirt, loose particles, laitance etc. For emergency waterproofing of existing terrace. Use a vacuum cleaner or high pressure jet or wire brushing as per requirement. Examine the surface closely for any cracks. Fill it with acrylic polymeric non-shrink crack filler putty as approved by Engineer in charge a pure aliphatic, acrylic, polymer modified ready to use paste. After filling, allow the surface to dry for atleast 24 hrs. If the depth of the crack is more than 2-3 mm apply in layers at intervals. Moisten the surface with a water jet one day prior to the application of waterproofing coating. Mix 1 part of 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) membrane as approved by Engineer in charge and 1 part of grey cement by weight using a low speed mechanical stirrer to form slurry lump free consistency. Apply this as a primer coat of 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) membrane as approved by Engineer in charge. Apply the same slurry by roller at 24 hrs interval between the applications of each coat. Allow the primer coat to set for 24 hrs. After the primer coat is set, apply two coats of pure enoate based polymer titanium dioxide based 2-(methoxycarbonyl)-1-propene-butyl-2 propenoate (TMPBP) and 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) of waterproof coating as approved by Engineer in charge on surface. Ensure that no pinholes are let untouched. Allow the membrane to cure for 24-48 hours. Single Component, UV Resistant, Elastomeric, High Build Waterproof Coating (Confirming to DIN 1048) should have following minimum properties: 1) Elongation % (ASTM D 638): @ 400% 2) Tensile Strength (ASTM D 412): 150 psi 3) Water Permeability (DIN 1048): Zero 4) Solids: > 65% 5) pH: 8.5 - 10.5	Sqm.	SSR 52.25 - As directed by Engineer in charge	434	
		UG Tanks (Internal) Waterproofing				
6.8	SSR 52.23	Waterproofing Treatment to new UG tank by using Polymeric Cementitious Membrane as approved by Engineer in charge, followed by 20 mm mortar finish. If there are cracks on the bare slab, open the crack in V Groove and fill it with ready to use repair polymer modified mortar based on special cements, aldehyde based polymers with thixotropy modifying agents. If there are lots of honeycombs and identified bad patches of concrete the same should be grouted as per the instructions of site incharge. Clean the entire surface thoroughly and over this prepared surface, apply three coats of polymeric Cementitious waterproofing coating having a non-toxic, 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) based polymeric waterproofing solution as approved by Engineer in charge. Finish with 20 mm thick cement plaster in cement mortar 1:3 by mixing one 330 grams pouch of above admixture per 50 Kg bag of cement. (No water shall be added in any of three waterproofing coat) Waterproofing Coating for Concrete and Masonry should have following minimum properties: 1) Elongation % (ASTM D412-2016): @ 100% 2) Tensile Strength N/mm2 (ASTM D412-2016): 3.3, 3) Specific Gravity: 1.02 ± 0.02 4) Total Solids (ASTM D1644-2012): 43.98 5) Hardness Shore A (ASTM D2240-2015): 82	Sqm.	SSR 52.23- As directed by Engineer in charge	434	
		Sealing/Packing joints in Outlets Pipes: (Considered upto 200mm dia)				
6.9	MR	Cleaning the surface properly with the help of required tools, tackles etc. Providing and applying 200 mm wide band on construction joint, it should be on 100mm wide on either side from centre of construction joints with one coat of Sunprime PU primer of Sunanda specialty coatings pvt ltd followed by two coats of Elastorof PU of Sunanda specialty coatings pvt ltd on construction joints surface.	Rmt	MR - As per Manufacturer's Recommendation & Technical Specification		
6.10	MR	Sealing/packing all joints of outlet pipes, etc. with a non-shrink cementitious grout or microconcrete and topping it with waterproofing membrane including providing necessary formwork for packing the bore & applying a bonding coat to enhance adhesion between the packing material and other surfaces.	Nos	MR - As per Manufacturer's Recommendation & Technical Specification		
		Toilet Waterproofing (Flooring)				
6.11	SSR 52.23	Waterproofing Treatment to plastered surface of toilet & bathroom walls minimum up to 90 cm (Dado) by using 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) based polymeric waterproofing solution as approved by Engineer in charge. Clean the entire surface thoroughly and over this prepared surface, apply three coats of 2(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) based polymeric waterproofing solution as approved by Engineer in charge. While the 3 coat is wet broadcast sand on the surface. Provide 20 mm thick cement plaster in CM 1:3 with one pouch of 330 grams of thorough blend of special cements, aldehyde based polymers, shrinkage compensating agents as approved by Engineer in charge per 50 Kg bag of cement including all lead, lifts ,curing etc complete. Acrylic Polymeric Waterproofing Coating for Concrete and Masonry should have following minimum properties: 1. Elongation % (ASTM D412-2016): @ 100% 2. Tensile Strength N/mm2 (ASTM D412-2016): 3.3 3. Specific Gravity: 1.02 ± 0.02 4. Total Solids (ASTM D1644-2012): 43.98 5. Hardness Shore A (ASTM D2240-2015): 82 It shall be applied as per manufacturer's specification.		SSR 52.23- As directed by Engineer in charge	434	
6.12	SSR 31.26	Providing waterproofing in W.C. and bath including brick bat coba in all position including providing and laying 12mm bedding in cement mortar 1:3 on vergin concrete slab with waterproofing compound @ 1Kilogram/per bag of cement laying brick bat coba of required thickness in cm 1:5 with waterproofing compound 1 Kilogram/bag of cement grouting and finishing the top layer with 20mm thick brick bedding in cm mortar 1:3 with waterproofing compound 1 Kilogram/per bag of cement and testing the treated portion for 48 hours by pond test and covering ten years' guarantee on requisite stamp paper including curing etc. complete.		SSR 31.26 - As directed by Engineer in charge	208	
		Chajja Waterproofing				

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6.13	SSR 52.25	Clean the existing surface of Chajja thoroughly to remove dirt, loose particles, laitance etc. For emergency waterproofing of existing terrace. Use a vacuum cleaner or high pressure jet or wire brushing as per requirement. Examine the surface closely for any cracks. Fill it with acrylic polymeric non-shrink crack filler putty as approved by Engineer in charge a pure aliphatic, acrylic, polymer modified ready to use paste. After filling, allow the surface to dry for atleast 24 hrs. If the depth of the crack is more than 2-3 mm apply in layers at intervals. Moistened the surface with a water jet one day prior to the application of waterproofing coating. Mix 1 part of 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) membrane as approved by Engineer in charge and 1 part of grey cement by weight using a low speed mechanical stirrer to form slurry lump free consistency. Apply this as a primer coat of 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) membrane as approved by Engineer in charge. Apply the same slurry by roller at 24 hrs interval between the applications of each coat. Extend the coating to parapet walls. Allow the primer coat to set for 24 hrs. After the primer coat is set, apply two coats of pure enoate based polymer titanium dioxide based 2-(methoxycarbonyl)-1-propene-butyl-2 propenoate (TMPBP) and 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) of waterproof coating as approved by Engineer in charge on surface. Ensure that no pinholes are let untouched. Allow the membrane to cure for 24-48 hours. Single Component, UV Resistant, Elastomeric, High Build Waterproof Coating (Confirming to DIN 1048) should have following minimum properties: 1) Elongation % (ASTM D 638): @ 400% 2) Tensile Strength (ASTM D 412): 150 psi 3) Water Permeability (DIN 1048): Zero 4) Solids: > 65%, 5) pH: 8.5 - 10.5		SSR 52.25 - As directed by Engineer Incharge	434	
Refuge Area Waterproofing (150mm Sunk)						
6.14	PWD SSR-2022-23 item 52.15	Waterproofing treatment to new terrace (Refuge Area) by using chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane as approved by Engineer in charge, followed by average 112mm thick brick bat coba covered with 40mm IPS. The procedure includes filling of cracks on the RCC slab with chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane. Clean the entire surface thoroughly and over this prepared surface, apply a primer coat of CPTP admixed appropriately in dimethyl benzene as approved by Engineer in charge. Apply the primer by roller. Extend the coating to parapet walls including the top of parapet. Allow the primer coat to set for 24 hrs. After the primer coat is set, apply two coats of continuous chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane as approved by Engineer in charge on surface. Ensure that pinholes are touched up properly. While the second coat of CPTP is wet and tacky, sprinkle coarse sand over the surface to make it rough and provide mechanical key for further treatment. Provide and lay average 15 mm thk protective coat of CM in 1:4 over the surface and allow to set and cure. Provide and lay 112 mm thk BB coba in average thickness in cement mortar 1:5 with one pouch of 330 grams of thorough blend of special cements, aldehyde based polymers, shrinkage compensating agents as approved by Engineer in charge per 50 Kg bag of cement and finishing with 40 mm thick IPS layer in CC M – 20 by mixing one pouch of 330 grams of above per 50 Kg bag of cement, including all lead, lifts and laid to proper slope to drain off water entirely preparing bell mouth including watta, beveled or champhered portion at the junction of parapet and work up to a height of 300 mm or as directed and including finishing the top layer of waterproofing treatment with false marking of 30 cm x 30 cm or as directed, curing and covering the whole treatment. Single Component, Liquid Applied, chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane should have following minimum properties: 1) Specific Gravity: 1.30 ± 0.1 2) Elongation %: >600 3) Tack Free Time: 24-48 hrs 4) Tensile Strength N/mm2: 2.1 5) Shore Hardness: 40 ± 5	Sqm.	PWD SSR-2022-23 item 52.15 - As directed by Engineer in charge	426	
OH Tank (Internal)						
6.15	SSR 52.23	Waterproofing Treatment to plastered surface of toilet & bathroom walls minimum up to 90 cm (Dado) by using 2-(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) based polymeric waterproofing solution as approved by Engineer in charge. Clean the entire surface thoroughly and over this prepared surface, apply three coats of 2(methoxycarbonyl)-1-propene-Butyl-2 propenoate (MPBP) based polymeric waterproofing solution as approved by Engineer in charge. While the 3 coat is wet broadcast sand on the surface. Provide 20 mm thick cement plaster in CM 1:3 with one pouch of 330 grams of thorough blend of special cements, aldehyde based polymers, shrinkage compensating agents as approved by Engineer in charge per 50 Kg bag of cement including all lead, lifts, curing etc complete. Acrylic Polymeric Waterproofing Coating for Concrete and Masonry should have following minimum properties: 1. Elongation % (ASTM D412-2016): @ 100% 2. Tensile Strength N/mm2 (ASTM D412-2016): 3.3 3. Specific Gravity: 1.02 ± 0.02 4. Total Solids (ASTM D1644-2012): 43.98 5. Hardness Shore A (ASTM D2240-2015): 82 It shall be applied as per manufacturer's specification.	Sqm.	PWD SSR-2022-23 item 52.23 - As directed by Engineer in charge	433	
6.16	MR	Sealing/packing all joints of outlet pipes, etc. with a non-shrink cementitious grout or microconcrete and topping it with waterproofing membrane of Elastorof PU including providing necessary formwork for packing the bore & applying a bonding coat to enhance adhesion between the packing material and other surfaces.	Nos	MR - As per Manufacturer's Recommendation & Technical Specification		

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6.17	PWD SSR-2022-23 item 52.15	Terrace Waterproofing (Flooring & Walls) Waterproofing treatment to new terrace by using chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane as approved by Engineer in charge, followed by average 112mm thick brick bat coba covered with 40mm IPS. The procedure includes filling of cracks on the RCC slab with chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane. Clean the entire surface thoroughly and over this prepared surface, apply a primer coat of CPTP admixed appropriately in dimethyl benzene Primer as approved by Engineer in charge. Apply the primer by roller. Extend the coating to parapet walls including the top of parapet. Allow the primer coat to set for 24 hrs. After the primer coat is set, apply two coats of continuous chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane as approved by Engineer in charge on surface. Ensure that pinholes are touched up properly. While the second coat of CPTP is wet and tacky, sprinkle coarse sand over the surface to make it rough and provide mechanical key for further treatment. Provide and lay average 15 mm thk protective coat of CM in 1:4 over the surface and allow to set and cure. Provide and lay 112 mm thk BB coba in average thickness in cement mortar 1:5 with one pouch of thorough blend of special cements, aldehyde based polymers, shrinkage compensating agents - which is based on special cements, aldehyde based polymers, shrinkage compensating agents and selected sands having high abrasion resistance as approved by Engineer in charge per 50 Kg bag of cement and finishing with 40 mm thick IPS layer in CC M – 20 by mixing one pouch of 330 grams of thorough blend of special cements, aldehyde based polymers, shrinkage compensating agents per 50 Kg bag of cement, including all lead, lifts and laid to proper slope to drain off water entirely preparing bell mouth including watta, beveled or chamfered portion at the junction of parapet and work up to a height of 300 mm or as directed and including finishing the top layer of waterproofing treatment with false marking of 30 cm x 30 cm or as directed, curing and covering the whole treatment. Single Component, Liquid Applied, chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane should have following minimum properties: 1) Specific Gravity: 1.30 ± 0.1, 2) Elongation % : >600, 3) Tack Free Time: 24-48 hrs, 4) Tensile Strength N/mm ² : 2.1, 5) Shore Hardness: 40 ± 5	Sqm.	PWD SSR-2022-23 item 52.15 - As directed by Engineer in charge	426	
	i	LMR, OH Tank Top / Mumty Top Waterproofing				
	ii	Terrace Waterproofing (Flooring & Walls)				
	iii	Open to sky Landscape / Recreational Terrace				
	iv	FOR PLANTER BOXES CONTAINING SMALL SHRUBS (shrubs, small plants)				
		Entire Waterproofing of 1st, 2nd, 3rd floor of Fish Market				
6.18	MR	Waterproofing treatment to new terrace (Fish Market Slab Portion) by using chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane as approved by Engineer in charge, followed by 40mm IPS. The procedure includes filling of cracks on the RCC slab with chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane. Clean the entire surface thoroughly and over this prepared surface, apply a primer coat of CPTP admixed appropriately in dimethyl benzene as approved by Engineer in charge. Apply the primer by roller. Extend the coating to parapet walls including the top of parapet. Allow the primer coat to set for 24 hrs. After the primer coat is set, apply two coats of continuous chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane as approved by Engineer in charge on surface. Ensure that pinholes are touched up properly. While the second coat of CPTP is wet and tacky, sprinkle coarse sand over the surface to make it rough and provide mechanical key for further treatment. Provide 40 mm thick IPS layer in CC M – 20 by mixing one pouch of 330 grams of above per 50 Kg bag of cement, including all lead, lifts and laid to proper slope to drain off water entirely preparing bell mouth including watta, beveled or chamfered portion at the junction of parapet and work up to a height of 300 mm or as directed and including finishing the top layer of waterproofing treatment with false marking of 30 cm x 30 cm or as directed, curing and covering the whole treatment. Single Component, Liquid Applied, chlorinated paraffinated talcum polyurethane (CPTP) elastomeric membrane should have following minimum properties: 1) Specific Gravity: 1.30 ± 0.1 2) Elongation % : >600 3) Tack Free Time: 24-48 hrs 4) Tensile Strength N/mm ² : 2.1 5) Shore Hardness: 40 ± 5		MR - As per Manufacturer's Recommendation & Technical Specification		
6.19	SSR 52.30	For Strengthening of concrete RCC. Columns, Beams, Slabs, Foundation etc. Execute the work as follows. Remove dust, laitance, grease, oil, curing compounds, waxes, foreign particles, coatings and disintegrated materials by mechanical means (i.e., blast cleaning). Empty entire pre-packed and pre_x0002_weighted contents of 'B' Component into pail containing 'A' Component. Mix for 30 seconds with a low speed stirrer. (400- 600 rpm). After proper mixing of component 'A' and 'B', now empty entire pre-packed and pre-weighted part 'C' component into the mix and using a mechanical stirrer mix all the components for 1-3 minutes with a low speed stirrer (400 to 600 rpm). Caution: Mix only that limited quantity which can be placed within the pot life. Material should be quickly brushed/poured from pail onto concrete surface to obtain prolonged working life. Inspect the underside for evidence of full depth cracks that may require additional treatment to prevent draining of the resin. The above Material is applied at rate of 3kg/Sqm. on the surface. Low Viscosity, Transparent, Three Component, 2-(methoxycarbonyl)-1-Propene Resin Sealer Cum Grout should have following minimum properties: 1. Viscosity: < 5 cps 2. Flexural Strength (ASTM D-790): 1 day - 17.2 MPa 3. Bond Strength (ASTM C-882): 2 days - 14.4 MPa (Dry Cure); 14 days - 15.8 MPa (Moist cure) 4. Volume Solids % : ~100	Kg	PWD SSR-2022-23 item 52.30 - As directed by Engineer in charge	437	

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6.20	MR	Providing & Applying Primer coat of Two Component High Viscosity Epoxy Resin having high chemical resistance SUNEPOXY 358 of SUNANDA SPECIALITY COATING PVT.LTD or other approved equivalent Over completely de dusted surface coated with POLYALK 2MIP as per Manufacture specification.FOLLOWED 2MM Thick Self Leveling Epoxy based Monolithic Underlay Flooring having high chmical and abrasion resistance of Nuclear grade Suneoxy SL of SUNANDA SPECIALITY COATINGS PVT LTD or other approved equivalent as per manufacturer specifications Followed by 1mm thick Flow Applied; Epoxy Resin based SUNEPOXY SL TOP COAT of SUNANDA SPECIALITY COATINGS PVT.LTD or other approved equivalent. Its Monolithic Excellent resistance to wide range of chemicals and abrasion resistance sprinkled with fine R130C grade quartz sand . having following minimum properties: Compressive Strength (ASTM C 579/ EN 196-1) >60 N/mm2, Tensile Strength (ASTM C 307) >40 N/mm2	Sqm	MR - As per Manufacturer's Recommendation & Technical Specification		
		For New Concrete				
6.21	MR	Ready to use integral crystalline water proofing admixture in concrete. Crystalline mix shall consist of Portland cement, very fine treated silica sand and various active proprietary chemicals.These active chemicals shall be capable to react with the moisture in fresh concrete with the by-products of cement hydration to cause a catalytic reaction, which generates a non-soluble crystalline formation throughout the pores and capillary tracks of the concrete to permanently seal against the penetration of water or liquids from any direction.Partical size shall be approximately 40 ro 150 microns,relative bulk density 1.40,hydrostatic head 160 M,self sealing 0.50 mm, Permeability Reduction (DIN 1048)>90%, Conformance ACI 212.3R.2010. The suncrystalline mix shall be used 0.80%of the cementitious material or as per manufacturers specifications..	Cum	MR - As per Manufacturer's Recommendation & Technical Specification		
6.22	MR	Clean existing dowells bar from Raft using High Pressure water jet allowing it to dry followed by cleaning the reinforcement dowell bars using Alkaline Rust Removal cum passivator Rusticide of SUNANDAS SPECIALITY COATING LTD. OR other approved equivalent using collotn using waste swab. Conformance I.S. 9077-1979 (reaffirmed-1997).	Kg	MR - As per Manufacturer's Recommendation & Technical Specification		
		Sub-head 6 Total: Rs. -----/-				
7		SH : 7 Miscellaneous & Demolition Work				
7.1	SSR 5.14	Providing and fixing in position HCRM / CRS (TMT FE 500), 32 mm dia dowel bars precoated with anticorrosive epoxy paint of required Dia. 60 cms. Long and at 30.00 cm. C/C and wherever directed including handling, straightening, necessary cutting supported by TMT FE 500, chairs with proper alignment by using properly designed assembly of Bulkheads lubricating half length with bituminous paint as directed etc. complete.	No.	SSR 5.14 - MORTH 602.6.5	43	
7.2	SSR 5.15	Providing and fixing in position HCRM / CRS (TMT FE 500), 25mm dia dowel bars precoated with anticorrosive epoxy paint of required Dia. 60 cms. Long and at 30.00 cm. C/C and wherever directed including handling, straightening, necessary cutting supported by TMT FE 500, chairs with proper alignment by using properly designed assembly of Bulkheads lubricating half length with bituminous paint as directed etc. complete.	No.	SSR 5.15 - MORTH 602.6.5	43	
7.3	SSR 5.16	Providing and fixing in position HCRM / TMT FE 500, tie bars precoated with anticorrosive epoxy paint of 12 mm dia. 70 cms.long and at 30.00 cm. C/C and wherever directed including handling, straightening wrapping with paper of approved quality for half length, necessary cutting, handling, straightening , supported by assembly of TMT FE 500, chairs with proper alignment etc. complete.	No.	SSR 5.16 - MORTH 602.6.4.2	43	
7.4		Supplying, Drilling/Cleaning hole and injecting Hilti make ETA approved HIT-RE500-V4 chemical. The product should be approved by EAD 332402/ 330087, ETA, ICC, CSTB, COLA, BZS with Shock approval, Seismic approval in Rebars to use in cracked/un-cracked concrete, tested for service temperature of -40deg C to +80 deg C. The chemical should have ETA for service life of 100 years and is to be tested for water tightness. Application to be designed separately for Rebars as Simply Supported, Moment or Splice Connection as per EC2 TR023/ HIT Rebar Method/ TR 069 or relevant tested and accepted rebar guidelines. Drilling hole with Safe-set Hollow Drill Bit technology to ensure dust-free clean holes and proper bonding of chemical to the required depth, filling resin and hardener using serrated nozzle to eliminate mixing error with standard HDE A12 battery dispenser along with piston plug and extension hose for longer depths to ensure no air bubbles are in the hole and then fixing rebar, conducting occasional site inspection, executing work by trained personnel and occasional supervision from the manufacturer's representative in India. The installation and the setting instructions should be strictly followed as per the manufacturer's recommendations. The rebaring connections shall be designed in software and embedment of rebars to be decided as per PROFIS Software report & the report to be submitted to the project manager/ design engineer for approval. Scanning before drilling to be done with HILTI PS300 tool to avoid hitting existing rebars.		SSR 53.05 - Bd.C.2 Page No. 275	275	
7.4.1	53.05	20mm dia rebar at 400mm depth				
7.4.2	53.06	25mm dia rebar at 500mm depth		SSR 53.06 - Bd.C.2 Page No. 275	275	
7.5	MR	For Utility Mapping/Utility diversion provision is considered for foundation work or similar location	Lumpsum	MR - As per Manufacturer's Recommendation & Technical Specification		
7.6	R2-CS-RM-108	Grouting pockets, holes, pipe sleeves of any shape or size for column bases, machine foundation etc with ready to use non shrink high strength grout of approved make as per manufacturers specification & instructions/ recommendations including roughing of surface, cleaning with compresses air / water jets, ramming, curing etc complete .	Kg	R2-CS-RM-108	222	

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7.7	R2-CS-RM-71	Providing and maintaining Barricading on the site 5 m high by using MS Pipes or angle iron frame work of verticals at 3 m c/c and horizontals at 0.90 m c/c, Galvalume sheets, Struts, MS Clamps, etc. The verticals shall be embedded/ fixed to concrete pedestals below ground. The rate to include fabricating, cutting and fixing in position MS frame work, painting the same with two coats of approved anti rust paint, etc complete. Contractor to get structural design approved by the Engineer. Contractor shall remove and take away the barricading at his own cost on completion of the works	Rmt	R2-CS-RM-71	222	
7.8	R3-CS-CW-6-a	Providing precast cement concrete Jali of Nominal Mix 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6mm nominal size) reinforced with 1.6 mm dia mild steel wire including centering and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete excluding plastering of the jambs, sills and soffits. including of 200 x 200 x 900 mm RCC Post c/c with 1400 mm c/c as per detailed drawing as per Architect/Engineer incharge. (From 1st Floor to 9th floor level)---100mm thk		R3-CS-CW-6-a	13	
DISMANTLING AND DEMOLISHING WORK						
7.9	CPWD 15.3	Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50 metres lead as per direction of Engineer - in- charge. (Capping beam, PCC piles & Shore piles)	Cum	CPWD 15.3	287	
7.10	CPWD 15.7.4	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.	Cum	CPWD 15.7.4	287	
7.11	CPWD 15.17	Dismantling steel work in single sections including dismembering and stacking within 50 metres lead in: (Wailer beams, angles, plates etc.)		CPWD 15.17	288	
i	CPWD 15.17.1	R.S. Joists	Kg	CPWD 15.17.1	288	
ii	CPWD 15.17.2	Channels, angles, tees and flats	Kg	CPWD 15.17.2	288	
7.12	CPWD 15.18	Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50 metres lead. (Strut Members like 2 ISMB, 4 ISMB, 2 ISMC etc.)	Kg	CPWD 15.18	288	
Structural Steel						
7.13	SSR 40.06	Providing and fixing 40mm diameter and 1.5 mm thick Stainless steel hand railing in S.S.304 Grade including fabricating ,fixtures, erecting, necessary welding, grinding, finishing, buffing to stainless steel pipe etc. complete	Rmt	SSR 40.06, As directed by Engineer Incharge	264	
7.14	40.07	Providing and fixing 900mm high S.S.304 Grade Stainless steel railing with 40 mm diameter and 1.5mm thick at top, 40mm diameter and 1.5mm thick vertical supports spaced at 1.5m center to center and 8mm thick toughened glass including fabricating , fixtures, erecting, necessary welding, grinding, finishing, buffing to stainless steel pipe etc. complete.	Rmt	SSR 40.06, As directed by Engineer Incharge	264	
Section B : Finishing Work						
SH : 1 Block Work						
1.1	SSR 27.15	Providing Autoclaved Aerated Concrete Block masonry of conforming to IS:2185 (Part 3) - 1984 in extra fine jointing mortar of fixoblock of UltraTech or equivalent in superstructure including striking joints, raking out joints and scaffolding etc. Complete. (The test shall be carried out conforming to IS:6441 (Part I) - 1972)	Cum	SSR 27.15- As directed by engineer in charge	198	
1.2	SSR 27.15	Providing Autoclaved Aerated Concrete Block masonry of Ecolite or equivalent make conforming to IS:2185(Part3)-1984 in extra fine jointing mortar of fixoblock of Ultra Tech or equivalent in superstructure including striking joints, raking out joints and scaffolding etc .Complete. (The test shall be carried out conforming to IS:6441 (Part I) - 1972) (Internal partition Toilet 150mm)	Cum	SSR 27.15- As directed by engineer in charge	198	
1.3	27.16	Providing Autoclaved Aerated Concrete Block masonry of conforming to IS:2185 (Part 3) - 1984 in extra fine jointing mortar of fixoblock of UltraTech or equivalent in Half brick thick wall including striking joints, raking out joints and scaffolding etc. Complete. (The test shall be carried out conforming to IS:6441 (Part I) - 1972)	Sqm	SSR 27.16- As directed by engineer in charge	198	
1.4	27.01	Providing second class Burnt Brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in foundations and plinth of inner walls/ in plinth external walls including bailing out water manually , striking joints on unexposed faces, raking out joints on exposed faces and watering etc. Complete.	Cum	SSR 27.01- Bd.G. 1 Page One Number 313	313	
1.5	27.05	Providing second class Burnt Brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in superstructure including striking joints, raking out joints, watering and scaffolding etc. Complete	Cum	SSR 27.05 - Bd.G.5 Page One Number 315	315	

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2						
SH : 2 Plastering Works						
2.1	SSR 31.06	Providing waterproof plaster in W.C. and bath 12 mm thick for dado in cement mortar 1:3 with neat finishing, floating using waterproofing compound at the rate of 1 kg. per bag of cement of approved make and manufacturer and curing etc. complete.	Sqm.	SSR 31.06 - As directed by Engineer in charge	205	
2.2	SSR 32.31	Providing and applying gypsum vermiculite plaster (with Gypsum material of Gypsum India/Mega Sign or equivalent make) with finishing with gypsum material in 10 to 13 millimeter thickness to previously plastered surface/or on newly brick surface (Excluding rough cast plaster) in all position including preparing and Finishing the surface scaffolding etc. complete.	Sqm.	SSR 32.31 - As directed by Engineer in charge	211	
2.3 (a)	SSR 32.34	Providing and applying Two coats of wall care Putty on plastered surface and Ceiling and Walls to prepare surface even and smooth of approved make, etc complete.	Sqm.	SSR 32.34 - As directed by Engineer Incharge	212	
2.3 (b)	SSR 32.34	Providing and applying Two coats of wall care Putty on plastered surface and Ceiling and Walls to prepare surface even and smooth of approved make, etc complete.	Sqm.	SSR 32.34 - As directed by Engineer Incharge	212	
2.4	SSR 32.04	Providing internal cement plaster 12mm thick in single coat in cement mortar 1:4 without neeru finish to concrete or brick surfaces, in all positions including scaffolding and curing etc. complete.	Sqm.	SSR 32.04 - Bd. L.2	368	
2.5	SSR 32.26	Providing and fixing chicken mesh of 22 gauge , with about 30 cm. width at the junction of R.C.C members and brick work, of approved quality including fixing mesh in position by necessary drilling in concrete /B.B.masonry and or tying by binding wire etc. complete.	Rmt	SSR 32.26 - As directed by Engineer Incharge	210	
2.6	R3-CS-PL-26	Providing and applying cement plaster for band projections of 25 to 30mm thk. and 75 to 125 mm wide, with smooth/ decorative/ rough finished surface, at all heights and locations in cement mortar 1:3 for masonry (except stone masonry) and concrete surfaces including, racking out joints, hacking of concrete surface, finishing, curing, scaffolding etc complete as directed By Engineer In Charge.	Rmt	MCGM SOR 2023 R3-CS-PL-26	46	
2.7	SSR 32.11	Providing sand faced polymer plaster externally (with polymer material of Fosroc, Pidilite, Basf, Sunanda, krushna conchem or its approved equivalent make) in cement mortar using approved screened sand, in all positions including base coat of 15mm thick in cement mortar 1:4 using waterproofing compound at 1kg per cement bag curing the same for not less than 2 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mm thick in cement mortar 1:4 finishing the surface by taking out grains and curing for fourteen days scaffolding etc. containing special type of polymer additives to all type of surfaces in all positions including scaffolding and curing complete (ground to service floor & above terrace floor)	Sqm.	SSR 32.11 - Bd.L.7	369	
2.8	SSR 32.01	Providing internal plaster 6mm thk in a single coat C.M 1:4 without neeru finish to concrete surface in all positions including scaffolding and curing etc. complete	Sqm.	SSR 32.01 - Bd.L.1	367	
3						
SH: 3 Flooring Work						
3.1	SSR 33.06	Providing and laying machine cut machine Polished Kota stone flooring 25mm to 30mm thick and required width in plain/ diamond pattern on bed of 1:6 C. M. including cement float, filling joints with neat cement slurry, curing, polishing and cleaning etc. complete		SSR 33.06 - Bd.M.3	380	
3.2	SSR 33.18	Providing and laying machine cut machine polished machine cut Kota stone slabs 20 to 25 mm thick for treads and risers of steps and staircases, with rounded No.ing for the treads on a bed of 1:4 cement mortar including cement float, filling joints with neat cement slurry, curing, polishing and cleaning etc. complete. (for staircase Basement to terrace)		SSR 33.18 - Bd.M.22	390	
3.3	R3-CS-FL-59	2 to 3mm wide and 3mm deep grooving on the stone work specified below as directed by Engineer In Charge. Shahbad stone/ Kadappa stone/ Tandur stone/ Kota stone/ Any type of marble/ Any type of Granite stone (For Staircase kota from Basement to Terrace floor)		R3-CS-FL-59	90	
3.4	SSR 33.81	Providing and fixing in required position skirting or dado of polished Kotah Stone slab 25 mm to 30 mm thick fixed on base on plaster of cement mortar 1:4 including cement float, filling joints with cement slurry, curing rubbing, polishing and cleaning complete. 100mm height		SSR 33.81 - As directed by Engineer In charge	221	
3.5	SSR 33.67	Providing and laying Antiskid Ceramic tiles of approved quality of size 30cmx30cm and confirming to IS15622-2006 (Group-BIIA) for antiskid flooring in required position laid on a bed of 1:4 cement mortar including cement float, filling joint with cement slurry cleaning curing etc. complete.. (Toilet area)		SSR 33.67 - Bd.M.22	385	
3.6	R3-CS-FL-32 C/D	Providing and fixing 8mm thk. ceramic tiles as specified below conforming to I.S. 15622-2006 of approved quality, pattern and colour for dado in the wet area including preparing the surface and leveling in the desired line, backing of 20 thk. cement mortar in porportion 1:3 with approved waterproofing compound, square cut top edge or chamfered top edge in cement mortar 1:3, cement float, machine cutting, leveling, jointing, filling the joints with neat cement slurry or approved colour grout, finishing, curing etc complete as directed by Engineer In Charge. Size 300x300mm Light/dark coloured antiskid / matt ceramic tiles (Toilet Dado)		R3-CS-FL-32 C/D	82	
3.7	SSR 33.42	Providing and laying vitrified matt finish tiles having size 590 mm to 605 mm x to 605 mm of 8 to 10 mm thickness and confirming IS. 15622-2006 (Group Bla) of approved make, shade and pattern for flooring in required position laid on a bed of 1:4 cement morar including neat cement float, filling joints, curing and cleaning etc. complete.		SSR 33.42 - Bd.M.12	385	
3.8	SSR 33.43	Providing and laying vitrified matt finish tiles having size 590 mm to 605 mm x to 605 mm of 8 to 10 mm thickness and confirming IS. 15622-2006 (Group Bla) of approved make, shade and pattern for dado and skirting in required position fixed in 1:4 cement mortar including neat cement float, filling joints, curing and cleaning etc. complete.		SSR 33.43 - Bd.M.12	385	
3.9	R3-CS-FL-79	Providing & fixing 20+2 mm thick machine cut mirror polish 1st quality Granite riser 150mm ht. for staircase (black galaxy or approved) polished,including backing coat of 1:4 cement plaster/mortar/cement paste , cleaning etc. complete as per Architects details drawingand design	Sqm.	R3-CS-FL-79	93	
3.10	R3-CS-FL-80	Providing & fixing 20 +mm thick machine cut mirror polish 1st quality Granite treads 300mm wide for staircase (black galaxy or approved) including grooves and edge moulding & polishing with backing coat of 1:4 cement plaster/mortar/cement paste,cleaning etc.complete as perArchitects details drawing and design	Sqm.	R3-CS-FL-80	93	

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				Specification No.	Page No.	
3.11	CPWD 11.55	Providing and laying flamed finish Granite stone flooring in required design and patterns, in linear as well as curvilinear portions of the building all complete as per the architectural drawings with 18 mm thick stone slab over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with cement slurry and pointing with white cement slurry admixed with pigment of matching shade including rubbing, curing and polishing etc. all complete as specified and as directed by the Engineer-in-Charge : 11.55.1 Flamed finish granite stone slab Jet Black, Cherry Red, Elite Brown, Cat Eye or equivalent.)		CPWD 11.55	228	
3.12	SSR 33.68	Providing and laying telephone black / Amba White / Cadbury brown / Ruby red / Ocean Brown granite stone of 18 to 20 mm thick for door frame/ dado/ window boxing etc. On C.M. 1:6 including filling joints with polymer base filler No.ing/moulding the sharp edges wherever necessary, curing, etc. complete.	Sqm.	SSR 33.68 - As directed by Engineer-In- Charge	220	
3.13	R2-CS-FL-83	Providing & fixing in position 20 +/-2mm thick machine cut, mirror polished, 1st quality granite cladding such as black galaxy or approved equivalent in lift lobby / passage installed in approved pattern and design of size 600 x 1200mm and as directed including backingcoat of 1:4 cement plaster of required thickness with stainless steelfasteners cleats etc. The joint between the granite slabs to be filled white cement mixed with with matching pigments. The rate to include all curing, polishing at all lift and levels.	Sqm.	MCGM SOR 2023 R2-CS-FL-83	94	
3.14	SSR 33.48	Providing and fixing green marble of 18 to 20 mm thick for door frame/ dado/ window boxing etc. On C.M. 1:6 including filling joints with polymer base filler No.ing / moulding the sharp edges wherever necessary, curing, etc. complete	Sqm.	SSR 33.48 - Bd. M. 12	218	
3.15	R3-CS-FL-16	Providing and laying 16-20 mm thick and 75mm wide strips of rough jet black Granite stone (or equivalent) of approved colour, on ramp to get anti-skid effect including cement mortar bedding of 25 mm thick in 1:4 proportion, cement float, machine cutting, dressing, leveling, jointing, filling the joints with neat cement slurry or with required pigment, curing, finishing etc. complete as directed by Engineer-incharge.	Sqm.	MCGM SOR 2023 R3-CS-FL-16	76	
3.16	SSR 33.36	Providing and fixing machine cut mirror polished 18 mm to 20 mm thick telephone black granite / Amba White / Cat bary brown / RBI red / Ocean Brown granite stone partition with full moulding the edges etc. complete . Both side polish	Sqm.	SSR 33.36 - Bd.M.35 B	393	
3.17	SSR 33.54	Providing and fixing heavy duty interlocking concrete Rubber mould glossy paving blocks of 80mm thickness of having a strength of 400 Kilogram / Sq.cm. of approved quality and shape on a bed of crushed sand of 25 to 30mm thick including skirting joints and cleaning etc.complete. (using 100% crushed sand) (Open space) if required	Sqm.	SSR 33.54 - Bd. M	219	
3.18	SSR 33.31	Providing and laying in situ cement concrete M20 with tremix treatment for 100 mm thickness for flooring with groove cutting of 4mm wide and 20mm deep with necessary refilling with bitumen etc. complete.	Sqm.	SSR 33.31 - As directed by Engineer in charge	216	
3.19	MR	Providing & Applying Primer coat of Two Component High Viscosity Epoxy Resin having high chemical resistance SUNEPOXY 358 of SUNANDA SPECIALITY COATING PVT.LTD or other approved equivalent Over completely de dusted surface coated with POLYALK 2MIP as per Manufacture specification.FOLLOWED 2MM Thick Self Leveling Epoxy based Monolithic Underlay Flooring having high chmical and abrasion resistance of Nuclear grade Sunepoxy SL of SUNANDA SPECIALITY COATINGS PVT LTD or other approved equivalent as per manufacturer specifications Followed by 1mm thick Flow Applied; Epoxy Resin based SUNEPOXY SL TOP COAT of SUNANDA SPECIALITY COATINGS PVT.LTD or other approved equivalent. Its Monolithic Excellent resistance to wide range of chemicals and abrasion resistance sprinkled with fine R130C grade quartz sand . having following minimum properties: Compressive Strength (ASTM C 579/ EN 196-1) >60 N/mm2 Tensile Strength (ASTM C 307) >40 N/mm2	Sqm.	MR - As per Manufacturer's Recommendation & Technical Specification		
3.20	SSR 33.37	Providing and fixing machine cut mirror polished 18 mm to 20 mm thick telephone black / Amba White / Cat bary brown / RBI red / Ocean Brown granite stone partition with full moulding the edges etc. complete. One side polish 600mm thick Granite Platform for Seating above 1000mm concrete surface for fish Market	Sqm	SSR 33.37 - Bd.M.35 B/Page One Number 393	393	
3.21	MR	Providing and laying in required position flooring and skirting of broken china (broken pieces of ceramic tiles) of approved colour and pattern bedding of 1:4 cement mortar including neat cement float, giving proper shoes, compaction, curing & finishing etc. complete (0.30 cement bag per sqm)	Sqm	MR - As per Manufacturer's Recommendation & Technical Specification		

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3.22	R3-CS-FL-91	ITALIAN MARBLE CLADDING Providing and fixing machine cut and mirrorpolished approved coloured ITALIAN MARBLE SLAB with inlays of approved size, 20mm +2mm thk. of approved quality for required pattern on a bed of 1:4 CM 25mm average thickness including neat cement float, filling joints with neat coloured pigment, curing, polishing and cleaning etc. complete.	Sqm	R3-CS-FL-91	95	
		Ground Floor				
4		SH : 4 Painting Works				
4.1	SSR 36.2	Providing and applying interior wall finish luster of Asian / Berger / Nerolac / Dulux Paints or equivalent make on internal wall surface as detailed below Scrapping the surface with emery paper and wipe clean. Applying Asian / Berger / Nerolac / Duex Paints or equivalent wall primer with brush with mineral turpentine with brush 8 to 10% and oil 15 to 20% with roller and allowing to dry for a period 6 to 8 hours. Applying Asian / Berger / Nerolac / Dulux Paints or equivalent Acrylic wall putty with appropriate proportion of water allowing to dry for period 4 to 6 hours. Scrapping with Emery paper 180 and wipe clean. Applying Asian / Berger / Nerolac / Dulux Paints or equivalent wall primer with brush with mineral turpentine 8 to 10% and oil 15 to 20% with roller Scrapping Emery paper 320 and wipe clean. Applying Asian / Berger / Nerolac / Dulux Paints or equivalent interior wall finish luster 1st coat with brush/rubber/spray with mineral turpentine 7 to 9% and Oil with roller 19 to 21% After 8 hours of activity Applying 2nd coat of Asian / Berger / Nerolac / Dulux Paints or equivalent interior wall finish Lustre with mineral turpentine 7 to 9 % with brush and Oil with roller 19 to 21% after allowing dry for the period of 6 to 8 hours activity. (With prior approval of S.E.)	Sqm.	SSR 36.20 - As directed by Engineer Incharge	228	
4.2	SSR 50.79	Providing and applying two coats Apex Ultima Puranature Anti-Pollution Or equivalent In Rs. approved brand, paint should decomposes organic substances and inorganic gases (NOx, VOC's, CO, SOx, formaldehydes, etc.) in presence of natural or artificial light. It contains Graphene and nanoparticles of titanium oxide. and Absorbs CO2 (4.8 Kilogram/15 l). plaster crack should be filled by Acrylic base Crack seal/Textured Crack filler, Paint has to applied on one coat of Apex Ultima Puranature Anti-Pollution Primer or Equivalent. Warranty Should be given by the Manufacturer The work should be done by the Manufacturer Recommended applicator and he should be able to furnish stage wise onsite technical reports from the concerned company technolog (External textured paint)	Sqm.	SSR 50.79 - - As directed by Engineer Incharge	346	
4.3	SSR 36.11 & SSR 35.21	Providing and applying washable oil-bound distemper of approved colour and shade to old and new surfaces in two coat including scaffolding, preparing the surfaces. (including the primer coat.) etc. complete. (Ceiling)	Sqm.	SSR 36.11 - Bd.P.5	413	
4.3(a)	SSR 36.11 & SSR 35.21	Providing and applying washable oil-bound distemper of approved colour and shade to old and new surfaces in two coat including scaffolding, preparing the surfaces. (including the primer coat.) etc. complete.	Sqm.	SSR 36.11 - Bd.P.5	413	
4.4	R3-CS-PN-21	Providing and applying first single coat of approved primer and two coats of fire retarding paint of an approved make as per manufacturers specifications to any surfaces, at all height and locations as directed including scaffolding, scraping, cleaning and preparing surfaces for painting by any approved means etc. complete as directed by Engineer-in-charge.	Sqm.	MCGM SOR 2023 R3-CS-PN-21	69	
4.5	R3-CS-PN-16	Lettering or numbering of 40 mm to 50mm height with paint specified below in any approved colour, style and pattern, including french polishing or synthetic enamel painting the back ground with three coats of approved colour etc. complete as directed by Engineer-in-charge. With synthetic enamel / oil paint other than golden colour or golden color (For room numbers & emergency exit) Notioanl qty	No.	MCGM SOR 2023 R3-CS-PN-16	68	
4.6	SSR 36.03	Providing and applying white-wash in two coats on old / new plastered or masonry surfaces and asbestos cement sheets including scaffolding and preparing the surface by brushing and brooming down etc. complete.	Sqm	SSR 36.03 - Bd. P. I Page One Number 411	411	
4.7	SSR 35.15	Providing and applying three coats of water proof cement paint of approved manufacture and of approved colour to new plastered surfaces including scaffolding if necessary, cleaning and preparing the surface, watering for two days etc. complete.	Sqm	SSR 35.15 - One Number: Bd.O.8/Page One Number 406	406	

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5		SH : 5 Door Window				
5.1	R3-CS-AW-04	Providing and fixing in position aluminum louvered window with anodised aluminum frame of approved make and of size 40mm x 20mm x 2.0mm (wt. 0.605 kg/Rm) including adjustable aluminum frame, 4 to 6mm thk. frosted glass, fixtures and fastenings etc. complete as directed by by Engineer In Charge. Cutout for Exhaust fan to be kept for the toilet	Sqm.	MCGM SOR 2023 R3-CS-AW-04	135	
5.2	SSR 39.37	Providing and fixing in position. (as per I.S.1868 / 1982) Aluminium sliding window of two tracks with rectangular pipe having overall dimension 63.50 x 38.10 x 1.02 mm at weight 0.547 Kilogram/One Running Metre. and window frame bottom track section 61.85 x 31.75 x 1.20 mm at weight 0.695 Kilogram/One Running Metre. Top and side track section 61.85 x 31.75 x 1.30 mm at weight 0.659 Kilogram/One Running Metre. The shutter should be of bearing bottom 40 x 18 x 1.25 mm at weight 0.417 Kilogram/One Running Metre. Inter locking section 40 x 18 x 1.10 mm at weight 0.469 Kilogram/One Running Metre. And handle section 40 x 18 x 1.25 mm at weight 0.417 Kilogram/One Running Metre. and top section 40 x 18 x 1.25 mm at weight 0.417 Kilogram/Running metre. As per detailed drawings and as directed by Engineer in charge with all necessary Aluminium sections fixtures and fastenings such as roller bearing in nylon casting and self locking catch fitted in vertical section of shutter including 5 mm thick plain glass with all required screws and nuts etc, complete. With colour Anodising with box. (Note: anodic film must not be less than 15 microns i.e. AC-15 as per IS, the anodizing must be scaleted by keeping the anodized section in boiling de-anodized water for a period of one hour) as per detailed drawing and as directed by Engineer in charge	Sqm.	SSR 39.37 - As directed by Engineer in charge.	251	
5.3	SSR 39.54	Providing and fixing in position aluminium partly openable and partly fixed window of any size as per detailed drawing and as directed by Engineer in charge with all necessary aluminium sections including necessary fixtures and fastening with 5 mm thick float glass etc. complete. a) With colour anodizing Note While arriving at the rate of item of item weight at 6.90 Kilogram/ One Square Metre is considered.	Sqm.	SSR 39.54 - As directed by Engineer in charge.	257	
5.4	SSR 103	Extra Over for Item No. 5.1 to 5.3 Above for supplying & fixing in position 5-6mm thick Toughened Glass (of approved make) instead of plan/frosted glass	Sqm	SSR 103 - As directed by Engineer in charge.	531	
5.5	SSR 105	Extra Over for Item No. 5.1 to 5.3 Above for supplying & fixing in position Aluminium Section with anodizing for various types of Windows (over and above aluminium section weight as mentioned in above items)	Kg	SSR 105 - As directed by Engineer in charge.	531	
		DOORS				
5.6	R3-CS-WW-37	Fire rated Single leaf Door - Laminate Finish: PnF of , Wooden Fire door (45mm thk Fully flushed solid core shutter with Panic Bar of appd make and of required size, 120 minutes fire rating, integrity and insulation in accordance with the criteria of BS 476 ; Part 22 : 1987 and report 212 (1)/FR/2003; Insulation on door leaf only. Tested at Fire Research Lab, CBRI, Roorkee with standard heating conditions as specified in IS : 3809-1979 and BS : 476 part 20 & 22, 1987 to achieve the required integrity & insulation (i.e. to restrict the heat radiation, temp rise on the non fire side to the max of 140 deg Centi above the ambient temp on the unexposed surface of the shutter). Rate shall be inclusive of Fire retardant compound on each side coated with intumescent sealant etc complete. Red Mirranti Hard wood frame of section 150mm x 60mm with Intumescent strip (Imported) to take care of Hot and cold smoke of size 10mm x 2mm x 2No.. Concealed in the groove of the frame and 45mm thick single leaf shutter made out of perimeter railing of Red Mirranti wood of size 100mm x 29mm and promina 60.9mm thick Calcium Silicate Board Fire Retardant compound on each side coated with Intumescent sealant and faced with 1mm thick fire retardant laminate on both side and smoke Intumescent Seal of size 20mm x 2mm x 1No., mounted in the grooves in the shutter on all sides except bottom with 10mm thick. providing and fixing brass chrome finished or S.S. fittings and fastenings, heavy duty door closer, etc complete as per detailed drawing & as directed by the Engineer in charge. :	Sqm.	MCGM SOR 2023 R3-CS-WW-37	124	
5.7	MR (G3 item)	Fire rated Single leaf Door - Laminate Finish: PnF of , Wooden Fire door (45mm thk Fully flushed solid core shutter without Panic Bar of appd make and of required size, 120 minutes fire rating, integrity and insulation in accordance with the criteria of BS 476 ; Part 22 : 1987 and report 212 (1)/FR/2003; Insulation on door leaf only. Tested at Fire Research Lab, CBRI, Roorkee with standard heating conditions as specified in IS : 3809-1979 and BS : 476 part 20 & 22, 1987 to achieve the required integrity & insulation (i.e. to restrict the heat radiation, temp rise on the non fire side to the max of 140 deg Centi above the ambient temp on the unexposed surface of the shutter). Rate shall be inclusive of Fire retardant compound on each side coated with intumescent sealant etc complete. Red Mirranti Hard wood frame of section 150mm x 60mm with Intumescent strip (Imported) to take care of Hot and cold smoke of size 10mmx2mmx2No.. Concealed in the groove of the frame and 45mm thick single leaf shutter made out of perimeter railing of Red Mirranti wood of size 100mmx29mm and promina 60.9mm thick Calcium Silicate Board Fire Retardant compound on each side coated with Intumescent sealant and faced with 1mm thick fire retardant laminate on both side and smoke Intumescent Seal of size 20mmx2mmx1No., mounted in the grooves in the shutter on all sides except bottom with 10mm thick. providing and fixing brass chrome finished or S.S. fittings and fastenings etc complete as per detailed drawing & as directed by the Engineer in charge. Providing & fixing S.S. fittings peephole etc complete. Rate shall be inclusive of Aldrop, tower bolt, handle, hinges, peep hole & latch lock etc as per detailed drawing & as directed by the Engineer in charge.	Sqm.	MR - As per Manufacturer's Recommendation & Technical Specification		
5.8	R2-CS-WW-45	Providing & fixing in position single leaf flush door of required size for internal doors of residential units, shutters made of 45mm thick marine grade block board core with 25mm x 45mm T.W. lippingpati, 1mm thick approved decorative laminates finish on both faces of shutter, including providing & fixing T.W. frame of 60mm x 150mm size, coating all the exposed surfaces of wood with 2 coats of flat enamel paint of approved shade & make over one coat of approved synthetic primer, coating all the surfaces of wood in contact with masonry with Tar (Black Japan), preparing the surfaces, providing and fixing brass chrome finished or S.S. fittings and fastenings etc complete as per detailed drawing & as directed by the Engineer in charge.	Sqm.	MCGM SOR 2023 R2-CS-WW-45	126	
5.9	R3-CS-PV-02	Providing and fixing to frames 30 mm thick Fibre Glass Reinforced Plastic (FRP) panelled / extruded profiled door shutter of approved colour, brand and manufacture, made with fire - retardant grade unsaturated polyester resin, moulded to 3mm thick FRP laminate for forming hollow rails and styles, with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings, cast monolithically with 5mm thick FRP laminate for panels conforming to IS: 14856 - 2000 etc. complete as directed	Sqm.	MCGM SOR 2023 R3-CS-PV-02	130	

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5.10	R3-CS-AW-09	Providing and fixing in position fully glazed aluminum door made up of extruded and anodised aluminium sections of approved make and of size 63.5 mm x 38.10 mm x 2.0 mm thk , 47.62 mm x 10.16 mm x 1.74 mm thk (wt. 0.881kg./Rm) for outer frame, 47.62 mm x 10.16 mm x 1.74 mm thk (wt. 0.881 kg/Rm) for top rail, 95.25 mm x 25.40 mm x 2.0 mm thk (wt. 1.519 kg/Rm) for bottom rail, 25.0 mm x 44.45 mm x 2.40 mm thk (wt. 0.918 kg/Rm) for lock rail, 47.62 mm x 44.45 mm x 1.88 mm thk (wt. 0.943 kg/Rm) for vertical of shutter (hinges side), 47.52 mm x 44.45 mm x 1.95 mm thk (wt. 0.936 kg/Rm) for vertical of shutter (latch side), clip weighing 0.097kg/Rm., with 5 mm thick plain / frosted / tinted glass in shutter including neoprene gasket, fixtures, fastenings and accessories like hinges, locking arrangement, door closer etc., complete as directed by Engineer In Charge. (Note: anodic film must not be less than 15 microns i.e. AC-15 as per IS, the anodizing must be scaleted by keeping the anodized section in boiling de-anodized water for a period of one hour) (Fire fight duct fire proof)	Sqm.	MCGM SOR 2023 R3-CS-AW-09	136	
5.11	MCGM SOR R3-CS-AW-04	Providing and fixing in position single shutter anodised aluminium louvered door with anodised aluminum frame of approved make including aluminum frame & aluminum louvers ,including fixtures and fastenings etc. complete as directed by by Engineer In Charge.	Sqm.	MCGM SOR 2023 R3-CS-AW-04	135	
5.12	R3-CS-AW-09	Providing and fixing in position fully glazed aluminum door made up of extruded and anodised aluminium sections of approved make and of size 63.5 mm x 38.10 mm x 2.0 mm thk , 47.62 mm x 10.16 mm x 1.74 mm thk (wt. 0.881kg./Rm) for outer frame, 47.62 mm x 10.16 mm x 1.74 mm thk (wt. 0.881 kg/Rm) for top rail, 95.25 mm x 25.40 mm x 2.0 mm thk (wt. 1.519 kg/Rm) for bottom rail, 25.0 mm x 44.45 mm x 2.40 mm thk (wt. 0.918 kg/Rm) for lock rail, 47.62 mm x 44.45 mm x 1.88 mm thk (wt. 0.943 kg/Rm) for vertical of shutter (hinges side), 47.52 mm x 44.45 mm x 1.95 mm thk (wt. 0.936 kg/Rm) for vertical of shutter (latch side), clip weighing 0.097kg/Rm., with 5 mm thick plain / frosted / tinted glass in shutter including neoprene gasket, fixtures, fastenings and accessories like hinges, locking arrangement, door closer etc., complete as directed by Engineer In Charge. (Note: anodic film must not be less than 15 microns i.e. AC-15 as per IS, the anodizing must be scaleted by keeping the anodized section in boiling de-anodized water for a period of one hour)	Sqm	MCGM SOR 2023 R3-CS-AW-09	136	
5.13	SSR 39.24	Providing and fixing rolling shutter fabricated from steel laths of minimum thickness 0.9 mm with lock plate of 3.15 mm thickness reinforced with 35 x 35 x 5 mm angle section fitted with sliding bolts and handles for both sides, deep M.S. channel section of depth and thickness not less than 65 mm and 3.15 mm respectively with hold fast arrangements, M.S. Bracket plate 300 x 300 x 3.15 mm minimum size and shape with square bar, suspension shaft of minimum 32 mm diameter, hood cover of M.S. sheet not less than 0.9 mm thickness and of any size at top and safety devices including mechanical gear operation arrangement consisting of worm gear wheels and worms of high grade cast iron or mild steel and one coat of red lead primer etc. complete. (I.S. 62481979) (Without mechanical gear)	Sqm.	SSR 2022-23\ - 39.24 - BD-T-55	510	
5.14	SSR 39.25	Providing and fixing rolling shutter fabricated from steel laths of minimum thickness 0.9 mm with lock plate of 3.15 mm thickness reinforced with 35 x 35 x 5 mm angle section fitted with sliding bolts and handles for both sides, deep M.S. channel section of depth and thickness not less than 65 mm and 3.15 mm respectively with hold fast arrangements, M.S. Bracket plate 300 x 300 x 3.15 mm minimum size and shape with square bar, suspension shaft of minimum 32 mm diameter, hood cover of M.S. sheet not less than 0.9 mm thickness and of any size at top and safety devices including mechanical gear operation arrangement consisting of worm gear wheels and worms of high grade cast iron or mild steel and one coat of red lead primer etc. complete. (I.S. 62481979) (With mechanical gear) With Partially Perforated Jali of 500mm depth	Sqm.	SSR 2022-23\ - 39.24 - BD-T-55	510	
5.15	SSR 39.25	EXTRA OVER FOR ITEM NO. 5.14 ABOVE FOR Providing and fixing partly perforated rolling shutter fabricated from steel laths of minimum thickness 0.9mm with lock plate of 3.15mm thickness reinforced with 35x35x5mm angle section fitted with sliding bolts and handles for both sides deep M. S. Channel section of depth and thickness not less than 65mm and 3.15 mm respectively with hold fast arrangements, M.S. Bracket plate 300x300x3.15mm minimum size and shape with square bar, suspension shall of minimum 32mm diameter, hood cover M.S. shaect not less than 0.9mm thickness and of any size at top and safety devices including mechanical gear operation arrangement consisting of worm gear wheels and worms of high grade cast iron or mild steel and one coat of red lead primer etc. complete (I.S. 6248:1979) (with Mechanical Gear) (For Shops)	Sqm	SSR 2022-23\ - 39.25 - BD-T-55	510	
5.16	SSR 39.26	Providing and fixing collapsible steel gate in one / two leaves with hot rolled vertical channels of 18 x 9 x 3 mm minimum size, crossings of M.S. flats of size 18 x 5 mm T or E section for runner of minimum 40 x 6 mm size for flange, M.S. flat for top runner of minimum size 40 x 12 mm with roller wheels confirming to grade F.G. 150 fitted with snap headed rivets of minimum size 6 mm max. spacing of vertical channels be 100 mm enclosed gate position and clear space of 150 mm between two sets of crossings with hold fasts, stoppers, spaces, handles, locking arrangement and one coat of red lead primer and oil painting etc. complete. (I.S. 10521:1983).	Sqm	SSR 2022-23\ - 39.26 - BD-T-57 Page One Number 511	511	
5.17	MR	Supplying and fixing in position monolithic 13.52 mm thick laminated glass of approved make with Integrated waterproof rain gutter, as per design, fixing of glass to the structure/framework made up of stainless steel of grade 316, the glass shall be fixed to the framework with the help of spider fittings of approved make, glass panel sizes should be so designed so as to accommodate live load and wind load, grooves to be filled with clear weather approved silicone, other glazing accessories to resist water penetration etc. complete as per approved fabrication drawing and as directed y Engineer. Note: Rate will exclude SS structure frame for glass canopy and will be paid separately under the respective item	Sqm	MR - As per Manufacturer's Recommendation & Technical Specification		
5.18	MR	Extra over for Item No. 5.17 above for Design, supply, and installation of S. S 316 grade structure for the glass canopy with S. S. 316grade tie rods of approved make and connector plates to be fixed to the main building by means S. S. grade anchor fasteners as per design requirement/ drawin and as directed by EngineerNote: For payment purpose only the weight of Stainless Steel members shall be considered excluding fixing accessories	Kg	MR - As per Manufacturer's Recommendation & Technical Specification		
5.19		Unitized Four sided Structural Glazed System				

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
	MR	Design, Fabrication, Supply, Installation, Protection, Cleaning & Handover of Unitized four sided structural glazing system of approved make designed to with stand the design wind pressure confirming to IS -875 part III. microwave cured EPDM gaskets, structural and weather sealants of GE / Dow Corning make, Norton / BOW make double adhesive spacer tape, baker rod, Bracketing system with MS/ Aluminium brackets designed to accommodate three dimensional movements with serrations in bracket and serrated washers, SS 316 grade fasteners and anchor bolts of Hilti / Wurth / Klīmas, nylon separators to prevent bi-metallic contacts, 1.5 mm thk aluminium trims and flashings to seal the gaps between curtain wall and the building structure all complete required to perform as per specification and drawing in conjunction with BOQ including shop drawings & 10 years Warrantee, Proof Checking of design calculations, site tessting and approval of selection of material, unitized glazing system by the Architect/MMRCL. VISION GLASS: 30mm DGU: Providing and fixing vision glass, 6mm Thk. Reflective (SG- SKN- Series) HS Glass + 16 mm Air gap + 8mm Thk Clear HS Glass (As per Client / Architect Approval sample)	Sqm.	MR - As per Manufacturer's Recommendation & Technical Specification		
5.20	MR	Aluminium Vertical fins of Box Shape (60 x 30 x 2 mm) with 30 mm Clear spaced fixed. Louver Profile shall be fixed on RCC / steel with the help of Aluminium Angle. The System shall be with stand wind pressure confirming to IS 875 Part-III. MS (HDG 80 micron) bracket shall be fix to RCC parapet Wall with the help of Anchor fasteners of stainless steel Grade 316.	Sqm.	MR - As per Manufacturer's Recommendation & Technical Specification		
		GFRG Panels				
5.21	MR	Providing and fixing architectural moldings profiles and other decorative elements made out of Birla White GRC (Glass Fibre reinforced Concrete) in required shape, size & standard thickness 15 to 20mm thick all as per manufacturers specifications, such as all decorative articles should be made by using high power spray machine, using AR Glass fiber with minimum ZrO2 (Zirconium) 15% with approved pigments and shades including scaffolding, proper jointing/ sealing with approved adhesives & sealents and drilling holes in RCC / Steel/ Brick work and fixing on to external facade with M. S. / GI/SS fixtures are used whic includes anchore, fastners / screws, dowel pins, fissure plug of suitable dia and length grouting with selaent including centering, scaffolding, curing etc. all complete as per drawing/ diamenssions and direction of engineer in charge and manufacturer's details and guidelines. ** Tenderer should submit manufacturer's stength certificate result for GRC panel. ** Supplier should submit minium 7 years guarantee for GRC on stamp paper of Rs. 100/- ** Mode of measurement will be on actual surface area.	Sqm.	MR - As per Manufacturer's Recommendation & Technical Specification		

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
6		SH : 6 Iron Work				
6.1	CPWD 10.26.1	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer. M.S. tube as per detailed drawings etc.. (Staircase railing, Service duct side & above pergola, ground ramp side)	Kg	CPWD 10.26.1	210	
6.2	SSR 41.56	Providing and fixing 45 cm wide mild steel ladder of 40mm x 6 mm mild steel flat stringers and steps of 18 mm dia. mild steel bar for water tank including fixing it in (1:2:4) M-15 cement concrete block 60cm x 30cm x 30cm and painting the ladder complete. (Anti Corrossive Paint) for OHT	Rmt	SSR 2022-23 - 41.56 - Bd. V. 19	559	
6.3	R3-CS-SL-12-c	Providing and Fixing MS Safety grill of weight specified below for windows as per design including fabricating the grill using M.S. square / round bar, flats and angles including painting with one coat of red oxide zinc chromate primer and two coats of synthetic enamel paint of approved colour and brand etc complete as directed. Grill weighing 20 to 25 kg / Sqm. (windows, passages & AC units etc..)	Sqm.	MCGM SOR 2023 R3-CS-SL-12-c	114	
6.4	SSR 50.85	Providing and fixing Ductile iron Man Hole Covers/ Strom Water Grating and Grating with frame of Various sizes, weight and types and load bearing capacity as per EN-124, equivalent NECO with prior approval of concerned Superintending Engineer	Kg	SSR 2022-23 - 50.85 - As directed by the Engineer Incharge	351	
7		SH : 7 False Ceiling Works				
7.1	SSR 38.52	Providing and fixing Modular false ceiling of 600 x 600 mm center to center and 13 mm thick square mineral fiber board to be fixed on frame work of aluminium sections for suspended false ceiling consisting of aluminium T 2"x1 1/2" (50 mm x 40 mm) weighing 0.39 Kilogram/m at 60 cms center center and fixed with 1/2" x 1/2" (15 x 15 mm) flanges weighing 0.19 Kilogram/m suspended on 6 mm dia mild steel rod weighing 0.22 Kilogram/m, fixed on wall and beams including rounding of the edges with alluminium T of 2" x 1 1/2" (50 mm x 40 mm) weighing 0.39 Kilogram/m etc. (all alluminium sections shall be anodized) including all labour, material, lifts etc. complete. (Floor lobby)	Sqm.	SSR 38.52 - As directed by Engineer in charge.	243	

Item No	SSK Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
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ELECTRICAL WORK						
1.1	MR	COMMERCIAL COMMON AREA PANEL	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
		Supply, installation, testing & commissioning Floor Mounted cubicle type panel				
		Type Of Construction - Enclosure Fabricated from 14/16G CRCA, IP45 sheet steel totally form 3b compartmentalized, treated for rust proofing. with separate busbar chamber & cable chambers				
		Access - Only Front access for switchgears, connectors etc.				
		Operating Voltage - Suitable for 430 V, 3 phase / 4 Wire system , 50 Hz supply				
		Incomer - 1 No. - 200A MCCB, 25kA, FP/TM with O/C,S/C,E/F,U/V, E/L and Shunt coils etc.				
		Visual Indication 1 - LED Based Phase indicating lamps, control MCBs , CTs, etc				
		Visual Indication 2 - Set - ON/OFF/ TRIP lamps with control MCBs				
		Potential Bus/Busbar				
		Type/Material - 1 set - 250A TPN+E Tinned aluminium busbar				
		Insulation - Insulated with heat shrinkable sleeves				
		Auto transfer Switch - 200A FP ATS				
		Feeder section/Outgoing :-				
		normal source outgoing feeders				
		CAPACITOR PANEL 30 KVAR - 1 No. -- 80A MCCB, TPN,16KA				
		COMMERCIAL TYPICAL FLOOR. LOBBY , CORRIDOR (GR-2ND) LPDB - 1 No. -- 40A MCCB, TPN,16KA				
		COMMERCIAL TYPICAL FLOOR. LOBBY , CORRIDOR (3RD FL) LPDB - 1 No. -- 40A MCCB, TPN,16KA				
		COMMERCIAL TYPICAL FLOOR. LOBBY , CORRIDOR (4TH-7TH) LPDB - 1 No. -- 40A MCCB, TPN,16KA				
		COMMERCIAL BASEMENT LPDB - 1 No. -- 32A MCCB, TPN,16KA				
		COMMERCIAL TYPICAL FLOOR. LOBBY , CORRIDOR (8TH-11TH) LPDB - 1 No. -- 40A MCCB, TPN,16KA				
		COMMERCIAL TYPICAL FLOOR. LOBBY , CORRIDOR (12TH-16TH) LPDB - 1 No. - 40A MCCB, TPN, 16KA				
		COMMERCIAL COMMON AREA EMERGENCY LIGHTING - 2 Nos. -- 32A MCCB, TPN,16KA				
		TOWER PARKING - 1 No. -- 125A MCCB, TPN,16KA				
		COMMERCIAL SERVER UPS - 1 No. -- 40A MCCB, TPN,16KA				
		COMMERCIAL PLUMBING PANEL-01 - 1 No. -- 63A MCCB, TPN,16KA				
		COMMERCIAL PLUMBING PANEL-02- 1 No. -- 63A MCCB, TPN,16KA				
		SPARE - 2 Nos. -- 40A MCCB, TPN,16KA				
		SPARE - 1 No. -- 100A MCCB, TPN,16KA				
1.2	MR	COMMON AREA CAPACITOR PANEL	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
		APFCR (CAPACITOR PANEL) = 30 KVAR				
		Supply, installation - Floor Mounted cubicle type panel IP-52				
		Testing & commissioning - Enclosure Fabricated from 14/16G CRCA				
		Type Of Construction - sheet steel totally compartmentalized, treated for rust proofing. with separate busbar Chamber & cable chambers				
		Access - Only Front access for switchgears, connectors etc.				
		Operating Voltage - Suitable for 430 V, 3 phase / 4 Wire system , 50 Hz supply				
		Main Control Unit/ Incomer - 1 No. -- 100A, TPN ,MP,16 kA with O/C,S/C,E/F,U/V, E/L and Shunt coils etc.				
		Visual Indication 1 - LED Based Phase indicating lamps, control MCBs , CTs, etc				
		Visual Indication 2 - 1 Set - ON/OFF/ TRIP lamps with control MCBs				
		Signal Relay - Potential Free Contacts for Remote Monitoring				
		Controlling/Interlocking - Panel shall not operate on DG Power				
		Potential Bus/Busbar - 100A TPN+E AL busbar				
		Type/Material - Insulated with heat shrinkable sleeves				
		Insulation				
		Feeder section/Outgoing - 1 NO 25A, & 4 NO 16A MCB TPN				
		1 NO 25A, & 4 NO 16A ,Capacitive Contactor with ON/OFF lamp & Start/Stop Push Button				
		1NO. OF10KVAR, 4NO. OF 5 KVAR				
		All the capacitors should be of thyristor/Thermistor controlled, 7% detuned harmonic reactor filter MPP type capacitors				

Item No	SSK Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
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1.3	MR	COMMERCIAL MAIN LIFT PANEL	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
		Supply, installation, testing & commissioning - Floor Mounted cubicle type panel				
		Type Of Construction - Enclosure Fabricated from 14/16G CRCA sheet steel totally compartmentalized, treated for rust proofing with separate busbar chamber & cable chambers				
		Access - Only Front access for switchgears, connectors etc.				
		Operating Voltage - Suitable for 430 V, 3 phase / 4 Wire system , 50 Hz supply				
		Main Control Unit/ Incomer - 1 No. - 200A MCCB,25kA,FP/TM with O/C,S/C,E/F,U/V, E/L and Shunt coils etc.				
		Visual Indication 1 - LED Based Phase indicating lamps, control MCBs , CTs, etc				
		Visual Indication 2 - Set - ON/OFF/ TRIP lamps with control MCBs				
		Potential Bus/Busbar				
		Type/Material - 1 set - 250A TPN+E Tinned aluminium busbar				
		Insulation - Insulated with heat shrinkable sleeves				
		AUTO TRANSFER SWITCH - 200 A FP ATS				
		normal source outgoing feeders				
		COMMERCIAL PASSANGER LIFT-1 - 1 No. -- 40A MCCB, TPN,16KA				
		COMMERCIAL PASSANGER LIFT-2- 1 No. -- 40A MCCB, TPN,16KA				
		SERVICE LIFT-2 - 1 No. -- 40A MCCB, TPN,16KA				
		SERVICE LIFT-1 - 1 No. -- 40A MCCB, TPN,16KA				
		PASSENGER LIFT WELL -1,2&3LIGHT & POWER DB - 2 No. -- 32A MCB, TPN,10KA, C -CURVE				
		SPARE - 1 No. -- 40A MCCB, TPN,16KA,				
		SPARE - 1 No. -- 32A MCB, TPN,10KA, C -CURVE				
1.6	MR	COMMERCIAL MAIN VENTILATION PANEL	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
		Supply, installation, testing & commissioning - Floor Mounted cubicle type panel				
		Type Of Construction - Enclosure Fabricated from 14/16G CRCA , IP45 sheet steel totally compartmentalized, treated for rust proofing. with separate busbar chamber & cable chambers				
		Access - Only Front access for switchgears, connectors etc.				
		Operating Voltage - Suitable for 430 V, 3 phase / 4 Wire system , 50 Hz supply				
		Main Control Unit/ Incomer				
		1 No. - 300A MCCB,25kA,FP/TM				
		O/C,S/C,E/F,U/V and EARTH LEAKAGE				
		Visual Indication 1 - LED Based Phase indicating lamps, control MCBs , CTs, etc				
		Visual Indication 2 - Set - ON/OFF/ TRIP lamps with control MCBs				
		Potential Bus/Busbar				
		Type/Material - 1 set - 350A TPN+E Tinned aluminium busbar				
		Insulation - Insulated with heat shrinkable sleeves				
		AUTO TRANSFER SWITCH - 300 A FP ATS				
		Feeder section/Outgoing				
		normal source outgoing feeders				
		VENTILATION PANEL-06 (3RD FL) - 1 No. -- 63A MCCB, TPN,16KA				
		VENTILATION PANEL-07 (3RD FL) - 1 No. -- 63A MCCB, TPN,16KA				
		LIFT PRESSURIZATION (TERRACE) - 1 No. -- 125A MCCB, TPN,16KA				
		LIFT PRESSURIZATION FAN (2ND FL) - 1 No. -- 63A MCCB, TPN,16KA				
		VENTILATION PANEL-03 (GR FL) - 1 No. -- 63A MCCB, TPN,16KA				
		VENTILATION PANEL-02 (GR FL) - 1 No. -- 63A MCCB, TPN,16KA				
		VENTILATION PANEL-04 (1ST FL) - 1 No. -- 100A MCCB, TPN,16KA				
		VENTILATION PANEL-05 (2ND FL) - 1 No. -- 100A MCCB, TPN,16KA				
		VENTILATION PANEL-01 (BASEMENT) - 1 No. -- 63A MCCB, TPN,16KA				
		VENTILATION SUB PANEL-01 (3RD FL) - 1 No. -- 125A MCCB, TPN,16KA				
		VENTILATION SUB PANEL-02 (9TH FL) - 1 No. -- 125A MCCB, TPN,16KA				
		SPARE - 3 No. -- 63A MCCB, TPN,16KA				

Item No	SSK Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
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1.7	MR	VENTILATION SUB PANEL-01	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
		Supply, installation, testing & commissioning - Floor Mounted cubicle type panel				
		Type Of Construction - Enclosure Fabricated from 14/16G CRCA sheet steel totally compartmentalized, treated for rust proofing, with separate busbar camber & cable chambers				
		Access - Only Front access for switchgears, connectors etc.				
		Operating Voltage - Suitable for 430 V, 3 phase / 4 Wire system , 50 Hz supply				
		Main Control Unit/ Incomer				
		1 No. - 125A MCCB,25kA,FP/TM				
		O/C,S/C,E/F,U/V and EARTH LEAKAGE				
		Visual Indication 1 - LED Based Phase indicating lamps, control MCBs , CTs, etc				
		Visual Indication 2 - Set - ON/OFF/ TRIP lamps with control MCBs				
		Potential Bus/Busbar				
		Type/Material - 1 set - 150A TPN+E Tinned aluminium busbar				
		Insulation - Insulated with heat shrinkable sleeves				
		normal source outgoing feeders				
		VENTILATION PANEL-08, 09, 10 & 11 - 4 Nos. -- 40A MCCB, TPN, 16KA.				
		VENTILATION PANEL-12, 13, 14 & 15 - 4 Nos. - 40A MCCB, TPN,16KA.				
		SPARE - 3 Nos. -- 40A MCCB, TPN,16KA.				
1.8	MR	VENTILATION SUB PANEL-02	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
		Supply, installation, testing & commissioning - Floor Mounted cubicle type panel				
		Type Of Construction - Enclosure Fabricated from 14/16G CRCA sheet steel totally compartmentalized, treated for rust proofing, with separate busbar chamber & cable chambers				
		Access - Only Front access for switchgears, connectors etc.				
		Operating Voltage - Suitable for 430 V, 3 phase / 4 Wire system , 50 Hz supply				
		Main Control Unit/ Incomer				
		1 No. - 125A MCCB,25kA,FP/TM				
		O/C,S/C,E/F,U/V and EARTH LEAKAGE				
		Visual Indication 1 - LED Based Phase indicating lamps, control MCBs , CTs, etc				
		Visual Indication 2 - Set - ON/OFF/ TRIP lamps with control MCBs				
		Potential Bus/Busbar				
		Type/Material - 1 set - 150A TPN+E Tinned aluminium busbar				
		Insulation - Insulated with heat shrinkable sleeves				
		normal source outgoing feeders				
		VENTILATION PANEL-16, 17, 18 & 19 - 4 Nos. -- 40A MCCB, TPN, 16KA.				
		VENTILATION PANEL- 20, 21, 22, 23 & 24 - 5 Nos. -- 40A MCCB, TPN,16KA.				
		SPARE - 3 Nos. -- 40A MCCB, TPN,16KA.				

Item No	SSK Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
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1.9	MR	COMMERCIAL UPS incoming PANEL	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
		Supply, installation, testing & commissioning - Floor Mounted cubicle type panel				
		Type Of Construction - Enclosure Fabricated from 14/16G CRCA sheet steel totally compartmentalized, treated for rust proofing with separate busbar chamber.				
		Access - Only Front access for switchgears, connectors etc.				
		Operating Voltage - Suitable for 430 V, 3 phase / 4 Wire system , 50 Hz supply				
		Main Control Unit/ Incomer				
		1 No. - 63A MCCB,16kA,FP/TM				
		O/C,S/C,E/F,U/V and EARTH LEAKAGE				
		Visual Indication 1 - LED Based Phase indicating lamps, control MCBs , CTs, etc				
		Visual Indication 2 - Set - ON/OFF/ TRIP lamps with control MCBs				
		Potential Bus/Busbar				
		Type/Material - 1 set - 100A TPN +E Tinned aluminium busbar				
		Insulation - Insulated with heat shrinkable sleeves				
		Feeder section/Outgoing				
		ONLINE INTEGRATED 10 KVA UPS-1- 1 NO----32A 4P, MCCB, 16KA				
		ONLINE INTEGRATED 10 KVA UPS-2 - 1 NO----32A 4P, MCCB, 16KA				
		SPARE - 2 NO----32A 4P, MCCB, 16KA				
		Commercial Common Area				
I		Distribution Boards With Accessories :-				
	CSR : 5-4-1	Supplying and erecting triple pole and neutral distribution board (TPNDB) surface/ flush mounted suitable for SPMCB of 12 ways on iron / GI frame (horizontal busbar type) as per specification no. SW-SWR/MCBDB (4 WAY TPN DB)	EACH	SW-SWR/MCBDB	91	
	CSR : 5-4-2	Supplying and erecting triple pole and neutral distribution board (TPNDB) surface/ flush mounted suitable for SPMCB of 24 ways on iron / GI frame (horizontal busbar type) as per specification no. SW-SWR/MCBDB (8 WAY TPN DB)	EACH	SW-SWR/MCBDB	92	
	CSR : 5-4-3	Supplying and erecting triple pole and neutral distribution board (TPNDB) surface/ flush mounted suitable for SPMCB of 36 ways on iron /GI frame (horizontal busbar type) as per specification no. SW-SWR/MCBDB (12 WAY TPN DB)	EACH	SW-SWR/MCBDB	92	
	CSR : 5-4-8	Supplying and erecting single pole and neutral distribution board (SPNDB) with door surface/flush mounted with 2 ways for incoming and 6 ways for outgoing SP MCB's on iron/ GI frame as per specification no. SW-SWR/MCBDB (6 WAY SPN DB)	EACH	SW-SWR/MCBDB	92	
	CSR : 5-4-9	Supplying and erecting single pole and neutral distribution board (SPNDB) with door surface/flush mounted with 2 ways for incoming and 10 ways for outgoing SP MCB's on iron/ GI frame as per specification no. SW-SWR/MCBDB (10 WAY SPN DB)	EACH	SW-SWR/MCBDB	92	
	CSR : 5-3-10	Supplying, erecting & marking TPMCB 6A to 32A, with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	EACH	SW-SWR/MCB	90	
	CSR : 5-3-11	Supplying, erecting & marking TPMCB 40A to 63A, with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	EACH	SW-SWR/MCB	90	
	CSR : 5-3-6	Supplying, erecting & marking DPMCB 6A to 32A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	EACH	SW-SWR/MCB	90	
	CSR : 5-6-1	Supplying, erecting & commissioning 2 pole RCCB 16/25A, electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	EACH	SW-RCCB/RCCB	94	
	CSR : 5-6-2	Supplying, erecting & commissioning 2 pole RCCB 40A, electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	EACH	SW-RCCB/RCCB	94	
	CSR : 5-6-3	Supplying, erecting & commissioning 2 pole RCCB 63A, electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	EACH	SW-RCCB/RCCB	94	
	CSR : 5-3-2	Supplying, erecting & marking SPMCB 6A to 32A, C-series (for motor/power) in provided distribution board as per specification no. SW-SWR/MCB	EACH	SW-SWR/MCB	90	
	CSR : 5-4-13	Supplying & erecting CRCA sheet metal one way enclosures suitable for DP MCB /TP MCB /FP MCB erected on angle iron/GI frame complete.	EACH	As per technical specification	92	
	CSR : 5-3-14	Supplying erecting and marking double pole isolator only switch version of miniature circuit breaker of 40A with required wiring connections and lugs etc. in provided distribution board complete.	EACH	As per technical specification	90	
	CSR : 5-3-18	Supplying erecting and marking four pole isolators only switch version of miniature circuit breakers of 40A in provided distribution board complete.	EACH	As per technical specification	91	
		COMMERCIAL COMMON AREA ELECTRICAL WORK SCHEDULE C				
		LT Cable				
	R3-ME-2-3a-i	Supplying of FRLSZ armoured cable 2 core 4 sq mm copper cable	EACH	MCGM SOR 2023 R3-ME-2-3a-i	49	
	R3-ME-2-3a-m	Supplying of FRLSZ armoured cable 2 core 6 sq mm copper cable	EACH	MCGM SOR 2023 R3-ME-2-3a-m	49	
	R3-ME-2-3a-q	Supplying of FRLSZ armoured cable 2 core 10 sq mm copper cable	EACH	MCGM SOR 2023 R3-ME-2-3a-q	50	

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		COMMERCIAL COMMON AREA ELECTRICAL WORK SCHEDULE C				
		Cable Gland				
	CSR:7-7-4	Supplying & erecting single compression type brass cable glands for 4 core 35 Sq.mm./3 core 50 Sq.mm. for XLPE armoured cable as per specification no. CB-GL	EACH	CB-GL	141	
	CSR:7-7-5	Supplying & erecting single compression type brass cable glands for 4 core 50 sq mm for XLPE armoured cable as per specification No. CB-GL	EACH	CB-GL	141	
	CSR:7-7-6	Supplying & erecting single compression type brass cable glands for 3½ core 70 sq mm for XLPE armoured cable as per specification No. CB-GL	EACH	CB-GL	141	
	CSR:7-7-7	Supplying & erecting single compression type brass cable glands for 3½ core 95 sq mm for XLPE armoured cable as per specification No. CB-GL	EACH	CB-GL	141	
	CSR:7-7-8	Supplying & erecting single compression type brass cable glands for 3½ core 120 sq mm for XLPE armoured cable as per specification No. CB-GL	EACH	CB-GL	141	
	CSR:7-7-9	Supplying & erecting single compression type brass cable glands for 3½ core 150 sq mm for XLPE armoured cable as per specification No. CB-GL	EACH	CB-GL	141	
	CSR:7-10	Supplying & erecting single compression type brass cable glands for 3½ core 185 sq mm for XLPE armoured cable as per specification No. CB-GL	EACH	CB-GL	141	
	CSR:7-7-11	Supplying & erecting single compression type brass cable glands for 3½core 240 sq mm for XLPE armoured cable as per specification No. CB-GL	EACH	CB-GL	141	
	CSR-7-7-12	Supplying & erecting single compression type brass cable glands for 3½core 300 sq mm for XLPE armoured cable as per specification No. CB-GL	EACH	CB-GL	142	
		COMMERCIAL COMMON AREA ELECTRICAL WORK SCHEDULE C				
		Cable Lug				
	CSR:7-10-2	Supplying & erecting crimping type aluminium lugs for cable 25 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
	CSR:7-10-3	Supplying & erecting crimping type aluminium lugs for cable 35 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
	CSR:7-10-4	Supplying & erecting crimping type aluminium lugs for cable 50 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
	CSR:7-10-5	Supplying & erecting crimping type aluminium lugs for cable 70 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
	CSR:7-10-6	Supplying & erecting crimping type aluminium lugs for cable 95 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
	CSR:7-10-7	Supplying & erecting crimping type aluminium lugs for cable 120 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
	CSR:7-10-8	Supplying & erecting crimping type aluminium lugs for cable 150 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
	CSR:7-10-9	Supplying & erecting crimping type aluminium lugs for cable 185 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
	CSR:7-10-10	Supplying & erecting crimping type aluminium lugs for cable 240 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
	CSR:7-10-11	Supplying & erecting crimping type aluminium lugs for cable 300 sq mm complete as per specification No. CB-CL/AL	EACH	CB-CL/AL	143	
		COMMERCIAL COMMON AREA ELECTRICAL WORK SCHEDULE C				
		Cable Tray				
	CSR:7-11-2	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 200 mm width & 100 mm height comprising all required standard accessories.	EACH	As per Technical Specification	144	
	CSR:7-11-3	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 300 mm width & 100 mm height comprising all required standard accessories.	EACH	As per Technical Specification	144	
	CSR:7-11-5	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 500 mm width & 100 mm height comprising all required standard accessories	EACH	As per Technical Specification	144	

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				Specification No.	Page No.	
		INTERNAL ELECTRICAL WORKS				
		WIRING, CABLING, EARTHING & CONDUIT				
	CSR:1-2-6	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 20 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.	EACH	GEN-AMF	190	
	CSR:1-2-7	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 25 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.	EACH	GEN-AMF	190	
	CSR:1-2-8	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 32 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.	EACH	GEN-AMF	191	
		INTERNAL ELECTRICAL WORKS				
		Point wiring				
	CSR:1-7-1	Point wiring in for light/fan/bell in 20 mm metal conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire, flush type switch, earthing and required accessories as per specification No: WG-PW/SW	EACH	WG-PW/SW	11	
	CSR:1-7-2	Point wiring for independent plug in 20 mm metal conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire, flush type switch, earthing and required accessories as per specification No: WG-PW/SW	EACH	WG-PW/SW	11	
	CSR:1-7-3	Point wiring for light/fan/bell in 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire with flush type switch and required accessories as per specification No: WG-PW/SW	EACH	WG-PW/SW	12	
	CSR:1-7-4	Point wiring for independent plug in 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire, flush type switch, earthing and required accessories as per specification No: WG-PW/SW	EACH	WG-PW/SW	12	
		LT CABLE				
	MCGM : R3-ME-2 3a-j	1.1 kV grade stranded Cu conductor, XLPE insulated, extruded PVC inner and outer sheathed FRLSHZ, galvanised steel round or strip armoured cables. Supplying of LSZH armoured cable 3 core 4 sq mm copper cable	M	MCGM SOR 2023 R3-ME-2-3a-i	49	
	MCGM : R3-ME-2 3a-n	1.1 kV grade stranded Cu conductor, XLPE insulated, extruded PVC inner and outer sheathed FRLSHZ, galvanised steel round or strip armoured cables. Supplying of LSZH armoured cable 3 core 6 sq. mm. copper cable.	M	MCGM SOR 2023 R3-ME-2-3a-n	50	
	MCGM : R3-ME-2 3a-u	1.1 kV grade stranded Cu conductor, XLPE insulated, extruded PVC inner and outer sheathed FRLSHZ, galvanised steel round or strip armoured cables. Supplying of LSZH armoured cable 4 core 16 sq. mm. copper cable.	M	MCGM SOR 2023 R3-ME-2-3a-u	50	
	MCGM : R3-ME-2 3a-k	1.1 kV grade stranded Cu conductor, XLPE insulated, extruded PVC inner and outer sheathed FRLSHZ, galvanised steel round or strip armoured cables. Supplying of LSZH armoured cable 4 core 4 sq. mm. copper cable.	M	MCGM SOR 2023 R3-ME-2-3a-k	49	
	MCGM : R3-ME-2 3a-o	1.1 kV grade stranded Cu conductor, XLPE insulated, extruded PVC inner and outer sheathed FRLSHZ, galvanised steel round or strip armoured cables. Supplying of LSZH armoured cable 4 core 6 sq. mm. copper cable.	M	MCGM SOR 2023 R3-ME-2-3a-o	50	
	MCGM : R3-ME-2 3a-s	1.1 kV grade stranded Cu conductor, XLPE insulated, extruded PVC inner and outer sheathed FRLSHZ, galvanised steel round or strip armoured cables. Supplying of LSZH armoured cable 4 core 10 sq. mm. copper cable.	M	MCGM SOR 2023 R3-ME-2-3a-s	50	
	CSR : 7-1-29	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 16 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	127	
	CSR : 7-1-15	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 25 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	126	
	CSR : 7-1-16	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 35 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	126	
	CSR : 7-1-17	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 50 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	126	
	CSR : 7-1-18	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 70 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	126	
	CSR : 7-1-19	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 95 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	126	
	CSR : 7-1-20	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 120 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	127	
	CSR : 7-1-21	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 150 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	127	
	CSR : 7-1-22	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 185 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	127	
	CSR : 7-1-23	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 240 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	127	
	CSR : 7-1-24	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 300 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	127	

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CABLE GLAND						
	CSR: 7-7-1	Supplying & erecting Siemens type brass cable glands for 2 to 4 core 2.5 sq. mm. /2 to 4 core 4 sq. mm. /2 core 6 sq. mm. for XLPE armoured cable as per specification no. CB-GL (2 core - 4 & 6 sq.mm , (4 core - 4 sq.mm)	Each	CB-GL	141	
	CSR: 7-7-2	Supplying & erecting Siemens type brass cable glands for 3 to 4 core 6 sq. mm. /2 to 4 core 10 sq. mm. for XLPE armoured cable as per specification No. CB-GL (3 core 6 sq.mm, 4 core 6 sq.mm & 10 sq.mm)	Each	CB-GL	141	
	CSR: 7-7-3	Supplying & erecting Siemens type brass cable glands for 3 to 4 core 16 sq. mm. /3 to 4 core 25 sq. mm. /3 core 35 sq. mm. for XLPE armoured cable as per specification no. CB-GL (4 core 16 sq.mm)	Each	CB-GL	141	
CABLE LUGS						
	CSR: 7-9-1	Supplying & erecting crimping type copper lugs for cable up to 16 sq. mm. complete as per specification no. CB-CL/CU	Each	CB-CL/CU	142	
WIRE / Point WIRING :-						
	CSR: 1-7-3	Point wiring for light/fan/bell in 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire with flush type switch and required accessories as per specification No: WG-PW/SW	POINT	WG-PW/SW	12	
	CSR: 1-7-22	Secondary point wiring for additional light/ bell point, concealed type in min 20 mm FRLS grade PVC conduit with 1.5 sq.mm. (2+1E) FRLSH grade copper wires with required accessories as per specification No: WG-PW/CW	POINT	WG-PW/CW	13	
	R3-ME-3-15	Wiring for circuit/ submain wiring along with earth wire with the following sizes of FRLSH insulated copper conductor wire in surface/ recessed medium class PVC conduit as required				
	R3-ME-3-15-b	Submains FRLSH PVC conduit- 2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire in 20mm Conduit	M	MCGM SOR 2023 R3-ME-3-15-b	68	
	R3-ME-3-15-c	Submains FRLSH PVC conduit- 2 X 4 sq. mm + 1 X 4 sq. mm earth wire in 25mm Conduit	M	MCGM SOR 2023 R3-ME-3-15-c	68	
IV						
CABLE TRAY :-						
G.I. Cable tray with all other accessories : Perforated Type (SPME-TS- 7)						
	R3-ME-2-13	Readymade 2500mm standard length, prefabricated, perforated cable tray from MS sheet and then hot dip galvanised, of following sizes and associated accessories such as coupler plates, tees, elbow etc. Galvanisation thickness shall be Minimum 86 Micron.				
	R3-ME-2-13-c	G.I. Cable tray with all other accessories 150 x 25mm (W x H) - (16 SWG - 1.6mm) without cover	Mtr.	MCGM SOR 2023 R3-ME-2-13-c	182	
	R3-ME-2-13-e	G.I. Cable tray with all other accessories 300 x 50mm (W x H) - (16 SWG - 1.6mm) without cover	Mtr.	MCGM SOR 2023 R3-ME-2-13-e	182	
	R3-ME-2-13-k	G.I. Cable tray with all other accessories 450 x 75mm (W x H) - (16 SWG - 1.6mm) without cover	Mtr.	MCGM SOR 2023 R3-ME-2-13-k	184	
	R3-ME-2-13-l	G.I. Cable tray with all other accessories 600 x 75mm (W x H) - (16 SWG - 1.6mm) without cover	Mtr.	MCGM SOR 2023 R3-ME-2-13-l	184	
G.I. Cable tray with all other accessories : Ladder Type (SPME-TS- 8)						
	R3-ME-2-14	Readymade 2500mm standard length, prefabricated, Ladder type cable tray from MS sheet and then hot dip galvanised, of following sizes and associated accessories such as coupler plates, tees, elbow etc. 50 mm side flanges shall be provided. Galvanisation thickness shall be Minimum 86 Micron.				
	R3-ME-2-14-f	G.I. Cable tray with all other accessories : Ladder Type -750 x 75mm (W x H) - (12SWG - 2.5mm)	Mtr.	MCGM SOR 2023 R3-ME-2-14-f	58	
	R3-ME-2-14-g	G.I. Cable tray with all other accessories : Ladder Type -1000 x 75mm (W x H) - (12SWG - 2.5mm)	Mtr.	MCGM SOR 2023 R3-ME-2-14-g	58	

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		G.I. Trunking / Duct / Raceway & all other accessories (SP-METS- 9)				
R3-ME-2-15		Readymade 2500mm standard length, prefabricated, GI trunking from MS sheet and then hot dip galvanised, of following sizes and associated accessories such as coupler plates, tees, elbow etc. 50 mm side flanges shall be provided. Galvanisation thickness shall be Minimum 86 Micron. cost of trunking shall be included junction box of suitable size, and all other accessories required to complete the work.				
R3-ME-2-15-a		G.I. Trunking / Duct / Raceway & all other accessories – 50 x 40mm (W x H) - (16 SWG - 1.6 mm) with cover without partition	Mtr.	MCGM SOR 2023 R3-ME-2-15-a	58	
R3-ME-2-15-d		G.I. Trunking / Duct / Raceway & all other accessories – 150 x 40mm (W x H) - (16 SWG - 1.6 mm) with cover without partition	Mtr.	MCGM SOR 2023 R3-ME-2-15-d	58	
R3-ME-2-15-e		G.I. Trunking / Duct / Raceway & all other accessories – 300 x 40mm (W x H) - (16 SWG - 1.6 mm) with cover without partition	Mtr.	MCGM SOR 2023 R3-ME-2-15-c	58	
		ACCESSORIES SUPPLY & FIXING:-				
CSR : 2-1-5		Supplying and erecting LED square / circular 16 to 20W down lighter having pressure die-cast aluminium housing, opal translucent cover, Mounting arrangement with board for surface type or spring loaded Mounting clips for flush type complete.	Each	As per Technical Specification	23	
CSR : 2-1-15		Supplying and erecting decorative oval bulk head edge-lit 10W LED luminaire comprising of high brightness LED Fitting on provided PVC block / wooden board.	Each	As per Technical Specification	24	
CSR : 2-1-22		Supplying & erecting LED 20W tube light fitting (4 feet) with aluminium housing, heat sink, integrated HF electronic driver complete.	Each	As per Technical Specification	25	
CSR : 2-10-3		Supplying and erecting regular/ standard Model ceiling fan of 1400mm. sweep complete erected in position as per specification no. FG-FN/CF	Each	As per Technical Specification	35	
CSR : 2-11-6		Supplying and erecting 'B' grade G.I. pipe / M.S. pipe down rod duly painted for fan complete erected with PVC three core flexible cable 1 sq. mm copper PVC wire.	Mtr.	As per Technical Specification	38	
CSR : 2-11-9		Supplying and erecting electronic type step regulator for ceiling fan 600/ 900/ 1200/ 1400 mm. sweep, complete erected on provided switch board.	Each	As per Technical Specification	38	
CSR : 2-9-1		Supplying & erecting Aviation obstruction light consisting of yellow painted diecast aluminium alloy housing with Integral LED aviation light comprising of aluminium housing with polycarbonate enclosure complete.	Each	As per Technical Specification	35	
VI		SWITCH & SOCKET OUTLETS :-				
CSR : 1-6-1		Supplying and erecting Modular type switch 6A / 10A duly erected on provided plate and box with wiring connections complete.	Each	As per Technical Specification	8	
CSR : 1-6-2		Supplying and erecting Modular type switch 16A duly erected on provided plate and box with wiring connections complete.	Each	As per Technical Specification	8	
CSR : 1-6-10		Supplying and erecting Modular type 3 pin 6A Multi sockets with safety shutter, duly erected on provided plate and box with wiring connections complete.	Each	As per Technical Specification	9	
CSR : 1-6-11		Supplying and erecting Modular type 3 pin 6 / 16A Multi socket with safety shutter, duly erected on provided plate and box with wiring connections complete.	Each	As per Technical Specification	9	
		SWITCH BOARD & MOUNTING PLATE :-				
CSR : 1-6-35		Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 2 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background.	Each	As per Technical Specification	10	
CSR : 1-6-36		Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 3 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background.	Each	As per Technical Specification	10	
CSR : 1-6-37		Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 4 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background.	Each	As per Technical Specification	10	
CSR : 1-6-38		Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 6 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background.	Each	As per Technical Specification	10	
CSR : 1-6-39		Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 8 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background.	Each	As per Technical Specification	10	
CSR : 1-6-40		Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 12 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background.	Each	As per Technical Specification	10	
CSR : 1-6-47		Supplying and erecting PVC Surface Modular double Mounting plate 2 Modules complete duly erected.	Each	As per Technical Specification	11	
CSR : 1-6-48		Supplying and erecting PVC Surface Modular double Mounting plate 3 Modules complete duly erected.	Each	As per Technical Specification	11	
CSR : 1-6-49		Supplying and erecting PVC Surface Modular double Mounting plate 4 Modules complete duly erected.	Each	As per Technical Specification	11	
CSR : 1-6-50		Supplying and erecting PVC Surface Modular double Mounting plate 6 Modules complete duly erected.	Each	As per Technical Specification	11	
CSR : 1-6-51		Supplying and erecting PVC Surface Modular double Mounting plate 8 Modules complete duly erected.	Each	As per Technical Specification	11	
CSR : 1-6-52		Supplying and erecting PVC Surface Modular double Mounting plate 12 Modules complete duly erected.	Each	As per Technical Specification	11	

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VIII		EARTHING :-				
	CSR : 9-2-2	Supplying and erecting copper strip of required size used for earthing on wall and/or any other purpose with necessary copper clamps fixed on wall painted with bituminous paint in an approved Manner with joints required. As per specification no. EA-EP.	Kg.	EA-EP	160	
	CSR : 9-2-3	Supplying and erecting GI strip of required size used for earthing on wall and/or any other purpose with necessary GI clamps fixed on wall painted with bituminous paint in an approved Manner with joints required. As per specification no EA-EP.	Kg.	EA-EP	160	
	CSR : 9-1-5	Supply, Installation, Testing and commissioning of Maintenance free earthing comprising of Electrode of 17.2 mm diameter Low Carbon Steel with 250 Micron Molecular copper bonded earthing rod of Length 3M along with 25 kg Carbon based environment friendly back fill ground enhancing Compound required to fill up the excavated earth with required quantity complete. Specification no. EA-MOBI	Each	EA-MOBI	160	
	CSR : 9-3-2	Providing and Back filling earth conductivity enhancing Mineral earthing Compound of 25 kg Bag complete.	Each	As per Technical Specification	161	
IX		HDPE PIPE/CONDUIT:-				
	CSR : 1-2-1	Supplying and erecting 20mm dia. corrugated flexible polypropylene conduit	METER	As per Technical Specification	4	
	CSR : 1-2-2	Supplying and erecting 25 mm dia. corrugated flexible polypropylene conduit	METER	As per Technical Specification	4	
	CSR : 1-1-10	Supplying & laying HMS PVC conduit 25 mm dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC.	Mtr.	GEN-DG	186	
Commercial Internal Shop						
I		DISTRIBUTION BOARDS:-				
	CSR : 5-4-2	Supplying & erecting triple pole and neutral distribution board (TPNDB), SPMCB of 8 ways / phase (24 poles), with door, 1.2mm thickness surface/flush Mounted, IP 43 Protection on iron/GI frame (horizontal busbar type) as per specification no. SW-SWR/MCBDB (8 WAY TPN DB)	Each	SW-SWR/MCBDB	92	
	CSR : 5-4-9	Supplying and erecting single pole and neutral distribution board (SPNDB), with 2 ways for incoming and 10 ways (10 poles) for outgoing SP MCBs, with door, 1.2mm thickness surface / flush Mounted, IP 43 Protection on iron /GI frame as per specification no. SW-SWR/MCBDB. (10 WAY SPN DB)	Each	SW-SWR/MCBDB	92	
	CSR : 5-4-8	Supplying and erecting single pole and neutral distribution board (SPNDB), with 2 ways for incoming and 6 ways (6 poles) for outgoing SP MCBs, with door, 1.2mm thickness surface / flush Mounted, IP 43 Protection on iron / GI frame as per specification no. SW-SWR/MCBDB. (6 WAY SPN DB)	Each	SW-SWR/MCBDB	92	
	CSR : 5-3-11	Supplying, erecting & Marking TPMCB 40A to 63A, with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	SW-SWR/MCB	90	
	CSR : 5-3-6	Supplying, erecting & Marking DPMCB 6A to 32A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	SW-SWR/MCB	90	
	CSR : 5-6-1	Supplying, erecting & commissioning 2 pole RCCB 16/25A, electromagnetic type with 30/100/300 MA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	SW-RCCB/RCCB	94	
	CSR : 5-6-2	Supplying, erecting & commissioning 2 pole RCCB 40A, electromagnetic type with 30/100/300 MA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	SW-RCCB/RCCB	94	
	CSR : 5-3-2	Supplying, erecting & Marking SPMCB 6A to 32A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	SW-SWR/MCB	90	
	R3-ME-1-7	Isolator / Switches as per IEC 60947 Part 3 / IS 13947 part 3 to be enclosed in CRCA Sheet steel 18/20 SWG standard with powder coated, rust protected(if 16/18 SWG/1.62/1.21 mm Nost available) with bus bar, earthing terminal, and all other accessories to complete the work. Isolator shall be wall/column Mounted. Enclosure shall be weather proof. Colour shade shall be as per IS 5. MS angle iron frame to Mount the unit is included. IP for enclosure shall be IP43 for Indoor unit and IP 55 for Outdoor unit				
	R3-ME-1-7-i	40 A DP switch unit with CRCA sheet steel powder coated enclosure with accessories	Each	MCGM SOR 2023 R3-ME-1-7-i	24	
	R3-ME-1-7-M	40 A TP switch unit with CRCA sheet steel powder coated enclosure with accessories	Each	MCGM SOR 2023 R3-ME-1-7-M	24	
	R3-ME-1-7-n	63 A TP switch unit with CRCA sheet steel powder coated enclosure with accessories	Each	MCGM SOR 2023 R3-ME-1-7-N	24	
II		WIRING, CABLING, EARTHING & CONDUIT :-				
	CSR : 1-3-7	Supplying & erecting mains with 3x4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/ inside pole/Bus bars or any other places as per specification No: WGMA/ BW	M	WG-MA/BW	5	
	CSR : 7-1-15	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 25 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	M	CB-LT/AL	126	
	CSR : 7-2-33	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 10 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	M	CB-LT/CU	132	
	CSR : 7-2-32	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 6 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	M	CB-LT/CU	132	
	CSR : 7-2-16	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 6 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	M	CB-LT/CU	131	

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III		Point WIRING				
	CSR : 1-3-8	Supplying & erecting mains with 3x6 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/ inside pole/Bus bars or any other places as per specification No: WGMA/ BW	M	WG-MA/BW	5	
	CSR : 1-3-7	Supplying & erecting mains with 3x4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/ inside pole/Bus bars or any other places as per specification No: WGMA/ BW	M	WG-MA/BW	5	
	CSR : 1-7-3	Point wiring for light/fan/bell in 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire with flush type switch and required accessories as per specification No: WG-PW/SW	POINT	WG-PW/SW	12	
	CSR : 1-7-22	Secondary point wiring for additional light/ bell point, concealed type in min 20 mm FRLS grade PVC conduit with 1.5 sq.mm. (2+1E) FRLSH grade copper wires with required accessories as per specification No: WG-PW/CW	POINT	WG-PW/CW	13	
IV		SWITCH & SOCKET OUTLETS				
	CSR : 1-6-1	Supplying and erecting Modular type switch 6A / 10A duly erected on provided plate and box with wiring connections complete.	Each	As per Technical Specification	8	
	CSR : 1-6-2	Supplying and erecting Modular type switch 16A duly erected on provided plate and box with wiring connections complete. (AC , GEYSER & OVEN)	Each	As per Technical Specification	8	
	CSR : 1-6-10	Supplying and erecting Modular type 3 pin 6A Multi sockets with safety shutter, duly erected on provided plate and box with wiring connections complete.	Each	As per Technical Specification	9	
	CSR : 1-6-11	Supplying and erecting Modular type 3 pin 6 / 16A Multi socket with safety shutter, duly erected on provided plate and box with wiring connections complete. (AC, GEYSER & OVEN)	Each	As per Technical Specification	9	
	CSR : 1-6-17	Supplying and erecting Modular type computer jack RJ 45 with safety shutter, duly erected on provided plate and box with wiring connections complete.	Each	As per Technical Specification	9	
V		SWITCH BOARD & SWITCH BOARD MOUNTING PLATE				
	CSR : 1-6-34	Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 1 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background..	Each	As per Technical Specification	10	
	CSR : 1-6-35	Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 2 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background..	Each	As per Technical Specification	10	
	CSR : 1-6-36	Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 3 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background..	Each	As per Technical Specification	10	
	CSR : 1-6-37	Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 4 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background..	Each	As per Technical Specification	10	
	CSR : 1-6-38	Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 6 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background..	Each	As per Technical Specification	10	
	CSR : 1-6-39	Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 8 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background..	Each	As per Technical Specification	10	
	CSR : 1-6-40	Supplying and erecting unbreakable concealed type Modular switch box with double Mounting plate for 12 Module duly erected flush to wall with required chiselling and finishing with cement Mortar / POP as per required to Match the background..	Each	As per Technical Specification	10	
	CSR : 1-6-46	Supplying and erecting PVC Surface Modular double Mounting plate 1 Module complete duly erected.	Each	As per Technical Specification	11	
	CSR : 1-6-47	Supplying and erecting PVC Surface Modular double Mounting plate 2 Modules complete duly erected.	Each	As per Technical Specification	11	
	CSR : 1-6-48	Supplying and erecting PVC Surface Modular double Mounting plate 3 Modules complete duly erected.	Each	As per Technical Specification	11	
	CSR : 1-6-49	Supplying and erecting PVC Surface Modular double Mounting plate 4 Modules complete duly erected.	Each	As per Technical Specification	11	
	CSR : 1-6-50	Supplying and erecting PVC Surface Modular double Mounting plate 6 Modules complete duly erected.	Each	As per Technical Specification	11	
	CSR : 1-6-51	Supplying and erecting PVC Surface Modular double Mounting plate 8 Modules complete duly erected.	Each	As per Technical Specification	11	
	CSR : 1-6-52	Supplying and erecting PVC Surface Modular double Mounting plate 12 Modules complete duly erected.	Each	As per Technical Specification	11	

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VIII		ACCESSORIES SUPPLY & FIXING:-				
	CSR : 2-1-5	Supplying and erecting LED square / circular 16 to 20W downlighter having pressure die-cast aluminium housing, opal translucent cover, mounting arrangement with board for surface type or spring loaded mounting clips for flush type complete.	EACH	As per Technical Specification	23	
	CSR : 2-1-22	Supplying & erecting LED 20W tube light fitting (4 feet) with aluminium housing, heat sink, integrated HF electronic driver complete.	Each	As per Technical Specification	23	
	CSR : 2-10-2	Supplying and erecting regular/ standard model ceiling fan of 900 /1050 mm. sweep complete erected in position as per specification no. FG-FN/CF	EACH	FG-FN/CF	35	
	CSR : 2-10-3	Supplying and erecting regular/ standard model ceiling fan of 1400mm. sweep complete erected in position as per specification no. FG-FN/CF	EACH	FG-FN/CF	35	
	CSR : 2-11-5	Supplying and erecting fan hook box of 10 mm M.S. round bar bounded to the R.C.C. bars upto 50 mm length each side and pierced through a 16 S.W.G. thick aluminium/M.S. Bowl 100 mm dia.or equivalent square size and having depth upto 75 mm complete erected with duly painted by one coat of red oxide paint and two coats of paint erected in position and without any leakage of slurry of cement concrete on either side of the box and positioned to the bottom level of the slab.	EACH	As per Technical Specification	38	
	CSR : 2-11-6	Supplying and erecting 'B' grade G.I. pipe / M.S. pipe down rod duly painted for fan complete erected with PVC three core flexible cable 1 sq. mm copper PVC wire.	M	As per Technical Specification	38	
	CSR : 2-11-9	Supplying and erecting electronic type step regulator for ceiling fan 600/ 900/ 1200/ 1400 mm. sweep, complete erected on provided switch board.	EACH	As per Technical Specification	38	
Lightning Protection						
I		AIR termination				
	MR	Supply of 8 mm Aluminum Round Conductor complete as specified in drawing & Meets the requirements of DIN EN 50164-2 (VDE 0185 part 202) & VDE 0185-305 (IS/IEC 62305)	Mtr.R	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Vertical air terminal with accessories: Providing of Air terminals as per IS-IEC -62305 part-3 16mm rod tapered to 10 mm aluminium rod : Meets the technical specification according to DIN EN 50164-2 (VDE 0815 part 202). Meets the requirement of VDE0185/305(IS/IEC 62305) 4Mtr Air terminal: semi-hard (EALmgSiO5 corresponds to DIN 48801) Suitable for high wind load.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Accessories : system consist of Fang Fix with base and clamp, on the top air terminal is erected. Fang fix clamp Made of SS, lightning tested for 100 KA 10/350 Micro sec waveform.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	16 KG stone of 365 mm diameter, high level of stability. Quick and easy Mounting of interception rod using anchors. Concrete, frost-resistant, can be stacked.OBO Type No. F-FIX S16 (5403 22 7)	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Providing of expansion piece with connector: For equalising temperature related length changes. Necessary on conductors length over 20 Meters. For round conductor Rd 8/ALU.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Connector: For T cross and parallel connectors. Quick installation using hexagonal bolt M10X30 high-grade hot dip galvanised. Conforms to the requirements according to DIN VDE 0185-305 (IS-IEC 62305)(2nos/expansion piece)	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Polyamide roof cable holder for flat roof: DIN 48829 form B1. Closed form with bottom. Filling weight 1Kg (frost-resistant concrete). Sleeve from polyethylene, black @ 1 Meter distance.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Providing of cross universal connector: For T and cross connection, to route vertical down conductor /Mesh formation Made of hot dipped galvanised iron with necessary screws etc as required. Installed with 4 hexagonal bolts M8*25 with M8 hexagonal nuts .	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of Roof conductor holder for parapet- Polyamide Conductor holder: With M8 female thread or diameter 7mm, M8 Screw to connect the conductor holder. Weather and temperature resistant from -35 to +90 degree Celsius tested. Conductor holder @ 1 Meter distance.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
II		DOWN CONDUCTOR & RING system				
	MR	Supply of Galvanised Steel Flat 30X3 mm thick from earth electrode directly in ground as required. Hot Dip GI strip, Cross sectional area of 90mm square According to DIN EN 50164-2 (VDE 0185 part 202) Meets the requirement of VDE0185/305 (IS-IEC 62305) Zinc coating: 500 g/M square (Approx :70 Micron coating) Should be tested and use exclusively for lightning protection, earthing system and ring equipotential bonding	Mtr.R	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of Cross connector for Flat: Suitable for 30mm Galvanised steel strip. Installed with 4 nos of hexagonal plate.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Providing of flat conductor holder suitable for FL 30. Installed with 2 hexagonal bolts.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply and installation of following size Test Links -32 x 6 mm GI (length : 300 mm)	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	SITC of Maintenance free heavy duty pure G.I. chemical earthing electrode of 50mm dia , wall thickness 16SWG and 3 Mtr length with internal strip of G.I. 30 x 3 mm along with 50 KG of back fill Compound (Highly conductive non corrosive Moisture retaining chemical) complete with excavation, civil work including top 300mm deep one brick thick Masonry Chamber with suitable FRP cover.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		

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III	MR	Earthing System Main Earth Mat (Grid Earthing) Supply of copper bonded steel rod of 32mm dia. The copper shall be molecularly bonded over steel with the minimum copper coating of 250 microns. The rod shall be in compliance of IS 3043, IEEE 80 & IEC 62561-2. The rod shall be laid horizontally along with 95% carbon-based earth enhancement material having the resistivity of less than 0.12 ohm-meter. It shall be tested from NABL accredited lab as per IEC 62561-7. The size of trench shall be 50mm x 50mm as per the CDEGS calculation. (1 meter = 5kg EEC)	Mrt	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of UL listed copper bonded steel rod of 32mm dia. 10 ft length. The copper shall be molecularly bonded over steel with the minimum copper coating of 250 microns. The rod shall be in compliance of IS 3043, IEEE 80 & IEC 62561-2. It shall be tested from UL 467. The vertical pit shall consist of 95% carbon-based earth enhancement material having the resistivity of less than 0.12 ohm-meter. It shall be tested from NABL accredited lab as per IEC 62561-7. The size of bore shall be 125mm diameter as per the CDEGS calculation. (1 pit = 45kg EEC)	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of 2D X Exothermic Joint to be made between 32mm dia. Horizontally laid CBS rod to 32mm dia. Horizontally laid CBS rod. The joints shall be in compliance with IEEE 837.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of 3D T Exothermic Joint to be made between 32mm dia. Horizontally laid CBS rod to 32mm dia. Horizontally laid CBS rod with 32mm dia. Vertical rod. The joints shall be in compliance with IEEE 837.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of 3D L Exothermic Joint to be made between 32mm dia. Horizontally laid CBS rod to 32mm dia. Horizontally laid CBS rod with 32mm dia. Vertical rod. The joints shall be in compliance with IEEE 837.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of 2DT Riser Exothermic Joint to be made between 32mm dia. Horizontally laid CBS to 75x6 mm CBS strip. The joints shall be in compliance with IEEE 837.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of 2D-L Riser Exothermic Joint to be made between 75x6mm Horizontally laid CBS to 75x6 mm CBS strip. The joints shall be in compliance with IEEE 837.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of 2D-Straight Riser Exothermic Joint to be made between 75x6mm Horizontally laid CBS to 75x6 mm CBS strip. The joints shall be in compliance with IEEE 837.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of 2D-L Riser Exothermic Joint to be made between 75x6mm Horizontally laid CBS to 30X3 mm GI strip. The joints shall be in compliance with IEEE 837.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of 75x 6mm CBS Strip(Riser) to be used to interconnect Earthing grid with MET. It shall be in compliance with IEC 62561-2.	Mtr.	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Supply of 500x 75x 6mm CBS Busbar.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
CCTV System						
I		Cameras & Recorder				
	R3-ME-12-13-M	Supply, Installation, Testing & commissioning of IP dome Camera with 1/2.8" CMOS, Progressive Scan, HD 720P Horizontal Resolution, Dual H.264 streaming, 25 FPS, 2.8mm- 10mm varifocal auto iris lens, 0.01 lux, tamper detection, Wide dynamic Range, 3D Noise reduction, PoE & standard 12VDC/24VAC power input, Indoor surface Mount enclosure, Mounted on True Ceiling / False ceiling as per site requirement (including required accessories), UL Listed Or Equivalent. Camera Shall be ONVIF compliant.	Each	MCGM SOR 2023 R3-ME-12-13-m	184	
	R3-ME-12-13-n	Supply, Installation, Testing & commissioning of IP Fixed Box/ Bullet Camera with 1/2.8" CMOS, Progressive Scan, Day/Night, HD720P Horizontal Resolution, Dual H.264 streaming, 25 FPS, 2.8mm-10mm varifocal auto iris IR corrected Megapixel lens, 0.05 lux Day/Night, tamper detection, Wide dynamic Range, 3D Noise reduction, PoE & standard 12VDC/24VAC power input, IP66 rated vandal resistant enclosure, UL Listed Or Equivalent. Camera Shall be ONVIF compliant.	Each	MCGM SOR 2023 R3-ME-12-13-n	184	
	R3-ME-12-13-r	Design, Supply, testing, installation and commissioning of Modular 64 channel 1080P NVR, Recording: 1920X1080P, 15 FPS, 30 days recording, 24 hours/day; Real time Monitoring with 25 FPS. Hard disc : 8 SATA III Ports, Each 6TB, up to 48TB, 1 eSATA port, Disk array: Support RAID 0/1/5/6/10, Two no's of RJ-45 10/100/ 1000 Mbps self adaptive Ethernet interface, RS 232, RS 485, keyboard interfaces, VGA/HDMI compatible, 2nos front USB 2.0 & 1 no at rear USB 2.0 compatible & 16 TB hard disc and as per storage configuration contractor shall consider the separate hard discs.	Each	MCGM SOR 2023 R3-ME-12-13-r	185	
	R3-ME-12-14-a	Supply, Installation, testing, commissioning, performance demonstration of 2 KVA UPS true online with 1 phase input, 1 phase output with back up batteries for 2 Hours backup along with rack & connectors.	Each	MCGM SOR 2023 R3-ME-12-14-a	186	

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CCTV AND DATA CABLES & ACCESSORIES						
R3-ME-12-13-t		Supply, Installation, Testing & commissioning of 42inches LED Monitor, Full HD Resolution, Backlight LED, Brightness : 400 NITS Min., Contrast : 1200 : 1 or better., Power supply : 230 ±10%, 50 Hz.	Each	MCGM SOR 2023 R3-ME-12-13-t	186	
R3-ME-12-13-l		SITC of 8TB Storage (HDD).	Each	MCGM SOR 2023 R3-ME-12-13-l	184	
CSR : 1-8-29		Supplying, installing, testing & commissioning of DVI to HDMI Convertor highspeed category, supporting full HD 1080p, 2K and 4K video up to 30 ft length, 3D having 24k gold-plated 19-pin Type-A connectors with high-flex CL3-rated jacket, RoHS compliant complete.	Each	As directed by Engineer Incharge	16	
CSR : 1-8-28		Supplying & erecting HDMI Extender Over RJ45 Ethernet Cable Cat 6, 60M/200ft complete.	Each	As directed by Engineer Incharge	16	
CSR : 1-8-22		Supplying and erecting 5M HDMI cord low voltage grade Minimum 4k compliant to be laid in provided conduits with Male/female 19 pin HDMI connectors complete.	Each	As directed by Engineer Incharge	15	
CSR : 1-10-2		Supplying and installing cat-6 LSZH cable suitable for networking as per specification no. WG-COC/NC	Mtr.R	WG-COC/NC	17	
CSR : 1-12-23		Supplying and fixing 24 U floor Mount rack (Dimension-DxWxH – 800x600x1265 mm) as per specification No. WG-NAS/RAK	Each	WG-NAS/RAK	21	
CSR : 1-12-19		Supplying and fixing 12U wall Mount rack (Dimension-DxWxH – 500x600x635 mm) as per specification No. WG-NAS/RAK	Each	WG-NAS/RAK	21	
CSR : 1-11-3		Supplying, fixing, and configuring 24 ports, POE switch in provided rack as per specification No. WG-NWC/ENS	Each	WG-NWC/ENS	19	
R3-ME-12-9-x		SITC of Media convertor (fibre to Ethernet)	Each	MCGM SOR 2023 R3-ME-12-9-x	180	
CSR : 1-10-19		Supplying and fixing 3 M UTP patch cord of Cat 6 type in position as per specification No. WG-COC/PC	Each	WG-COC/PC	19	
CSR : 1-10-11		Supplying and erecting LSZH armoured Multimode optical fibre cable with 12 fibres, core dia 50/125 µM (OM3), suitable up to 10 GBPS ethernet distance at 850 nM of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	Mtr.R	WG-COC/OFC	18	
CSR : 1-2-7		Supplying and erecting HMS PVC conduit 25 mm dia. with PVC accessories on wall /ceiling as per specification No: WG-MA/CON. (FOR INCOMMER WIRE SHAFT TO SHOP DB)	Mtr.R	WG-MA/CON.	4	
CSR : 1-11-2		Supplying, fixing, and configuring 8-ports Managed gigabit, Layer-2 switch, 10/100/1000 base-T, POE smart switch plus 2 SFP erected in provided rack complete.	Each	As directed by Engineer Incharge	19	
Fire alarm system & Public Address System						
R3-ME-15-32-a		Supply, Installation, testing & commissioning of addressable 2 loop Main fire alarm electronic control panel, expendable up to 4 loop & having Maximum 250 devices (any combination detectors plus devices) per loop & Audio/ Visual alarm complete as per IS: 2189 specification- Modular type front operated with interlocking door arrangement totally enclosed dust and vermin proof for indoor type applications.	Each	MCGM SOR 2023 R3-ME-15-32-a	207	
R3-ME-15-32-b		Supply, Installation, testing & commissioning of expandable Loop card for Main fire alarm electronic control panel, shall support 254 devices both detectors and Modules and shall support both class 'A' & class 'B' wiring.	Each	MCGM SOR 2023 R3-ME-15-32-b	207	
R3-ME-15-32-c		Supply, Installation, testing & commissioning of 2Cx1.5 sq.mm armoured RED colour copper FRLS cable with necessary saddles, screws, junction boxes, sleeves, elbows couplings etc. for Fire alarm system	Mtr.	MCGM SOR 2023 R3-ME-15-32-c	207	
R3-ME-15-32-d		Supply, Installation, testing & commissioning of Intelligent Photoelectric Smoke Detector along with Mounting box & termination glands.	Each	MCGM SOR 2023 R3-ME-15-32-d	207	
R3-ME-15-32-e		Supply, Installation, testing & commissioning of Intelligent Heat Detector along with Mounting box & termination glands.	Each	MCGM SOR 2023 R3-ME-15-32-e	207	
R3-ME-15-32-f		Supply, Installation, testing & commissioning of Intelligent Multi- criteria Detector along with Mounting box & termination glands.	Each	MCGM SOR 2023 R3-ME-15-32-f	207	
R3-ME-15-32-g		Supply, Installation, testing & commissioning of Strobe Lights along with Mounting box & termination glands.	Each	MCGM SOR 2023 R3-ME-15-32-g	207	
R3-ME-15-32-h		Supply, Installation, testing & commissioning of Addressable Manual call Point/ station with Mounting back box	Each	MCGM SOR 2023 R3-ME-15-32-h	207	
R3-ME-15-32-i		Supply, Installation, testing & commissioning of Programmable Electronic Sounders (Hooters):	Each	MCGM SOR 2023 R3-ME-15-32-i	207	
R3-ME-15-32-j		Supply, Installation, testing & commissioning of remote response indicator	Each	MCGM SOR 2023 R3-ME-15-32-j	208	
R3-ME-15-32-k		Supply, Installation, testing & commissioning of Isolator Module along with Mounting box & termination glands.	Each	MCGM SOR 2023 R3-ME-15-32-k	208	
R3-ME-15-32-l		Supply, Installation, testing & commissioning of Addressable control Relay Module with required accessories along with junction box, glands and terminators (For AC trip off, Access trip off, PA system, sprinkler flow switch, lift interface, sounder, fire fighter & telephone jack)	Each	MCGM SOR 2023 R3-ME-15-32-l	208	
R3-ME-15-32-M		Supply, Installation, testing & commissioning of Active Repeater panel with all accessories, which shall be replica of Main fire alarm panel with control keys i.e. Mute, silent & sounder alarm.	Each	MCGM SOR 2023 R3-ME-15-32-m	208	
R3-ME-15-32-n		Supply, Installation, testing & commissioning of Passive Repeater panel with all accessories, which shall be replica of Main fire alarm panel except control keys i.e. Mute, silent & sounder alarm.	Each	MCGM SOR 2023 R3-ME-15-32-n	208	

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		Public Address system				
	MCGM : R3-ME-12-10-d	Supplying, Installation testing & commissioning of 6W Ceiling Speaker with Max SPL@1M/1W 88db. Frequency response of 125Hz-16KHz. The speaker Must have a Metal grill & tapping at 6W/3W/1.5W. White colour speaker.	Each	MCGM SOR 2023 R3-ME-12-10-d	180	
	MCGM : R3-ME-12-10-u	Supply and installation of Booster amplifier 500W with all accessories.	Each	MCGM SOR 2023 R3-ME-12-10-u	181	
	MCGM : R3-ME-12-10-v	Supply and installation of Booster amplifier 300W with all accessories.	Each	MCGM SOR 2023 R3-ME-12-10-v	181	
	MCGM : R3-ME-12-10-l	Wiring for speakers with 24/0.2 Multicore twin twisted flexible copper.	Mtr.	MCGM SOR 2023 R3-ME-12-10-l	181	
	CSR : 1-2-3	Supplying and erecting HMS PVC conduit FRLS grade 20 mm dia. With PVC accessories on wall / ceiling as per specification No: WG-MA /CON.	Mtr.	WG-MA/CON.	4	
	CSR : 1-2-4	Supplying and erecting HMS PVC conduit FRLS grade 25 mm dia. With PVC accessories on wall / ceiling as per specification No: WG-MA /CON.	Mtr.	WG-MA/CON.	4	
	CSR : 1-2-20	Supplying & erecting GI flexible Conduit 25 mm dia. conforming to I.S. with required number of couplings, bushes, check nuts etc. complete	Mtr.	As directed by Engineer Incharge	4	
	MCGM : R3-ME-12-10-h	Supply & installation of 16 channel zone control panel/ Zone selector to control the output of the amplifier.	Each	MCGM SOR 2023 R3-ME-12-10-h	181	
	MCGM : R3-ME-12-10-j	Supply & installation of Unidirectional Dynamic Vocal & Speech Microphone	Each	MCGM SOR 2023 R3-ME-12-10-i	181	
	CSR : 1-12-19	Supplying and fixing 12U wall Mount rack (Dimension-DxWxH – 500x600x635 mm) as per specification No. WG-NAS/RAK	Each	WG-NAS/RAK	21	
	CSR : 1-12-26	Supplying and fixing 36U floor Mount server rack (Dimension-DxWxH – 800x600x1600 mm) as per specification No. WG-NAS/RAK	Each	WG-NAS/RAK	21	
		Telephone System				
	CSR : 1-6-15	Supplying and erecting Modular type telephone socket one gang with safety shutter, duly erected on provided plate and box with wiring connections complete.	Each	As directed by Engineer Incharge	9	
	CSR : 1-12-19	Supplying and fixing 12U wall Mount rack (Dimension-DxWxH – 500x600x635 mm) as per specification No. WG-NAS/RAK	Each	WG-NAS/RAK	21	
	CSR : 1-12-26	Supplying and fixing 36U floor Mount server rack (Dimension-DxWxH – 800x600x1600 mm) as per specification No. WG-NAS/RAK	Each	WG-NAS/RAK	21	
		UPS & Inverter				
I		UPS & INVERTER				
	CSR : 3-7-3	Supplying, erecting, testing and commissioning of 3kVA capacity online pure sine wave with backup time of 1 hrs. PWM & IGBT based UPS with 0.8 to unity output pf, single phase input & 1 phase output complete with all protections as per specification no. AP-UPS	Each	AP-UPS	50	
	CSR : 3-7-7	Supplying, erecting, testing and commissioning of 10kVA capacity online pure sine wave, with backup time of 1 hrs. PWM & IGBT based UPS with 0.9 to unity output pf, 3 phase input & 3 phase output complete with all protections as per specification no. AP-UPS	Each	AP-UPS	50	
	CSR : 3-6-4	Supplying, installing, testing and commissioning of single phase, 230V, 50 Hz, 2500 VA digital pure sine wave inverter with backup time of 2 hrs. based on Insulated Gate Bipolar Transistor (IGBT) technology complete as per specification no. AP-INV	Each	AP-INV	50	
II		BATTERIES FOR UPS & INVERTER				
	CSR : 3-8-1	Supplying and erecting 12V/80Ah to 88Ah tubular battery with battery terminal wire, duly charged with 36 Months warranty complete.	Each	As per Technical Specification	51	
	CSR : 3-8-2	Supplying and erecting 12V/100Ah tubular battery with battery terminal wire, duly charged with 36 Months warranty complete.	Each	As per Technical Specification	51	
	CSR : 3-8-10	Supplying and erecting 12V/42Ah SMF battery with battery terminal wire, duly charged with 24 Months warranty complete	Each	As per Technical Specification	51	
	CSR : 3-8-11	Supplying and erecting 12V/65Ah SMF battery with battery terminal wire, duly charged with 24 Months warranty complete	Each	As per Technical Specification	51	
	CSR : 3-8-12	Supplying and erecting 12V/100Ah SMF battery with battery terminal wire, duly charged with 24 Months warranty complete	Each	As per Technical Specification	51	
		LIASIONING WORK				
1	APPROX	Liasioning Work For Electrical works of Mumbai Municipal Corporation/BEST/PWD including getting all necessary permissions & approvals from them all complete.	Lot			

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Lift Work						
1		Design, Manufacturing, supply, installation, testing & commissioning of lifts elevators 15 Passengers, 1080Kg, No. of Stops & other finishes as shown in the lift Particulars				
	MR	Commercial Lifts-1 (Gr+16) - 1.75Mt/Sec. - 1020 kg Shaft Size 2.1 x 2.3 Car Size : As shown in the lift particulars	No..	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Commercial Lifts-2 (Gr+16) - 1.75Mt/Sec. - 884 Kg Shaft Size 2.1 x 2.3 Car Size : As shown in the lift particulars		MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Service Lifts (Gr+16) - 1.75Mt/Sec. 884 Kg Shaft Size 2.3 x 1.9 Car Size : As shown in the lift particulars	No..	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	Fish market Lift (Gr+2) - 1.00Mt/Sec. 1020Kg Shaft Size 2.4 x 1.9 Car Size : As shown in the lift particulars	No..	MR - As per Manufacturer's Recommendation & Technical Specification		
2		Providing Comprehensive Maintenance for all type of lift Elevators for the period of 1 year after handing over the lifts to MMRCCL after Warrantee period.				
		Comprehensive Maintenance for 1 year for all 4 no. of lifts	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
3	MR	Fully Automated Tower Type Car Parking System-68 Meter Height	lot	MR - As per Manufacturer's Recommendation & Technical Specification		

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VENTILATION WORK						
		NOTE:- PLEASE NOTE THAT THE ITEMS WHICH ARE COVERED UNDER LATEST PWD - CURRENT SCHEDULED RATES ,WILL BE PAID AS PER THOSE RATES.				
1.0		ALL SHEET METAL WORK , DUCTING, GRILL, DIFFUSER, DAMPERS ETC,				
		SHEET METAL WORKS				
1.1		FACTORY MADE GI Duct as per SMACNA STD'S				
		Supplying, fabricating, installing and testing of site /factory fabricated G.S.S. rectangular / Round / flat oval metal ducting Galvanizing shall be 120gms/sq.m. (total coating on both sides). complete as per SMACNA with splitter damper, duct damper, vanes neoprene or equivalent approved gasket, MS supports for vertical ducting, hanging supports, rods nuts etc. as required & as per specifications and approved shop drawing complete as required.				
1.1.1	MR	18 G Ducting for plenum and bigger ducts	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.1.2	R3-ME-9-52-a	20 G Ducting	SQFT	MCGM SOR 2023 R3-ME-9-52-a	158	
1.1.3	R3-ME-9-52-b	22 G Ducting	SQFT	MCGM SOR 2023 R3-ME-9-52-b	158	
1.1.4	R3-ME-9-52-c	24 G Ducting	SQFT	MCGM SOR 2023 R3-ME-9-52-c	158	
1.1.5	MR	26 G Ducting	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.2		SITE FABRICATION DUCTS WITH COMPLETE SUPPORTS ARRAGEMNET AS PER IS -277 / IS-655 Standards				
1.2.1	MR	18 G Plenum (Site Fabricated)	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.2.2	MR	20 G Ducting (upto 1500mm upto 2250mm any side)	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.2.3	MR	22 G Ducting (above 750mm upto 1500mm any side)	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.2.4	MR	24 G Ducting (upto 750mm any side)	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.2.5	MR	26 G Ducting (above 1mm upto 550mm any side)	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.3		SS BIRD SCREEN				
1.3.1	MR	Supply, installation, testing and commissioning SS-304 Grade BIRD SCREEN as per specifications and drawings.	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.4		Volume Control Dampers for Exhaust air Collar				
1.4.1	MR	Supply and installation 16 G.I. Volume control Damper in Ducts complete as per specifications and drawings.	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.5		Volume Control Dampers for Fresh air Collar				
1.5.1	MR	Supply and installation 16 G.I. Volume control Damper in Collar of ducts complete as per specifications and drawings.	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.6		Grilles, Diffusers & Dampers				
		Supply, installation, testing and commissioning Aluminium powder coated supply and return air grilles/diffusers as per specifications and drawings.				
		Note : If required Contractor should blank off the extra portion of grille without additional cost and provide deflection of 0 deg to 15/30/45 deg without extra cost				
1.6.1	MR	Aluminium supply air grills with dampers	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.6.2	MR	Aluminum return air grilles without dampers.	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.6.3	MR	Aluminum exhaust air diffusers with dampers.	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.6.4	MR	Duct damper in main ducts	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.7		Supply, Installation, Testing and Commissioning of motorised fire dampers suitable for at least 90 minutes fire rating as per the specifications and approved shop drawings. Quoted price shall be inclusive of copper control wiring as required.				
1.7.1	MR	Bare Fire Dampers	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.7.2	MR	Spring return action type actuator complete with control panel and temperature sensor. Torque not less than 9NM.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		

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1.8		Supply, Installation, Testing and Commissioning of Aluminum zero leakage motorised duct dampers as per the specifications and approved shop drawings. Quoted price shall be inclusive of copper control wiring as required.				
1.8.1	MR	Bare Dampers	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
1.8.2	MR	Spring return action type actuator complete with control panel and temperature sensor. Torque not less than 9 Nm	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
1.9		Supply, Installation, Testing and Commissioning of Pressure regulating dampers suitable to maintain 5mm pressure inside Lift Well/Hoist . The dampers shall be constructed out of extruded Aluminum aerofoil design blades with necessary powder coating finish. The blades shall automatically maintain pressure within bandwidth of +3 Pa. The dampers shall be suitable for duct installation as per detail specifications.				
	MR	Damper as per sizes in Design Drawings :	SQFT	MR - As per Manufacturer's Recommendation & Technical Specification		
2.0		All fresh air, Exhaust, Smoke spill FANS with Double Fire retardant Canvass connections, motor, Starter panels/MCB , with potential free contacts for fire signal trip. SITC cubicle type Local Control Panels / DOL Starter Panels with MCB Single Phase Preventer/ DP Switch				
		The inline fans & Cabinet fans shall be complete with Centrifugal fan, unit casing access door, electrical connections canopy fan shall be suitable for outdoor installation A/C contractor to include all accessories for installation of inline fan with fire retardant canvass connection, motors, starters, power cabling upto 10 mtrs From each fan to power sockets nearby arrange by Electrical Contractor.				
2.1	MR	Exhaust Fan				
		CABINET TYPE EXTRACT FAN SECTIONS				
2.1.1	MR	9200 CFM @ 60 MM Static Floor mounted cabinet Type Exhaust fan for (ETP PLANT ROOM) Basement area.	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.2	MR	9700 CFM @ 55 MM Static Floor mounted cabinet Type Exhaust fan for GF Fish market area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.3	MR	2610 CFM @ 55 MM Static Floor mounted cabinet Type Exhaust fan for GF,1F,2F Wash Areas .	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.4	MR	13800 CFM @ 55 MM Static Floor mounted cabinet Type Exhaust fan for 1F Fish market area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.5	MR	14500 CFM @ 55 MM Static Floor mounted cabinet Type Exhaust fan for 2F Fish market area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	INLINE TYPE FANS WITH 3 SPEED REGULATORS		MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.6	MR	140 CFM @ 10-12 MM Static ceiling suspended inline Fan Type Exhaust fan for Ground Floor area Handicap Toilet area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.7	MR	360 CFM @ 14 MM Static ceiling suspended inline Fan Type Exhaust fan for Ground Floor area Female/Male Toilet area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.8	MR	110 CFM @ 10-12 MM Static ceiling suspended inline Fan Type Exhaust fan for First Floor area Handicap Toilet area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.9	MR	350 CFM @ 14 MM Static ceiling suspended inline Fan Type Exhaust fan for First Floor area Female/Male Toilet area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.10	MR	100 CFM @ 10-12 MM Static ceiling suspended inline Fan Type Exhaust fan for 2nd Floor area Handicap Toilet area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.11	MR	350 CFM @ 14 MM Static ceiling suspended inline Fan Type Exhaust fan for 2nd Floor area Female Toilet area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.12	MR	380 CFM @ 14 MM Static ceiling suspended inline Fan Type Exhaust fan for 2nd Floor area Male Toilet area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.13	MR	60 CFM @ 10-12 MM Static ceiling suspended inline Fan Type Exhaust fan for 4th Floor shop Toilet area	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.14	MR	100 CFM @ 10-12 MM Static ceiling suspended inline Fan Type Exhaust fan for 4th, 5th,6th, 7th ,8th,9th,10th,11th,12th,13th,14th,15th,16th Floor areas Handicap Toilet.	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.15	MR	300 CFM @ 14 MM Static ceiling suspended inline Fan Type Exhaust fan for 4th, 5th,6th, 7th ,8th,9th,10th,11th,12th,13th,14th,15th,16th Floor areas Female Toilet.	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
2.1.16	MR	320 CFM @ 14 MM Static ceiling suspended inline Fan Type Exhaust fan for 4th, 5th,6th, 7th ,8th,9th,10th,11th,12th,13th,14th,15th,16th Floor areas Male Toilet.	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.0		TUBE AXIAL FLOW FANS				

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		Supply, installation, testing and commissioning of Tube Axial Fan with Double Fire retardant Canvass connection, impeller having adjustable pitch angle blades and complete with suitable motor & drive assembly. Motor shall also be suitable for Variable Speed drive & shall be high efficiency Class IE3. Motor shall be suitable for 415 ± 10% V, 3 Phase, 4 Wire, 50 ± 3%Hz electrical supply. Fans shall be AMCA Certified. The complete fan assembly along with the motor & drive assembly shall be fire rated i.e. suitable to operate upto 250°C for 2 hours and meet the duty parameters. Axial exhaust air fan are required to be in compliance with the requirements of Class B performance, as defined in clause 9 of BS 7346:Part 2:1990. This requires the fan to be subjected to a rated temperature of 250C for a rated duration of 120 minutes. with M.S floating foundations, motors, and all other accessories whether specifically mentioned or not. Note: Fan motor rpm not to exceed 600. All 3-phase Unit shall be supplied along with starter panel and local push button station near the Fan location. Electrical power cabling from Starter to motor is in HVAC contractor's scope. (with NO/NC Relay contact with starter panel auto start on signal for fire alarm panel)				
		FOR SMOKE EHAUST				
3.1	MR	Axial Exhaust Air Fan 800 CFM @20 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby Upper GF, 1F, 2F areas)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.2	MR	Axial Exhaust Air Fan 500 CFM @20 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby lower GF, 1F areas)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.3	MR	Axial Exhaust Air Fan 700 CFM @20 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby lower 2F area)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.4	MR	Axial Exhaust Air Fan 750 CFM @20 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby Upper 3rd floor area)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.5	MR	Axial Exhaust Air Fan 750 CFM @20 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby lower 3rd floor area)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.6	MR	Axial Exhaust Air Fan 1730 CFM @20 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby Upper (4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th Floors)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.7	MR	Axial Exhaust Air Fan 7050 CFM @20 MM Static Ceiling Suspended For Fire Mode (FOR Meter room & Service space, corridor & flushing Tank lower 3F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.8	MR	Axial Exhaust Air Fan 2050 CFM @20 MM Static Ceiling Suspended For Fire Mode (FOR Transformer room 3F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
	MR	FOR COMPENSATION AIR WITH FILTERS				
3.9	MR	Axial Compensation Air Fan 9200 CFM @20 MM Static Ceiling Suspended For Normal/Fire Mode (FOR ETP Room /Pump room)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.10	MR	Axial Compensation Air Fan 7300 CFM @18 MM Static Ceiling Suspended For Normal/Fire Mode (FOR Fish market area GF)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.11	MR	Axial Compensation Air Fan 800 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby Upper GF & 1F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.12	MR	Axial Compensation Air Fan 500 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby Lower GF & 1F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.13	MR	Axial Compensation Air Fan 1000 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR Wash Area GF)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.14	MR	Axial Compensation Air Fan 10330 CFM @ 18 MM Static Ceiling Suspended For Normal/Fire Mode (FOR Fish market , 1F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.15	MR	Axial Compensation Air Fan 800 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby Upper 2F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.16	MR	Axial Compensation Air Fan 700 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby Lower 2F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.17	MR	Axial Compensation Air Fan 10850 CFM @ 18 MM Static Ceiling Suspended For Normal/Fire Mode (FOR Fish market , 2F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.18	MR	Axial Compensation Air Fan 560 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR Wash Area 2F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.19	MR	Axial Compensation Air Fan 750 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby Upper 3F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.20	MR	Axial Compensation Air Fan 750 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR Lift Lobby Upper 3F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.21	MR	Axial Compensation Air Fan 400 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR wash Area 3F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.22	MR	Axial Compensation Air Fan 1730 CFM @15 MM Static Ceiling Suspended For Fire Mode (FOR Corridor Upper 4th, 5th, 6th, 7th , 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th Floors)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.23	MR	Axial Compensation Air Fan 7050 CFM @18 MM Static Ceiling Suspended For Fire Mode (FOR Meter room & Service space, corridor & flushing Tank lower 3F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
3.2	MR	Axial Compensation Air Fan 2050 CFM @18 MM Static Ceiling Suspended For Fire Mode (FOR Transformer Room 3F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
4.0		Lift Well/HOIST Pressurisation				
		FOR Pressurisation Fan for Fire Lift Well Supply, Installation testing & commissioning of Tube Axial Flow Fans with Canvass connections, VFD, Differential pressure sensors set @ 50 pascal Pressure. fan with Starter Panel & M.S floating foundations, motors, and all other accessories All other parameters as per the technical specifications given in the tender				

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4.1	MR	15,000 CFM @ 50 MM Static with VFD , Differential Pressure Sensor set @ 40 -50 pascal (For normal Lifts up to 16th Floors)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
4.2	MR	8,000 CFM @ 40 MM Static with VFD , Differential Pressure Sensor set @ 40 -50 pascal (For Fish Lift well GF,1F & 2F)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
4.3	MR	8,500 CFM @ 40 MM Static with VFD , Differential Pressure Sensor set @ 40 -50 pascal (For Staircase well 1 GF & BS)	NOS	MR - As per Manufacturer's Recommendation & Technical Specification		
5.0		POWER CABLES FOR FANS Supply, laying, dressing, termination, testing & commissioning 1100 V grade, aluminium/copper conductor, PVC insulated, steel wire/strip armoured, PVC sheathed power and control cables as per specs. Of following sizes, to be laid on trays including clamping, as per specs. All cabling to Fans , Fans controls from Fans Panel ,also include control cable for thermostats and control transformer Cable laying shall include ,dressing, identification tagging marking,				
5.1	CSR-7-2-33	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 10 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	RMT	CB-LT/CU	132	
5.2	CSR-7-2-32	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 6 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	RMT	CB-LT/CU	132	
5.3	CSR-7-2-31	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 4 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	RMT	CB-LT/CU	132	
5.4	CSR-7-2-14	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 2.5 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	RMT	CB-LT/CU	131	
5.5	CSR-7-2-14	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 2.5 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	RMT	CB-LT/CU	131	
6.1	CSR-7-1-31	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 35 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	RMT	CB-LT/AL	128	
6.2	CSR-7-1-32	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 50 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	RMT	CB-LT/AL	128	
7.0		Cable Trays For Supply, installation of G.I. CABLE TRAYS of following sizes perforated TYPE with proper clamping and hanging accessories for running cables. Perforated Cable tray without cover for All internal refrigerant piping & Cables of following sizes: Readymade 2500mm standard length, prefabricated, perforated cable tray from MS sheet and then hot dip galvanised, of following sizes and associated accessories such as coupler plates, tees, elbow etc. Galvanisation thickness shall be minimum 86 Micron.				
7.1	R3-ME-2-13-k	G.I. Cable tray with all other accessories 450 x 75mm (W x H) - (14SWG - 2mm) without cover	RMT	MCGM SOR 2023 R3-ME-2-13-k	57	
7.3	R3-ME-2-13-e	G.I. Cable tray with all other accessories 300 x 50mm (W x H) - (16 SWG - 1.6mm) without cover	RMT	MCGM SOR 2023 R3-ME-2-13-e	57	
7.4	R3-ME-2-13-d	G.I. Cable tray with all other accessories 200 x 50mm (W x H) - (16 SWG - 1.6mm) without cover	RMT	MCGM SOR 2023 R3-ME-2-13-d	57	
7.5	R3-ME-2-13-c	G.I. Cable tray with all other accessories 150 x 25mm (W x H) - (16 SWG - 1.6mm) without cover	RMT	MCGM SOR 2023 R3-ME-2-13-c	57	

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8.0		Earthing				
		Supply and fixing of G.I. wire/GI, CU strip type earthing between all equipments as required for following sizes with all necessary connections etc.				
8.1	CSR-9-2-4	Supplying and erecting annealed bare copper wire of high purity of required sizes used for earthing on wall with necessary copper clamps fixed on wall/cable/conduit with screws complete.	KG	as	161	
8.2	CSR-9-2-3	Supplying and erecting GI strip of high purity required size used for earthing on wall and/or any other purpose with necessary GI clamps fixed on wall painted with bituminous paint with joints required. As per specification no EA-EP.	KG	As per Technical Specification	160	
8.3	CSR-9-2-2	Supplying and erecting copper strip of high purity required size used for earthing on wall and/or any other purpose with necessary copper clamps fixed on wall painted with bituminous paint with joints required. As per specification no. EAEP.	KG	As per Technical Specification	160	
9.0		OZONE Generators				
		Supplying, Installation, Testing & Commissioning of tubular type Ozone Generators to deodorisation of smell Generated by ETP & smell Generated in Fish market . The Generator shall be equipped with all controllers, valves , air compressor, Air dryer and accessories as required . The generator shall also have relevant controls to restrict ozone rating as per permissible limit for Human life and safety. The Generator shall completely eradicate the smell as per specifications.				
		Ozone Generators as desired .				
9.1	MR	Suitable for 9200 CFM Exhaust fan located on Terrace (ETP PLANT ROOM) .	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
9.2	MR	Suitable for 9700 CFM Exhaust fan located on Terrace -GF Fish market	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
9.3	MR	Suitable for 2610 CFM Exhaust fan for GF, 1F, 2F Wash Areas fish market, Located on Terrace.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
9.4	MR	Suitable for 13800 CFM Exhaust fan for 1F Fish market Area, Located on Terrace	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
9.5	MR	Suitable for 14500 CFM Exhaust fan for 2F Fish market area, Located on Terrace.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
10.0		VENTILATION PANELS				
		(LOCATION : NEAR FAN AT RESPECTIVE FLOORS/ ROOMS)				
		Supply , Installation, Testing and Commissioning of floor mounted cubicle type electrical panel complete with aluminium bus bars, incoming, out going feeders etc. as per specifications, drawings and as described below. The panel shall incorporate an extract fan mounted at the top of the panel complete with thermostat suitable to run the fan at 50 deg C. Panel shall include digital type Energy meters.				
10.1	MR	VP-1 & 02 (BASEMENT & GROUND FLOOR)		MR - As per Manufacturer's Recommendation & Technical Specification		
		NORMAL VENTING PANELS				
		Location : Near respective Fans				
		INCOMING :				
		a. 100/63 ATP MCCB - 01set.				
		b. Digital type voltmeter (0-500) V, digital type Ammeter, selector switches, RYB LED type indication lights----01 set.				
		BUSBARS :				
		Electrolytic grade (E 91E), 100 Amp. Capacity				
		TPN aluminium bus bar, PVC heat shrunk insulated, supported on DMC/SMC having fault level of 25 KA for 1 second .- 01 set.				
		OUTGOING :				
		a. 32A TP MCB with fully automatic DOL starter with built-in single phasing preventer overload relay ,digital type ammeter with CTs & selector switch for 5.0 HP Extract Fan				
		a set of ON & OFF indication lights, Energy Meters & START- STOP push buttons---01 set.				
		b. 40A TP MCB with fully automatic DOL starter with built-in single phasing preventer overload relay ,digital type ammeter with CTs & selector switch for 10 HP Extract Fan				
		a set of ON & OFF indication lights, Energy Meters & START- STOP push buttons---01 sets.				
		c. Auto-Manual type selector switch to facilitate auto start of Fan after restoration of power. ----02 sets.				
		d. Control wiring & safety circuit as required with Start-Stop PB's stay put or lockable type and LED type 'ON' 'OFF' indication lights. ----02 sets.				
		e. 40A TP MCB ---- 02 Nos (Spare)				
		Ventilation Panel as described above.	No			

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
10.2	MR	Ground Floor Wash Area (VP-3)				MR - As per Manufacturer's Recommendation & Technical Specification
		NORMAL VENTING PANELS				
		Location : Near respective Fans				
		INCOMING :				
		a. 100/63 ATP MCCB - 01 set.				
		b. Digital type voltmeter (0-500) V, digital type				
		Ammeter, selector switches, RYB LED type				
		indication lights----01 set.				
		BUSBARS :				
		Electrolytic grade 100 Amp. Capacity				
		TPN aluminium bus bar, PVC heat shrunk				
		insulated, supported on DMC/SMC having				
		fault level of 25 KA for 1 second .- 01 set.				
		OUTGOING :				
		a. 32A TP MCB with fully automatic DOL starter with built-in				
		single phasing preventer overload relay ,digital type ammeter				
		with CTs & selector switch for 3.0/1.5 HP Extract Fan				
		a set of ON & OFF indication lights, Energy Meters &				
		START- STOP push buttons---02 sets.				
		b. 25/20A TP MCB with fully automatic DOL starter with built-in				
		single phasing preventer overload relay ,digital type ammeter				
		with CTs & selector switch for 1.5/1.0 HP Extract Fan				
		a set of ON & OFF indication lights, Energy Meters &				
		START- STOP push buttons---02 sets.				
		c. Auto-Manual type selector switch to facilitate auto start of				
		Fan after restoration of power.---- 04 sets				
		d. Control wiring & safety circuit as				
		required with Start-Stop PB's stay put				
		or lockable type and LED type 'ON' 'OFF'				
		indication lights. ---- 04 sets				
		e. 32A TP MCB ---- 02 Nos (Spare)				
		Ventilation Panel as described above.	No			

Item No	SSK Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
10.3	MR	First & Second Floor Fish market (VP-04&05)			MR - As per Manufacturer's Recommendation & Technical Specification	
		SMOKE VENTING PANELS				
		Location : Respective Near respective Fans				
		INCOMING :				
		a. 100 A TP MCCB - 01set.				
		b. Digital type voltmeter (0-500) V, digital type Ammeter, selector switches, RYB LED type indication lights----01 set.				
		BUSBARS :				
		Electrolytic grade 100 Amp. Capacity TPN aluminium bus bar, PVC heat shrunk insulated, supported on DMC/SMC having fault level of 25 KA for 1 second .- 01 set.				
		OUTGOING :				
		a. 40A TP MCB with fully automatic DOL starter with built-in single phasing preventer overload relay ,digital type ammeter with CTs & selector switch for 7.5 HP Extract Fan a set of ON & OFF indication lights, Energy Meters & START- STOP push buttons---01 set.				
		b. 63A TP MCB with fully automatic Star-Delta starter with built-in single phasing preventer overload relay ,digital type ammeter with CTs & selector switch for 12.0 HP Extract Fan a set of ON & OFF indication lights, Energy Meters & START- STOP push buttons---01 set.				
		c. Auto-Manual type selector switch to facilitate auto start of VP after restoration of power.---- 02 sets.				
		d. Control wiring & safety circuit as required with Start-Stop PB's stay put or lockable type and LED type 'ON' 'OFF' indication lights. ---- 02 sets.				
		e. 63A TP MCB ---- 02 Nos (Spare)				
		Ventilation Panel as described above.	No			
10.4	MR	VP-06 & 07 (METER & TRANSFORMER ROOM)			MR - As per Manufacturer's Recommendation & Technical Specification	
		NORMAL VENTING PANELS				
		Location : Near respective Fans				
		INCOMING :				
		a. 100/63 ATP MCCB - 01set.				
		b. Digital type voltmeter (0-500) V, digital type Ammeter, selector switches, RYB LED type indication lights----01 set.				
		BUSBARS :				
		Electrolytic grade 100 Amp. Capacity TPN aluminium bus bar, PVC heat shrunk insulated, supported on DMC/SMC having fault level of 25 KA for 1 second .- 01 set.				
		OUTGOING :				
		a. 32A TP MCB with fully automatic DOL starter with built-in single phasing preventer overload relay ,digital type ammeter with CTs & selector switch for 5.0 HP Extract Fan a set of ON & OFF indication lights, Energy Meters & START- STOP push buttons---02 sets.				
		b. Auto-Manual type selector switch to facilitate auto start of Fan after restoration of power. ----02 sets.				
		c. Control wiring & safety circuit as required with Start-Stop PB's stay put or lockable type and LED type 'ON' 'OFF' indication lights. ----02 sets.				
		d. 32A TP MCB ---- 02 Nos (Spare)				
		Ventilation Panel as described above.	No			

Item No	SSK Item Ref. 2022-23 / MCGM SOB	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
10.5	MR	VENTILATION PANELS VP-08 TO 11			MR - As per Manufacturer's Recommendation & Technical Specification	
		NORMAL VENTING PANELS				
		Location : Near respective Fans				
		INCOMING :				
		a. 40A TPN MCCB - 01set.				
		b. Digital type voltmeter (0-500) V, digital type Ammeter, selector switches, RYB LED type indication lights----01 set.				
		BUSBARS :				
		Electrolytic grade 100 Amp. Capacity				
		TPN aluminium bus bar, PVC heat shrunk insulated, supported on DMC/SMC having fault level of 25 KA for 1 second .- 01 set.				
		OUTGOING :				
		a. 20A TP MCB with fully automatic DOL starter with built-in single phasing preventer overload relay ,digital type ammeter with CTs & selector switch for 1.5/1.0 HP Extract Fan				
		a set of ON & OFF indication lights, Energy Meters & START- STOP push buttons---04 sets.				
		b. Auto-Manual type selector switch to facilitate auto start of Fan after restoration of power. ----04 sets.				
		c. Control wiring & safety circuit as required with Start-Stop PB's stay put or lockable type and LED type 'ON' 'OFF' indication lights. ----04 sets.				
		d. 20A TP MCB ---- 02 Nos (Spare)				
		Ventilation Panel as described above.	No			
10.6	MR	VENTING PANELS VP - 12 to 24			MR - As per Manufacturer's Recommendation & Technical Specification	
		Location : Respective Near respective Fans				
		INCOMING :				
		a. 40 A TP MCCB - 01set.				
		b. Digital type voltmeter (0-500) V, digital type Ammeter, selector switches, RYB LED type indication lights----01 set.				
		BUSBARS :				
		Electrolytic grade 63/50 Amp. Capacity				
		TPN aluminium bus bar, PVC heat shrunk insulated, supported on DMC/SMC having fault level of 25 KA for 1 second .- 01 set.				
		OUTGOING :				
		a. 32/25A TP MCB with fully automatic DOL starter with built-in single phasing preventer overload relay ,digital type ammeter with CTs & selector switch for 2/1.5 HP Extract Fan				
		a set of ON & OFF indication lights, Energy Meters & START- STOP push buttons---01 set.				
		b. 25/20A TP MCB with fully automatic DOL starter with built-in single phasing preventer overload relay ,digital type ammeter with CTs & selector switch for 1.5/1.0 HP Extract Fan				
		a set of ON & OFF indication lights, Energy Meters & START- STOP push buttons---01 set.				
		c. Auto-Manual type selector switch to facilitate auto start of VP after restoration of power. ---- 02 sets				
		d. Control wiring & safety circuit as required with Start-Stop PB's stay put or lockable type and LED type 'ON' 'OFF' indication lights. ---- 02 sets				
		e. 32A TP MCB ---- 02 Nos (Spare)				
		Ventilation Panel as described above.	No			

Item No	SSK Item Ref. 2022-23 / MCGM SOB	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
10.7	MR	LIFT PRESSURIZATION PANEL			MR - As per Manufacturer's Recommendation & Technical Specification	
		Location : Terrace				
		INCOMING :				
		a. 125A TPN MCCB - 01set.				
		b. Digital type voltmeter (0-500) V, digital type Ammeter, selector switches, RYB LED type indication lights----01 set.				
		BUSBARS :				
		Electrolytic grade 150 Amp. Capacity				
		TPN aluminium bus bar, PVC heat shrunk insulated, supported on DMC/SMC having fault level of 25 KA for 1 second.- 01 set.				
		OUTGOING :				
		a. 63A TP MCCB with fully automatic STAR-DELTA starter with built-in single phasing preventer overload relay ,digital type ammeter with CTs & selector switch for 15.0 HP Extract Fan				
		a set of ON & OFF indication lights, Energy Meters & START- STOP push buttons---03 sets.				
		b. Auto-Manual type selector switch to facilitate auto start of Fan after restoration of power. ----03 sets.				
		c. Control wiring & safety circuit as required with Start-Stop PB's stay put or lockable type and LED type 'ON' 'OFF' indication lights. ----03 sets.				
		d. 63A TP MCCB ---- 02 Nos (Spare)				
		Ventilation Panel as described above.	No			
10.8	MR	STAIRCASE /LIFTWELL PRESSURIZATION FAN PANEL			MR - As per Manufacturer's Recommendation & Technical Specification	
		Location : Near Respective FAN				
		a. 63A TP MCCB for 15 HP motor - 01set.				
		b. Digital type voltmeter (0-500) V, digital type Ammeter, selector switches, RYB LED type indication lights----01 set.				
		c. Fully automatic Star-Delta starter with built-in single phasing preventor, over load relay suitable for 15HP motor -01 set.				
		d. Auto-Manual type selector switch to facilitate auto start of Pressurization fan after restoration of power.				
		e. Control wiring & safety circuit as required with Start-Stop PB's stay put or lockable type and LED type 'ON' 'OFF' indication lights.				
		Pressurization Panel as described above.	No			
		Notes :				
		i. All smoke control fans & compensation air fans related to emergency shall be provided with NO/NC contact and control wiring as required.				
		ii. Connectivity Cost of emergency fan panels with nearest zone fire panels shall be included in the price quoted.				
		iii. All controls & wiring shall be included with no extra cost to the owners/department.				

Item No	SSR Item Ref. 2022-23 / MCGM SOB	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
Plumbing Work						
Plumbing Toilets Internal BOQ						
A		SANITARY FITTING WORK				
1	SSR-Item no 42.86/283	Providing and fixing European type wall-hung white water closet of approved Make with push valve (2/4 ltr) concealed type with cover plate 32mm size of approved Make including soil pipe, vent pipe up to outside face of wall, 100mm dia. G.I. plug bend inlet pipe all fittings, cutting and Making good walls, floors etc. complete.	No.	As directed by Engineer Incharge	283	
2	SSR-Item no 48.32/315	Providing and fixing wall hung white wash basin of size 350x450x165mm with approved Make pillar cock, C.P. Angular stop cock long thread approved Make continental including SS bottle trap of approved Make having necessary pipe connection up to the outside face of the wall etc complete as directed by Engineer in charge.	No.	As directed by Engineer Incharge	315	
B		C.P. FIXTURES FITTING WORK				
3	SSR-Item no 48.27/314	Providing and fixing C.P. 2 Way BIB cock with wall flange of approved Make including necessary sockets/ union nut etc. complete as directed by Engineer in charge.	No.	As directed by Engineer Incharge	314	
4	SSR-Item No- 234/536	C.P.Handshower (health faucet) 1m.PVC tube with wall hook jaquar make (Cat. No. ALD 563)	No.	As directed by Engineer Incharge	536	
5	SSR-Item no 42.79/282	Providing and fixing C.P. Angular stop clock with wall flange of approved make continental including necessary sockets/union nut etc. complete.	No.	As directed by Engineer Incharge	282	
6	SSR-Item no 42.20/276	Providing and fixing 450mm x 550mm size superior type Belgium Mirror with 16mm dia. nickel plated towel rod etc. complete.	No.	As directed by Engineer Incharge	276	
7	SSR-Item no 48.31/314	Providing and fixing white glazed urinal of series with Press Matic auto closing valve of having 32mm diameter P.V.C. flush pipe with fitting and flushing of approved Make and arrangement including lead soil pipe, lead trap & soil pipe connection up to the outside face of wall etc. Complete as directed by Engineer in charge.	No.	As directed by Engineer Incharge	314	
C		INTERNAL WATER SUPPLY				
8		Providing and fixing concealed in wall faces including labour following sizes of pipes CPVC SDR 11 with cement solvent joints with supply of necessary CPVC specials etc. (specials like sockets, union nut, elbows, bends, reducers, plugs hold title and T's etc. complete) including supply of cement solvent joint for water-tight joints including hydraulic testing as per ISS including Making holes, grooving in walls & roof with cutter Machine & Making good the damages by bringing them to good original condition & complete in all respects as directed by the Architect including etc complete. (For Internal toilet domestic, flushing & hot (geyser to tap) water supply pipes)				
8.1	CRS-4-2-17	Supplying and erecting 16/20 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 2.0 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification	Rmt.	ESD-HWP/CPVC	76	
8.2	CRS-4-2-18	Supplying and erecting 20/25 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 2.6 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification	Rmt.	ESD-HWP/CPVC	76	
8.3	CRS-4-2-19	Supplying and erecting 25/32 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 3.2 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC	Rmt.	ESD-HWP/CPVC	76	
8.4	CRS-4-2-20	Supplying and erecting 32/40 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 3.8 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC	Rmt.	ESD-HWP/CPVC	76	
8.5	CRS-4-2-21	Supplying and erecting 40/50 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 3.8 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC	Rmt.	ESD-HWP/CPVC	76	
8.6	SSR-Item no 42.60/280	Providing and fixing on walls/ ceiling/ floor 50 mm dia. CPVC pipe with necessary fittings, remaking good the demolished portion etc. complete.	Rmt.	As per technical specficcation	280	
D		INTERNAL SOIL/ WASTE				
9	SSR-Item no 42.25/276	Providing, laying and fixing P.V.C. pipe of 40mm dia. with fittings such as bends, tees, reducers, clamps, etc. including necessary excavation, trench filling etc. complete.	Rmt.	As per technical specficcation	276	
10	SSR-Item no 42.26/276	Providing, laying and fixing P.V.C. pipe of 50mm dia. with fittings such as bends, tees, reducers, clamps, etc. including necessary excavation, trench filling etc. complete.	Rmt.	As per technical specficcation	276	
11	SSR-Item no 42.51/279	Providing and fixing 75 mm Dia stabiliser pipe/ P.V.C. soil vent/waste pipe and with necessary fixtures and fitting such as bends, tees, single junctions, slotted vent, clamps etc. complete	Rmt.	As per technical specficcation	279	
12	SSR-Item no 42.52/279	Providing and fixing 100 mm Dia stabiliser pipe/ P.V.C. soil vent/waste pipe and with necessary fixtures and fitting such as bends, tees, single junctions, slotted vent, clamps etc. complete.	Rmt.	As per technical specficcation	279	
13	SSR-Item no 41.80/273	Providing and fixing 10cm C.I. Nahanni Trap including C.I. grating bend and piece of C.I. pipe up to the outside face of the wall complete.	No.	Bd.V.32 Page One Number567	567	
14	SSR-Item no 152/534	Providing and fixing C.I.Trap grating 15*10 cm the outside face of the wall complete.	No.	As directed by Engineer Incharge	534	

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
Plumbing External BOQ						
A		Bldg. External water Supply				
1		Providing and fixing in position tested uPVC pipes conforming to ASTM D-1785 Schedule 80 with all fittings like bends, tees, reducers, elbows, unions Schedule 80 including supporting on walls complete including scaffolding and hydraulic testing after laying of pipes as specified and including Making holes in the walls or floors as required and redoing the same (For pump outlet to OH Tank, Terrace looping, Downcomer of domestic & flushing water supply pipes)			MR - As per Manufacturer's Recommendation & Technical Specification	
a	MR	15 mm nominal bore	Rmt.			
b	MR	20 mm nominal bore	Rmt.			
c	MR	25 mm nominal bore	Rmt.			
d	MR	32 mm nominal bore	Rmt.			
e	MR	40 mm nominal bore	Rmt.			
f	MR	50 mm nominal bore	Rmt.			
g	MR	65 mm nominal bore	Rmt.			
h	MR	80 mm nominal bore	Rmt.			
i	MR	100 mm nominal bore	Rmt.			
j	MR	150 mm nominal bore	Rmt.			
2	SSR Item No-41.15/267	Providing and fixing on walls/ ceiling/ floors, 50 mm dia.heavy grade having embossed as ISI Mark galvanized iron pipes weight of 10.15 Kg/Meter with necessary fittings. and remaking good and applying primer of anti-corrosive oil paint 2 coats etc.(UG TANK TO OH TANK)	Rmt.	Bd.V.5 Page One Number 551	551	
3	SSR Item No-41.16/267	Providing and fixing on walls/ ceiling/ floors, 80 mm dia.heavy grade having embossed as ISI Mark galvanized iron pipes weight of 10.15 Kg/Meter with necessary fittings. and remaking good and applying primer of anti-corrosive oil paint 2 coats etc.(UG TANK TO OH TANK)	Rmt.	Bd.V.5 Page One Number 551	551	
4	SSR Item No-41.17/268	Providing and fixing on walls/ ceiling/ floors, 100 mm dia.heavy grade having embossed as ISI Mark galvanized iron pipes weight of 10.15 Kg/Meter with necessary fittings. and remaking good and applying primer of anti-corrosive oil paint 2 coats etc.(UG TANK TO OH TANK)	Rmt.	Bd.V.5 Page One Number 551	551	
5	SSR Item No-41.16/268	Providing and fixing on walls/ ceiling/ floors, 80 mm dia.heavy grade having embossed as ISI Mark galvanized iron pipes weight of 14.74 Kg/Meter with necessary fittings and remaking good the demolished portion and applying primer of anti-corrosive oil paint 2 coats etc. complete. (MUNICIPAL & BORE WELL WATER SUPPLY LINE)	Rmt.	Bd.V.5 Page One Number 551	551	
6		Providing and fixing Brass/Bronze/S.S. Ball valve with pressure rating of PN-16 of approved Make with Material and labour etc all complete as per drawings, specifications and directions of the engineer-in-charge.			MR - As per Manufacturer's Recommendation & Technical Specification	
a	MR	15mm	No.			
b	MR	20mm	No.			
c	MR	25mm	No.			
d	MR	32mm	No.			
e	MR	40mm	No.			

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
7		Supplying & Fixing, cast iron body Butterfly Valves PN16 with Matching flanges, rubber insertion, nuts, bolts and washer etc. (IS:13095) of following size complete as reqd.			MR - As per Manufacturer's Recommendation & Technical Specification	
a	MR	50mm	No.			
b	MR	65mm	No.			
c	MR	80mm	No.			
d	MR	100mm	No.			
e	MR	150mm	No.			
8		Providing and fixing Pressure Reducing valves PN 16 of approved Make as indicated including provision of 3 No. of ball valves/Butterfly valves , for bypass arrangement etc. complete as directed by engineer-in-charge. Contractor to set pressure as per instructions from consultant during execution. (1 no. PRV)			MR - As per Manufacturer's Recommendation & Technical Specification	
a	MR	15 mm Dia	No.			
b	MR	20mm Dia	No.			
c	MR	25 mm Dia	No.			
d	MR	32 mm Dia	No.			
e	MR	40 mm Dia	No.			
f	MR	50 mm Dia	No.			
g	MR	65 mm Dia	No.			
h	MR	80 mm Dia	No.			
9		Supply, installing testing and commissioning of ISI Marked copper alloyed screwed pattern automatic air vent with control valve confirming to IS Class 1 including jointing etc complete and as directed.			MR - As per Manufacturer's Recommendation & Technical Specification	
a	MR	15 mm Dia (for booster system)	No.			
b	MR	20 mm dia.	No.			
c	MR	25 mm dia.	No.			
10		Supplying and erecting Cast Iron end line strainer of Y-type flanged end pattern, PN16 pressure rating, SS screen, end connection with Flanged / Screwed / Socket Weld / Butt Weld End etc with standard OAR (open area Ratio) for positive suction complete as per specification no. FF-VL/ELS(AT TERRACE LEVEL)				
c	CSR-13-7-5	80 mm dia.	No.	FF-VL/ELS	220	
d	CSR-13-7-6	100 mm dia.	No.	FF-VL/ELS	220	
e	CSR-13-7-7	150 mm dia.	No.	FF-VL/ELS	220	
11	SSR Item No-41.30/269	Providing and fixing 50mm diameter water Meter with non-return valve including strainer, sockets/ union nut and including water Meter box Making locking arrangements and lock. [Without chamber].	No.	Bd.V.7 Page One Number 554	554	
12	SSR Item No-41.32/269	Providing and fixing 80mm diameter water Meter with non-return valve including strainer, sockets/ union nut and including water Meter box Making locking arrangements and lock. [Without chamber].	No.	Bd.V.7 Page One Number 554 One Number	554	
13	SSR Item No-42.11/274	Providing and constructing Brick Masonry Inspection Chamber 90cm x 45cm x 90cm including 1:4:8 cement concrete foundation 1:2:4 cement concrete channels half round G.S.W.pipes, Brick Masonry, plastering from inside and C.I. lid cover of 75 kg with lid and frame fixed in cement concrete. (for water Meter)	Each	Bd.V.43 Page One Number 574	574	
14		Providing and fixing spring return Motorised Solenoid valve PN 10 suitable for 240 Volts , with suitable Motorised rotor 3 nos of float type sensors and control panel, to shut and close valve when water level is low / high in water tanks -Make slumber jet or approved			MR - As per Manufacturer's Recommendation & Technical Specification	
a	MR	50 mm Dia	Each			
b	MR	80 mm Dia	Each			
15		Supplying & fixing in position galvanised iron puddle flanges of approx. 60 cm length with flange on one end (Table E) and welded to Mild steel plate (8mm thick) in the centre etc. complete as directed by engineer-in-charge			MR - As per Manufacturer's Recommendation & Technical Specification	
a	MR	200 mm Dia	No.			
b	MR	150 mm Dia	No.			
c	MR	100 mm Dia	No.			
d	MR	80 mm Dia	No.			
e	MR	65 mm Dia	No.			
f	MR	50 mm Dia	No.			

Item No	SSR Item Ref. 2022-23 / MCGM SOB	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
16		Providing and fixing PVC Vents of following sizes in O.H.T./ U.G.R. over delivery pipes along with provision of inverted U bend & Mosquito proof Jali at the end etc. complete as directed by engineer-in-charge/Site Fabrication Item 50mm Dia	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
17	MR	Providing and fixing Circular type Ductile Iron Manhole Covers with frame of approved Make of 525 mm Dia and 75 kg human weight for OHT including all necessary supports, grouting of the frame in RCC, etc. complete as directed by engineer-in-charge.	Each			
B		BLDG EXTERNAL DRAINAGE, RAIN WATER DRAIN/SOIL/WASTE/VENT PIPE				
18		Providing, fixing and testing UPVC pressure pipes for soil waste and Rain pipes (IS:4985-81) 10 KG/CM2 including all fittings at 6-10KG/CM2 pressure rating such as bends, junctions, inspection doors, offsets, cowls, access pieces/plugs, brass floor cleanouts etc. clamps/ structural steel supports, haunching etc. as required / directed at site, jointing with SOLVENT joints including cutting holes in walls and Making good the same.		MR - As per Manufacturer's Recommendation & Technical Specification		
a	MR	75mm nominal bore.	Rmt.			
b	MR	100mm nominal bore.	Rmt.			
c	MR	160mm nominal bore.	Rmt.			
d	MR	200mm nominal bore.	Rmt.			
19	MR	Providing & fixing M.S. fabricated double angle (ISA) bracket of required length with all necessary fabrication & fixing the same and grouting in wall / R.C.C wall using anchor fasteners of required size and clamping of pipe with G.I. 'U' clamp with nut & bolts including applying primer & 2 coats of enamel paint of approved colour to brackets etc. complete as per directions of engineer-in-charge.	Kg	MR - As per Manufacturer's Recommendation & Technical Specification		
20		Supply, Providing and fixing PVC Cowl for the following pipes including Making all solvent joints with Material & labour etc. all complete as per direction of the engineer-in-charge.		MR - As per Manufacturer's Recommendation & Technical Specification		
a	MR	75 mm Dia	Each			
b	MR	110 mm Dia	Each			
c	MR	160 mm Dia	Each			
21		Providing and fixing SS Clean out plugs of following sizes for Maintenance and cleaning purpose etc. complete as per directions of engineer-in-charge.		MR - As per Manufacturer's Recommendation & Technical Specification		
a	MR	100 mm dia.	No.			
b	MR	150 mm dia.	No.			
22		Supply, laying, testing & commissioning of Heavy quality C. I. roof drains with lead bell Mouth, grating, lead flashing and setting in CC M - 150 with lead bell Mouth, grating, lead flashing and setting in CC M - 150 including applying three coats of anti corrosive Bitumastic paint etc. complete and as directed.				
a	MR	100 mm dia. lead flashing for 150mm dia. pipes	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
b	MR	150 mm dia. lead flashing for 150mm dia. pipes	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
23	MR	Providing, laying & fixing, jointing 160 mm SN 8 PVC underground pipes or of equivalent Make, Manufacture as per EN 13476 or equivalent as per I.S.15328 with fittings such as bends, tees, coupler, etc, jointing with rubber lubricant including necessary excavation, trench refilling with selective excavated Material etc complete.	Rmt.	MR - As per Manufacturer's Recommendation & Technical Specification		
24	MR	Providing, laying & fixing, jointing 200 mm SN 8 PVC underground pipes or of equivalent Make, Manufacture as per EN 13476 or equivalent as per I.S.15328 with fittings such as bends, tees, coupler, etc, jointing with rubber lubricant including necessary excavation, trench refilling with selective excavated Material etc complete.	Rmt.	MR - As per Manufacturer's Recommendation & Technical Specification		
25	MR	Providing, laying & fixing, jointing 250 mm SN 8 PVC underground pipes or of equivalent Make, Manufacture as per EN 13476 or equivalent as per I.S.15328 with fittings such as bends, tees, coupler, etc, jointing with rubber lubricant including necessary excavation, trench refilling with selective excavated Material etc. complete.	Rmt.	MR - As per Manufacturer's Recommendation & Technical Specification		
26	SSR Item No-42.02/274	Providing and fixing 15cmx10cm salt glazed stoneware gully trap in cement concrete 1:4:8 outside the building including cast-iron grating in the sink, connecting glazed stoneware pipe, brick masonry chamber with cast-iron lid and cast-iron grating for the gully trap.	No.	Bd.V.38, Page One Number 572	572	
27a	SSR Item 49/532	Provide in and fixing Top Manhole cover 45c45cm, (C.I.Man hole cover 50 kg.)	No.	As directed by Engineer Incharge	532	
27b	SSR Item 23/530	Providing and fixing Jali welded mesh 25x25, 11 Guage,	No.	As directed by Engineer Incharge	530	
27	SSR Item No-42.11/274	Providing and constructing Brick Masonry Inspection Chamber 60cm x 60cm x 90cm including 1:4:8 cement concrete foundation 1:2:4 cement concrete channels half round G.S.W.pipes, Brick Masonry, plastering from inside and C.I. lid cover of 75 kg with lid and frame fixed in cement concrete.	No.	Bd.V.43 Page One Number 574	574	
28	SSR Item No-42.10/274	Providing and constructing Brick Masonry Inspection Chamber 60cm x 45cm x 90cm including 1:4:8 cement concrete foundation 1:2:4 cement concrete channel half round G.S.W.pipes, Brick Masonry, plastering from inside and airtight C. I. cover of 75 Kilogram with lid and frame fixed in cement concrete.	No.	Bd.V.43, Page One Number 574	574	

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
29	MR	Supply, Installation, Testing & commissioning of Rain water filtration plant of 240 lpm with dual Media filter, Activated carbon filter, Multi grade sand filter & Chlorine dosing system with pump, piping system & Valves, etc. complete	Set	MR - As per Manufacturer's Recommendation & Technical Specification		
30		Supply, Installation, Testing & commissioning of Polymer concrete drain channel (for Fish Markit & in pump room)				
a	MR	Polymer concrete drain channel of size 235 mm x120 mm without grating with Galvanised steel edge rail	Rmt.	MR - As per Manufacturer's Recommendation & Technical Specification		
b	MR	Polymer concrete drain channel of size 300 mm x120 mm without grating with Galvanised steel edge rail	Rmt.	MR - As per Manufacturer's Recommendation & Technical Specification		
c	MR	0.5 mtr Ci grating suitable for 235mm wide channel of load class C-250 Black epoxy painted	Rmt.	MR - As per Manufacturer's Recommendation & Technical Specification		
d	MR	0.5 mtr Ci grating suitable for 300mm wide channel of load class C-250 Black epoxy painted	Rmt.	MR - As per Manufacturer's Recommendation & Technical Specification		
31	SSR Item No- 50.85/351	Providing and fixing Ductile iron Man Hole Covers/ Strom Water Grating and Grating with frame of Various sizes, weight and types and load bearing capacity as per EN-124, equivalent NECO with prior approval of concerned Superintending Engineer.	kg	As directed by Engineer Incharge	351	
Pumps						
		The scope of Contractor work shall include construction detailed design, supply installation, testing and commissioning and handing over the entire system along with Shop drawings, As-built drawings and O&M Manual.				
1		Sump pump :- Providing & fixing & commissioning of Vertical Submersible Sump pump having built in overload protector pump outer casing to be of cast iron, Motor housing, suction plate, bottom screen & all screws to be of stainless steel. Motor cover & pump housing to be of corrosion proof cast iron. pump will have cast iron impeller & double Mechanical seals in oil chambers. include one no. sheet steel clade wall Mounting control panel for control of 2 No. phase water pumps having suitable rated incoming isolating switch, branch MCBs, incoming voltmeter with selector switch & fuses DOL starter with hand reset overload relay, OFF/AUTO/MANUAL selector switch, ammeters, approved Make level control switch for automatic control of pumps, with 1 No. Low level and 1 No. float senser in Sump tank, and control wiring to stop the pump in case of full tank sensing from both the float sensors & electronic toggle relay for automatic alternating of pumps.				
		Note:- All Sump pumps. 1) All Sump pumps should be with set of Butterfly Valve, Non return Valves & Control Panel for Auto control operation. 2) Should have indication/ alarm panel to show High, Medium & low level with indication/alarm.				
		a) Pump for Sump in Fire pump room				
	MR	Each pump for pump room Sump, Each pump 250 lpm @ 25 M Head average discharge pressure, 2HP (1W+1S) (INCLUDING COMMON PUMPS PANEL WITH INTERLOCKING AND AUTOMATION)	Set	MR - As per Manufacturer's Recommendation & Technical Specification		
		b) Pump for Sump in Flushing pump room				
	MR	Each pump for pump room Sump, Each pump 200 lpm @ 25M Head average discharge pressure (1W+1S) (INCLUDING Common pumps PANEL WITH INTERLOCKING AND AUTOMATION)	Set	MR - As per Manufacturer's Recommendation & Technical Specification		
		c) Vertical Sewage cutter pump for Sewage Water transfer from 1st Basement to ETP				
	MR	Each pump for pump room Sump, Each pump 200 lpm @ 25M Head average discharge pressure (1W+1S) (INCLUDING Common pumps PANEL WITH INTERLOCKING AND AUTOMATION)	Set	MR - As per Manufacturer's Recommendation & Technical Specification		

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
2		WATER TRANSFER system FOR FLUSHING AND domestic Providing, fixing, testing & commissioning of Multi-stage centrifugal pump with VFD for Multi tank filling purpose having built in overload protector. pump outer casing to be of cast iron, Bronze impeller, SS shaft, Motor housing, suction plate, bottom screen & all screws to be of stainless steel. Motor cover & pump housing to be of corrosion proof cast iron. Each pump will have Bronze impeller & double Mechanical seals in oil chambers. Include one no. sheet steel clad wall Mounting control panel for control of water pumps having suitable rated incoming isolating switch, branch MCBs, incoming voltmeter with selector switch & fuses Star delta/DOL starters with hand reset overload relay, OFF/ AUTO/ MANUAL selector switch, ammeters, approved Make pressure switch for automatic control of pumps, with 1 No.Low level , 1 no. Medium level and 1 no. high level float senser in OH tank, Solenoid valve and control wiring to stop the pump in case of full tank sensing from both the float sensors & electronic toggle relay for automatic start/stop of pumps.				
		Note:- Water transfer pumps. 1) All pumps should be with set of Butterfly Valve, Non return Valves & Control Panel for Auto control operation.				
a	MR	Capacity Each pump 150 lpm & Head 110 M (2W+1S)(INCLUDING COMMON PUMPS PANEL WITH INTERLOCKING AND AUTOMATION) (Flushing water from Flushing TANK to OH tank)	Set	MR - As per Manufacturer's Recommendation & Technical Specification		
b	MR	Capacity Each pump 150 lpm & Head 110 M (2W+1S)(INCLUDING COMMON PUMPS PANEL WITH INTERLOCKING AND AUTOMATION)(domestic water from UG tank to OH tank)	Set	MR - As per Manufacturer's Recommendation & Technical Specification		
c	MR	Capacity Each pump 140 lpm & Head 65 M (1W+1S)(COMMON pumps PANEL WITH INTERLOCKING AND AUTOMATION)(K3 Building Flushing water from STP TREATED TANK to Flushing water tank at K2 building 3rd floor)	Set	MR - As per Manufacturer's Recommendation & Technical Specification		
d	MR	Capacity Each pump 50 lpm & Head 45 M (1W+1S)(COMMON pumps PANEL WITH INTERLOCKING AND AUTOMATION)(Rain Water Harvesting Water Treatment Plant)	Set	MR - As per Manufacturer's Recommendation & Technical Specification		
3	MR	Supply, installation, testing and commissioning of a set of hydro pneumatic Booster pump set for domestic water with single VFD suitable for automatic operation and delivering the specified discharge at the specified head. Each pump shall be of C.I base stainless steel SS 304 casing, SS 304 impeller and shaft complete with gunmetal isolation valve on the suction line with 150mm Dia pressure gauge, gunmetal non return valve and gunmetal isolation valve on delivery line, complete with s/s suction and delivery header piping of suitable size. The Motor shall be suitable for 415 ± 10% volts, 3 phase, 50 Hz A.C. power supply. The set shall include pump Mounted or Wall Mounted an automatic control panel with pressure sensor transmitter, electrical wiring, cabling from panel to pumps and FRP pressure tank with common base frame and complete connecting accessories. The set shall be completely equipped with variable frequency drive for automatic operation as per load requirements and will run alternately in sequence in cascade Mode based on water demand. Note: pumps should be Eff > 3 HP >60% or BEE 4 star rated & Motors should be Eff> 3 HP > 75% or BEE 4 star rated.	Set	MR - As per Manufacturer's Recommendation & Technical Specification		
		domestic Booster system One set of pumps- (1W+1S) Water Flow Rate 2 LPS Each Head : 25 M RPM : 2900				
4	CSR 13-8-14	Supplying and erecting 100 mm dia. pressure gauge , 0-300 PSI or 0-14 kg per cm square fitted with 12/15 mm dia. pad cock valve, erected with provided G.I. pipe, elbow etc. complete as per specification no. FF-FFA/PG	Each	FF-FFA/PG	223	
5	CSR 12-4-28	Supplying & erecting Float sensor switch for water level controller for all UG & OH tanks working on 250V & rated current 8A, with 2 M wire & High quality of wire & plastic body.	Each	As per Technical Specification	206	

Item No	SSK Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
6	MR	ELECTRICAL PLUMBING PANEL -1 (Basement) Design, Manufacture, supplying, fixing in position, testing and commissioning of the following front operated cubicle type, front access 2mm thick steel enclosed free standing, dust and vermin proof, switchboard with IP42 protection with hinged and lockable doors complete with interconnections, tinned copper crimping lugs, bonding to earth and painting, suitable for use at 415 volts, 3 phase 4 wire 50 Hz system and suitable for a fault level of 25 kA symmetrical at 415 volts with a suitable power capacitor to improve power factor.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
		All switchboards shall have provision for entry of cables from the top or bottom as required.				
		All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The busbars insulation shall be with heat shrinkable sleeves. SMC/DMC shrouds and busbar supports shall be used. Padlocking facility shall be provided on all outgoing feeders doors and switch handles shall be lockable in OFF position.				
		Interlocking arrangement shall be provided between working and standby pumps..				
		Incoming				
		1 No.63 Amps 4P incoming Microprocessor based 4P MCCB with following accessories:				
		1 set 0-500 volts digital electronic volt Meter with selector switch protected by 2 amps TP MCB's.				
		0-60 Amps digital electronic ammeter with selector switch.				
		Phase indicating light protected by 2 aMps SP MCB's.				
		BUSBAR				
		100 Amps TPN aluminium bus bars (36 KA for 1 sec.) with coloured heat shrinkable insulated sleeve.				
		OUTGOING UNITS				
		Water Transfer pump- Domestic (1W+1S)				
		2 Nos 40 Amps TP MCCB of 25 kA breaking capacity with 5.6 kW DOL starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-40 amps range with selector switch, and an indicating lamp with 2A SP MCB				
		Vertical Sump Pump (1W+1S)				
		2 Nos 20 Amps TP MCCB of 25 kA breaking capacity with 1.5 kW DOL starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-30 amps range with selector switch, and an indicating lamp with 2A SP MCB				
		Cutter Sump Pump (1W+1S)				
		2 Nos 20 Amps TP MCCB of 25 kA breaking capacity with 1.5 kW DOL starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-30 amps range with selector switch, and an indicating lamp with 2A SP MCB				
		Spare				
		1 Nos 40 Amps TP MCCB of 25 kA breaking capacity				
		1 Nos 20 Amps TP MCCB of 25 kA breaking capacity				
7	MR	ELECTRICAL PLUMBING PANEL -2 (Third floor) Design, Manufacture, supplying, fixing in position, testing and commissioning of the following front operated cubicle type, front access 2mm thick steel enclosed free standing, dust and vermin proof, switchboard with IP42 protection with hinged and lockable doors complete with interconnections, tinned copper crimping lugs, bonding to earth and painting, suitable for use at 415 volts, 3 phase 4 wire 50 Hz system and suitable for a fault level of 25 kA symmetrical at 415 volts with a suitable power capacitor to improve power factor.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
		All switchboards shall have provision for entry of cables from the top or bottom as reqd.				
		All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The busbars insulation shall be with heat shrinkable sleeves. SMC/DMC shrouds and busbar supports shall be used. Padlocking facility shall be provided on all outgoing feeders doors and switch handles shall be lockable in OFF position.				
		Interlocking arrangement shall be provided between working and standby pumps..				
		Incoming				
		1 No.63 Amps 4P incoming Microprocessor based 4P MCCB with following accessories:				
		1 set 0-500 volts digital electronic volt Meter with selector switch protected by 2 amps TP MCB's.				
		0-60 Amps digital electronic ammeter with selector switch.				
		Phase indicating light protected by 2 aMps SP MCB's.				
		BUSBAR				
		100 Amps TPN aluminium bus bars (36 KA for 1 sec.) with coloured heat shrinkable insulated sleeve.				
		OUTGOING UNITS				
		Water Transfer pump- Flushing (1W+1S)				
		2 Nos 40 Amps TP MCCB of 25 kA breaking capacity with 5.6 kW DOL starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-40 amps range with selector switch, and an indicating lamp with 2A SP MCB				
		Rain Harvesting Pump (1W+1S)				
		2 Nos 20 Amps TP MCCB of 25 kA breaking capacity with 0.75 kW DOL starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-30 amps range with selector switch, and an indicating lamp with 2A SP MCB				
		Domestic hydro Pneumatic Pump (1W+1S)				
		2 Nos 20 Amps TP MCCB of 25 kA breaking capacity with 0.75 kW DOL starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-30 amps range with selector switch, and an indicating lamp with 2A SP MCB				
		Spare				
		1 Nos 40 Amps TP MCCB of 25 kA breaking capacity				
		1 Nos 20 Amps TP MCCB of 25 kA breaking capacity				

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
8	CSR 7-2-16	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 6 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU (Water transfer pumps)	Rmt	CB-LT/CU	131	
9	CSR 7-2-15	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 4 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU (Sump & terrace pumps)	Rmt	CB-LT/CU	131	
10	CSR 7-2-14	Supplying, erecting & terminating FRLS XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 2.5 sq.mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU (Rain H. Pump)	Rmt	CB-LT/CU	131	
11	R3-ME-2-13-c	Readymade 2500mm standard length, prefabricated, perforated cable tray from MS sheet and then hot dip galvanised, of following sizes and associated accessories such as coupler plates, tees, elbow etc. Galvanisation thickness shall be minimum 86 Micron. G.I. Cable tray with all other accessories 150 x 25mm (W x H) - (16 SWG - 1.6mm) without cover	Rmt	MCGM SOR 2023 R3-ME-2-13-c	57	
LIASONING WORK						
1	APPROX	Liasoning work for Plumbing taking all necessary approvals from relevant authorities for completion of Project.	Lot	-		
Fire Fighting Work						
Fire Fighting Pump Room & Accessories						
1		Supplying & installing completely testing & commissioning Electric Motor driven fire hydrant pump set, suitable for automatic operation consisting of the following :				
a)		Horizontal end suction Multistage /Multi outlet fire pumps having cast iron body, stainless steel impeller, stainless steel shaft complete with necessary CI strainers and sluice valves on suction side and CI non-return & of sluice valve on the delivery side including pressure gauges, pressure switches, bypass arrangement (with G.M stop valve and G.I.piping) for periodical testing of the working of the pumping set . delivering of following capacities as below Mentioned.				
b)		Squirrel cage induction Motor totally enclosed fan cooled type suitable for 400/ 440 volts (+5%) 3 phase, 50 HZ, A.C. supply of suitable capacity for the above Mentioned pumps with synchronous speed of Max. 2900 RPM conforming to IS:325 and duty coupled with above pumps with flexible coupling including earthing as per relevant Indian Standard and specifications.				
c)		Common bed plate for Mounting the pump and Motor, fabricated of suitable M.S. channel as per Manufacturer's recommendations.				
d)		Heavy duty anti vibration Mounting pads.				
1.1	MR	Multistage stage Multi outlet pump capacity 2850 lpm at a total head of 90/130 M from all causes, installed at U/G tank for Fire Main hydrant pump. Electric Motor driven HYDRANT pump, 110 KW	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
1.2	MR	Multistage stage Multi outlet pump capacity 2850 lpm at a total head of 90/130 M from all causes, installed at U/G tank for Fire Main Sprinkler pump. Electric Motor driven pump (SPRINKLER pump), 110 KW	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
1.3	MR	Multistage stage Multi outlet pump capacity 2850 lpm at a total head of 90/130 M from all causes, installed at U/G tank for Fire Main Sprinkler pump. Electric Motor driven pump (STANDBY pump)110 KW	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
2	MR	Multistage stage Multi outlet pump capacity 180 lpm at a total head of 90/130 M from all causes, installed at U/G tank Fire(Hydrant & Sprinkler) Jockey pump. Electric Motor driven pump,	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
3	MR	Single outlet Pump capacity 90 lps at a total head of 35 M from all causes, installed at Roof, Booster Pump. Electrical Motor driven pumps.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		

Item No	SSK Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
4	MR	ELECTRICAL FIRE PANEL -1 Design, Manufacture, supplying, fixing in position, testing and commissioning of the following front operated cubicle type, front access 2mm thick steel enclosed free standing, dust and vermin proof, switchboard with IP42 protection with hinged and lockable doors complete with interconnections, tinned copper crimping lugs, bonding to earth and painting, suitable for use at 415 volts, 3 phase 4 wire 50 Hz system and suitable for a fault level of 25 kA symmetrical at 415 volts with a suitable power capacitor to improve power factor. All switchboards shall have provision for entry of cables from the top or bottom as required. All live accessible parts shall be shrouded and all equipment shall be finger touch proof. The busbars insulation shall be with heat shrinkable sleeves. SMC/DMC shrouds and busbar supports shall be used. Padlocking facility shall be provided on all outgoing feeders doors and switch handles shall be lockable in OFF position. Interlocking arrangement shall be provided such that when Main pump starts Jockey pump should stop and vice versa. Incoming AUTO TRANSFER SWITCH - 630A FP ATS 1 No.630 Amps 4P incoming Microprocessor based 4P MCCB with following accessories: 1 set 0-500 volts digital electronic volt Meter with selector switch protected by 2 amps TP MCB's. 0-700 AMps digital electronic ammeter with selector switch and 400/5 aMps 15 VA, CL 1 CTs . Phase indicating light protected by 2 aMps SP MCB's. BUSBAR 700 Amps TPN aluminium bus bars (25 KA for 1 sec.) with coloured heat shrinkable insulated sleeve. OUTGOING UNITS Main Hydrant & Main Sprinkler pump (2W+1S) 3 Nos 300 Amps TP MCCB of 25 kA breaking capacity with 110 kW SOFT starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-400 amps range with selector switch, and an indicating lamp with 2A SP MCB Hydrant Jockey pump 1 Nos 63 Amps TP MCCB of 25 kA breaking capacity with 15 kW SOFT starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-63 aMps range with selector switch, and an indicating lamp with 2A SP MCB 1 No 0-500 Volts, Digital voltmeter with built in selector switch and protection fuses. 1 No 0-63 Amps, Digital ammeter with built in selector switch and Matching CT's. 1 No KWH Meter with suitable CT's. 1 Set of RYB phase indicating lamps (LED). 1 Set of on/off/trip indicating lamps (LED). Sprinkler Jockey pump 1 Nos 63 Amps TP MCCB of 25 kA breaking capacity with 15 kW SOFT starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-63 Amps range with selector switch, and an indicating lamp with 2A SP MCB 1 No 0-500 Volts, Digital voltmeter with built in selector switch and protection fuses. 1 No 0-63 Amps, Digital ammeter with built in selector switch and Matching CT's. 1 No KWH Meter with suitable CT's. 1 Set of RYB phase indicating lamps (LED). 1 Set of on/off/trip indicating lamps (LED). Terrace Booster pump 1 Nos 40 Amps TP MCCB of 25 kA breaking capacity with 7.5 kW SOFT starter (type 2 co ordination chart shall be referred for starters). These compartment shall contain CT operated digital ammeter of 0-40 Amps range with selector switch, and an indicating lamp with 2A SP MCB 1 No 0-500 Volts, Digital voltmeter with built in selector switch and protection fuses. 1 No 0-40 Amps, Digital ammeter with built in selector switch and Matching CT's. 1 No KWH Meter with suitable CT's. 1 Set of RYB phase indicating lamps (LED). 1 Set of on/off/trip indicating lamps (LED). Interlocking arrangement shall be provided such that when Main pump starts Jockey pump should stop and vice versa.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
5	CSR 7-1-23 (Add 14% as per point-9)	Supplying, erecting & terminating XL-HFFR insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3.5 core 240 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL (HYDRANT & SPRINKLER pump)	Rmt	CB-LT/AL	127	
6	CSR 7-2-33 (Add 2% as per point-6)	Supplying, erecting & terminating FRLS XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 10 sq.mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU (JOCKEY pump)	Rmt	CB-LT/CU	132	
7	CSR 7-2-8 (Add 2% as per point-6)	Supplying, erecting & terminating FRLS XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 2.5 sq.mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU (Sensor wires)	Rmt	CB-LT/CU	130	
8	R3-ME-2-13-k	G.I. Cable tray with all other accessories 450 x 75mm (W x H) - (16 SWG - 1.6mm) without cover	Rmt	MCGM SOR 2023 R3-ME-2-13-k	57	
9	R3-ME-2-13-c	G.I. Cable tray with all other accessories 150 x 25mm (W x H) - (16 SWG - 1.6mm) without cover	Rmt	MCGM SOR 2023 R3-ME-2-13-c	57	
10	R3-ME-15-21	Supplying and installing Air Vessel of 300 mm Ø 1.5m in height M.S. tank installed at Terrace as per specification	Each	MCGM SOR 2023 R3-ME-15-21	203	
11	MR-AROMECH	Supplying and installing Air Vessel of 450 mm Ø 1.5M in height M.S. tank installed at Basement inside pump house as per specification No.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		

Item No	SSK Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
12	R3-ME-15-23	Supplying and installing pressure switch with 12/15 mm Ø isolation valve, G.I. nipple, elbow etc. in an approved manner as per specification	Each	MCGM SOR 2023 R3-ME-15-23	204	
13	CSR-13-8-14	Supplying and installing pressure gauge of 100 mm Ø, 0-300 PSI or 0- 14 kg per cm square fitted with 12/15 mm Ø. pad cock valve, and G.I. pipe, elbow etc	Each	FF-FFA/PG	223	
14	R3-ME-15-22	Supplying and erecting 20/25mm Ø G.M. Air Release cock, with necessary G.I. coupling to be fitted on top of Air vessel or on wet riser as per specification	Each	MCGM SOR 2023 R3-ME-15-22	204	
15	R3-ME-15-10-a	Supplying & installing gun metal Gate Valve of size 20mm Dia	Each	MCGM SOR 2023 R3-ME-15-10-a	201	
16	R3-ME-15-10-c	Supplying & installing gun metal Gate Valve of size 50mm Dia	Each	MCGM SOR 2023 R3-ME-10-c	201	
17	R3-ME-15-6-a	Supplying & Installing cast iron Double Flange Butterfly valve 80 mm	Each	MCGM SOR 2023 R3-ME-15-6-a	200	
18	R3-ME-15-6-c	Supplying & Installing cast iron Double Flange Butterfly valve 150 mm	Each	MCGM SOR 2023 R3-ME-15-6-c	200	
19	R3-ME-15-6-d	Supplying & Installing cast iron Double Flange Butterfly valve 200 mm	Each	MCGM SOR 2023 R3-ME-15-6-d	200	
20	R3-ME-15-5-d	Supplying and installing end line strainer for +ve suction 200mm Dia	Each	MCGM SOR 2023 R3-ME-15-5-d	200	
21	R3-ME-15-7-a	Supplying and installing double flange NRV of size 80 mm Dia	Each	MCGM SOR 2023 R3-ME-15-7-a	200	
22	R3-ME-15-7-c	Supplying and installing double flange NRV of size 150 mm Dia	Each	MCGM SOR 2023 R3-ME-15-7-c	200	
23	R3-ME-15-7-d	Supplying and installing double flange NRV of size 200 mm Dia	Each	MCGM SOR 2023 R3-ME-15-7-d	200	
24	R3-ME-15-15-h	Supplying and installing 25 mm Dia G.I. Heavy grade 'C' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping	Running Meter	MCGM SOR 2023 R3-ME-15-15-h	202	
25	R3-ME-15-15-e	Supplying and installing 50 mm Dia G.I. Heavy grade 'C' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping	Running Meter	MCGM SOR 2023 R3-ME-15-15-e	202	
26	R3-ME-15-15-c	Supplying and installing 80 mm Dia G.I. Heavy grade 'C' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping	Running Meter	MCGM SOR 2023 R3-ME-15-15-c	202	
27	R3-ME-15-15-a	Supplying and installing 150 mm Dia G.I. Heavy grade 'C' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping	Running Meter	MCGM SOR 2023 R3-ME-15-15-a	202	
28	R3-ME-15-15-i	Supplying and installing 200 mm Dia G.I. Heavy grade 'C' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping	Running Meter	MCGM SOR 2023 R3-ME-15-15-i	202	
30		Providing and fixing reinforced Neoprene flexible pipe connectors with all accessories on all pumps delivery.				
a)	MR	80 mm	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
b)	MR	150 mm	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
Fire Hydrant system						
31	R3-ME-15-15-c	Supplying and installing 80 mm Dia G.I. Heavy grade 'C' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping	Running Meter	MCGM SOR 2023 R3-ME-15-15-c	202	
32	R3-ME-15-15-b	Supplying and installing 100 mm Dia G.I. Heavy grade 'C' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping	Running Meter	MCGM SOR 2023 R3-ME-15-15-b	202	
33	R3-ME-15-15-a	Supplying and installing 150 mm Dia G.I. Heavy grade 'C' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping	Running Meter	MCGM SOR 2023 R3-ME-15-15-a	202	
34	R3-ME-15-15-i	Supplying and installing 200 mm Dia G.I. Heavy grade 'C' class pipes (I.S. 1239 part I) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping	Running Meter	MCGM SOR 2023 R3-ME-15-15-i	202	
35	R3-ME-15-25-a	Providing coating of Bitumen Paint & 4mm thick Wrapping as per IS 10221 for underground 80 mm Ring Main of Fire Fighting System.	Running Meter	MCGM SOR 2023 R3-ME-15-25-a	204	
36	R3-ME-15-25-b	Providing coating of Bitumen Paint & 4mm thick Wrapping as per IS 10221 for underground 150 mm Ring Main of Fire Fighting System.	Running Meter	MCGM SOR 2023 R3-ME-15-25-b	204	
37	R3-ME-15-6-b	Supplying & Installing cast iron double flange butterfly valve of size 100 mm dia.	Each	MCGM SOR 2023 R3-ME-15-6-b	200	
38	R3-ME-15-6-c	Supplying & erecting cast iron double flange butterfly valve of size 150 mm dia.	Each	MCGM SOR 2023 R3-ME-15-6-c	200	
39	CSR-13-7-25	Supplying and installing double flange NRV of size 150 mm Dia	Each	F-VL/NRV	221	
40	CS-13-7-7	Supplying and installing 150 mm Dia end line strainer for +ve suction as per specification No.	Each	FF-VL/ELS	220	
41	CSR-13-8-13	Supplying and erecting 20/25mm Ø G.M. air release cock, with necessary G.I. coupling to be fitted on top of Air vessel or on wet riser as per specification	Each	FF-FFA/ARV	223	
42	R3-ME-15-8-b	Supplying and installing gun metal Double outlet hydrant valve fitted with necessary accessories (INTERNAL HYDRANT IN MAIN BUILDING)	Each	MCGM SOR 2023 R3-ME-15-8-b	200	
43	R3-ME-15-8-c	Supplying and erecting stainless steel single outlet hydrant valve fitted with necessary accessories complete (CAR PARKING TOWER & EXTERNAL HYDRANT)	Each	MCGM SOR 2023 R3-ME-15-8-c	200	
44	CSR-13-8-2	Supplying and installing wall mounting swinging hose reel drum fitted with 19 mm dia. 30m long high pressure polypropylene (Polyhose) along with necessary accessories complete as per specification no. FF-FFA/HV	Each	FF-FFA/HV	222	

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
45	R3-ME-15-10-a	Supplying & installing gun metal gate valve of size 20mm Dia	Each	MCGM SOR 2023 R3-ME-15-10-a	201	
46	R3-ME-15-11-a	Providing and fixing in position 2 lengths of 15 M long flexible canvas rubber lined hose reels 63 Dia with adapter, branch pipe and nozzle and storing them in metal cabinets with lockable glass shutters and fixing the metal cabinet at ground level in a location where it can be easily spotted including painting etc	Each	MCGM SOR 2023 R3-ME-15-11-a	201	
47	CSR-13-8-7	Supplying G.M. branch pipe of 63 mm Ø fitted with 20 mm Ø detachable hexagonal nozzle	Each	FF-FFA/NZ	222	
48	MR- AROMEPE	Supplying and erecting M.S./CRCA cabinet for housing Floor Hydrant valve, hose pipe, hose reel and branch pipe (size 2100 mm x 1200mm x 750 mm.) Made from 16 SWG sheet and angle iron 25 mm. x 25 mm. x 4 mm. having front doors with viewing glass (8"x6") and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour. (INTERNAL)	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
49	CSR-13-8-18	Supplying and erecting M.S./CRCA cabinet for housing single hydrant valve of size (400 x 400 x 400)mm or hose pipe box of size (600 x 600 x 200)mm made from min. 1.5 mm thick CRCA sheet with angle iron work of min. of size (25 x 25 x 4) mm having front doors with viewing glass of size (200x150) mm and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour(Code 538 of IS 5). (EXTERNAL+TERRACE)	Each	As per Technical Specification	223	
50	CSR-13-8-14	Supplying and installing pressure gauge of 100 mm Ø., 0-300 PSI or 0-14 kg per cm square fitted with 12/15 mm Ø. pad cock valve, and G.I. pipe, elbow etc.	Each	FF-FFA/PG	223	
51	CSR-13-8-16	Supplying and erecting one no. Brass orifice plate having 6 mm. thickness, 140 mm outer Dia of 140 mm at every single outlet hydrant valve	Each	FF-FFA/OP	223	
52	R3-ME-15-19	Supplying and installing fire brigade Header of 150 mm Ø, for supplying water in fire tank as per specification	Each	MCGM SOR 2023 R3-ME-15-19	203	
53	R3-ME-15-20	Supplying and installing fire brigade Header (Siamese Connection) of 150 mm Ø for supplying water to wet riser system & external hydrant as per specification	Each	MCGM SOR 2023 R3-ME-15-20	203	
FF Sprinkler System						
54	CSR-13-6-2	Supplying and erecting G.I. pipe 'C' class ERW 25 mm Dia with necessary fittings complete as per specification no. FF-PP	Running Meter	FF-PP	219	
55		Providing and fixing in position G.I. Heavy grade 'C' class pipes (I.S.1239part1)with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping,				
55a	R3-ME-15-15-g	Providing and fixing in position G.I. Heavy grade 'C' class pipes 32 mm	Running Meter	MCGM SOR 2023 R3-ME-15-15-g	202	
55b	R3-ME-15-15-f	Providing and fixing in position G.I. Heavy grade 'C' class pipes 40 mm	Running Meter	MCGM SOR 2023 R3-ME-15-15-f	202	
56	CSR-13-6-3	Providing and fixing in position G.I. Heavy grade 'C' class pipes 50 mm	Running Meter	FF-PP	219	
57	CSR-13-6-4	Providing and fixing in position G.I. Heavy grade 'C' class pipes 65 mm	Running Meter	FF-PP	219	
58	CSR-13-6-5	Providing and fixing in position G.I. Heavy grade 'C' class pipes 80 mm	Running Meter	FF-PP	219	
59	CSR-13-6-6	Providing and fixing in position G.I. Heavy grade 'C' class pipes 100 mm	Running Meter	FF-PP	219	
60	CSR-13-6-7	Providing and fixing in position G.I. Heavy grade 'C' class pipes 150 mm	Running Meter	FF-PP	219	
61	CSR 13-7-17	Supplying and erecting 50 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	Each	FF-VL/BFV	221	
62	CSR 13-7-18	Supplying and erecting 65 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	Each	FF-VL/BFV	221	
63	CSR 13-7-19	Supplying & Installing cast iron double flange butterfly valve of size 80 mm dia. as per specification	Each	FF-VL/BFV	221	
64	CSR-13-7-20	Supplying & Installing cast iron double flange butterfly valve of size 100 mm dia. as per specification	Each	FF-VL/BFV	221	
65	CSR-13-7-21	Supplying & erecting cast iron double flange butterfly valve of size 150 mm dia. complete as per specification	Each	FF-VL/BFV	221	
66	MR	Supplying & Installing cast iron PRV valve of size 150 mm dia. as per specification	Each	MR - As per Manufacturer's Recommendation & Technical Specification		

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
67	MR	Providing & fixing 25 mm Dia gunmetal inspecting & testing assembly with ball valve(3 No.), 25mm sight glass, by pass valve & connected to drain line.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
68	R3-ME-15-26-a	Supplying and erecting 15 mm (½") dia. NBCM Body chrome finished quartzoid bulb sprinkler having 68° C fixed temperature rating with deflector disc of conventional construction as per specification No. FF-SPR	Each	MCGM SOR 2023 R3-ME-15-26-a	205	
69	R3-ME-15-26-e	Supplying and erecting 15 mm (½") dia. NBCM Body chrome finished quartzoid bulb upright sprinkler having 68° C fixed temperature rating with deflector disc of conventional construction and quality conforming to international standards and listed by LPC (formally FOC U.K.) U.L.F.M. and as per IS 9972	Each	MCGM SOR 2023 R3-ME-15-26-e	205	
70	MR	15 mm dia. quartzoid bulb type G. M side wall sprinkler head set to operate at 68 Deg.C, UL/FM Approved and as per IS 9972	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
71	MR	Providing and fixing flexible braided dropper pipes up to 1500 mm length from ceiling with necessary reducer coupling (dropper length specified to deflector of sprinkler) etc. complete.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
72	MR	Providing and fixing flexible braided dropper pipes up to 1000 mm length from ceiling with necessary reducer coupling (dropper length specified to deflector of sprinkler) etc. complete.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
73	CSR-13-8-14	Supplying and installing pressure gauge of 100 mm Ø., 0-300 PSI or 0-14 kg per cm square fitted with 12/15 mm Ø. pad cock valve, and G.I. pipe, elbow etc. as per requirement in an approved Manner as per specification No. FF-FFA/PG etc complete.	Each	FF-FFA/PG	223	
74	CSR-13-12-3	Supplying & erecting vane type water flow detector suitable for detecting flow of water in wet sprinkler pipe of main line or branch lines of 100 mm Dia having following features 1) Visual Switch Activation 2) Rugged Switch Assembly 3) Heavy Duty Aluminium pipe Saddles 4) Durable Metal Encloser 5) Steel U Bolts For Secure Mounting 6) Two SPDT (Single Pole Double Track) Synchronised Switches 7) Serviceable Without Draining Pipes	Each	As per Technical Specification	228	
75	CSR-13-12-2	Supplying & erecting vane type water flow detector suitable for detecting flow of water in wet sprinkler pipe of main line or branch lines of 75/80 mm Dia having following features 1) Visual Switch Activation 2) Rugged Switch Assembly 3) Heavy Duty Aluminium pipe Saddles 4) Durable Metal Encloser 5) Steel U Bolts For Secure Mounting 6) Two SPDT (Single Pole Double Track) Synchronised Switches 7) Serviceable Without Draining Pipes	Each	As per Technical Specification	228	
76	MR	Supplying & erecting vane type water flow detector suitable for detecting flow of water in wet sprinkler pipe of Main line or branch lines of 65 mm Dia having following features 1) Visual Switch Activation 2) Rugged Switch Assembly 3) Heavy Duty Aluminium pipe Saddles 4) Durable Metal Encloser 5) Steel U Bolts For Secure Mounting 6) Two SPDT (Single Pole Double Track) Synchronised Switches 7) Serviceable Without Draining Pipes	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
77	MR	Supplying & erecting vane type water flow detector suitable for detecting flow of water in wet sprinkler pipe of Main line or branch lines of 50 mm Dia having following features 1) Visual Switch Activation 2) Rugged Switch Assembly 3) Heavy Duty Aluminium pipe Saddles 4) Durable Metal Encloser 5) Steel U Bolts For Secure Mounting 6) Two SPDT (Single Pole Double Track) Synchronised Switches 7) Serviceable Without Draining Pipes	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
78	MR	Providing, Installation, testing and commissioning of Control Valve inclusive of :	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
a		alarm Valve with Water Motor Gong				
b		Glycerine filled Pressure gauge and other Miscellaneous				
c		Valves and fittings as required.				
79	CSR-13-8-13	Supplying and erecting 20/25mm Dia gun metal air release cock , with necessary G.I. coupling to be fitted on top of air vessel or on wet riser complete as per specification no. FF-FFA/ARV	Each	FF-FFA/ARV	223	
80	CSR-13-13-1	Supplying and erecting Fire resistant Mortar(20 kg) with fire resistance class S90 as per National Electrical Code (NEC) SP30-2011 suitable to seal the openings with all kinds of cables, pipes and cable support system in steel and aluminium and plastic profiles (Except hollow core conductors). The residual openings shall be closed with filler, as per specification No. FF-FRM	Job	FF-FRM	228	

Item No	SSR Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
FF Drencher System						
81	CSR-13-6-2	Supplying and installing G.I. pipe above ground of 'C' class ERW of size 25 mm Dia with necessary fittings as per specification no. FF-PP	Running Meter	FF-PP	219	
		Providing and fixing in position G.I. Heavy grade 'C' class pipes (I.S.1239part1) with necessary clamping to wall beams and ceilings with hangers and clamps anchor fasteners wherever required to firmly support piping.				
82	R3-ME-15-15-g	Providing and fixing in position G.I. Heavy grade 'C' class pipes 32 mm	Running Meter	MCGM SOR 2023 R3-ME-15-15-g	202	
83	R3-ME-15-15-f	Providing and fixing in position G.I. Heavy grade 'C' class pipes 40 mm	Running Meter	MCGM SOR 2023 R3-ME-15-15-f	202	
84	CSR-13-6-3	Supplying and installing G.I. pipe above ground of 'C' class ERW of size 50 mm Dia with necessary fittings as per specification No. FF-PP	Running Meter	FF-PP	219	
85	CSR-13-6-4	Supplying and installing G.I. pipe above ground of 'C' class ERW of size 65 mm Dia with necessary fittings as per specification No. FF-PP	Running Meter	FF-PP	219	
86	CSR-13-6-5	Supplying and installing G.I. pipe above ground of 'C' class ERW of size 80 mm Dia with necessary fittings as per specification No. FF-PP	Running Meter	FF-PP	219	
87	CSR-13-6-7	Supplying and erecting G.I. pipe above ground of 'C' class ERW of size 150 mm Dia with necessary fittings complete as per specification no. FF-PP	Running Meter	FF-PP	219	
88		Deluge valves of PN16 Rating with tamper Switch, accessories, Tap off Socket Arrangement as Required, Potential free contact with 2 No. NO / NC, complete as per the technical specifications and drawings. Rates shall be inclusive of galvanised bolts, nuts and washers and gaskets.				
a)	MR	80 mm	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
89	R3-ME-15-32-C	Supply, installation, testing & commissioning of 2Cx1.5 sq.mm armoured RED colour copper FRLS cable with necessary saddles, screws, junction boxes, steeves, elbows couplings etc. for Fire alarm System (Deluge Valves to Fire Alarm Panel)	Running Meter	MCGM SOR 2023 R3-ME-15-32-c	207	
90	MR	Water Curtain Nozzle with 15mm Dia end connection complete as per Technical Specifications and Drawings. Nozzle shall be of brass construction, chrome finish with orifice not less than 6mm. Nozzles shall be UL Listed / FM approved.	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
Portable Extinguisher						
91	R3-ME-15-30-b	Supplying and erecting ABC powder type fire extinguisher as per IS : 13849 / 15683 of 9 kg capacity with necessary clamp for erection on Wall.	Each	MCGM SOR 2023 R3-ME-15-30-b	205	
92	CSR-13-15-1	Supplying & erecting Carbon Dioxide (CO2) fire extinguisher of 4.5 kg. Capacity Cartridge type conf. To IS 2878 / 15683 Complete erected with necessary clamp made front 50x6 mm. M. S. flat with nut & bolts grouted in wall complete.	Each	As per Technical Specification	228	
93	R3-ME-15-31-a	Providing Round bottom FIRE Bucket of 9 Litres capacity as per IS : 2546 made out of 24 gauge G.I. sheet with extra handle at bottom duly painted white inside and red outside with FIRE Mark, on provided stand/ wall hook.	Each	MCGM SOR 2023 R3-ME-15-31-a	205	
94	R3-ME-15-31-d	Supplying standard first aid box with necessary antiseptic cream, medicine for use on wounds due burn, crepe bandage, gauge bandage, medicated ready to use bandage (Band-aid) adhesive tape for medicinal use, scissors, antiseptic solution (Savlon or similar) etc. (All above contents shall be of standard makes)	Each	MCGM SOR 2023 R3-ME-15-31-d	206	
95	R3-ME-15-30-f	Supplying and erecting D.C.P. type Fire Extinguisher 9 kg capacity cartridge type with Gun Metal cap 150 gram CO2 gas cartridge, powder and brackets conforming to IS 2171-1985 and complete erected with necessary clamps made from 50x6 mm M.S. flat with nuts & bolts grouted in wall complete.(1 @ each LMR room)	Each	MCGM SOR 2023 R3-ME-15-30-f	205	
96		Supply & erection of ISI Marked portable fire extinguishers , conforming to IS:15683, wall Mounted type, wall brackets complete in all respect as per standard item with all accessories, delivery hose & nozzle wherever required, including fixing on walls as per the directions of Engineer-in-charge.				
97	MR	Mechanical Foam Type 50 Lit. capacity-Trolley Mounted	Each	MR - As per Manufacturer's Recommendation & Technical Specification		
98	MR	CO2 Type 22 l capacity -Trolley Mounte	Each	MR - As per Manufacturer's Recommendation & Technical Specification		

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SINAGES						
99	R3-ME-15-29-b	SITC of Auto glow signage for Staircase direction	No.	MCGM SOR 2023 R3-ME-15-29-b	205	
100	MR	"USE THE STAIRS", Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 400 (L) X 150 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts:	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
101	MR	"FLOOR NO" Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 200 (L) X 200 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
102	R3-ME-15-29-a	SITC of Auto glow signage for Emergency Fire Exit	No.	MCGM SOR 2023 R3-ME-15-29-a	205	
103	MR	"REFUGE AREA / RESTRICTED AREA" Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 150 (L) X 400 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
104	R3-ME-15-29-c	SITC of Auto glow signage for Do not use lift in case of Fire etc.	No.	MCGM SOR 2023 R3-ME-15-29-c	205	
105	MR	MCP LOACTION. Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 250 (L) X 150 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
106	MR	"FIRE HOSE" Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 250 (L) X 150 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
107	MR	"FIRST AID BOX ". Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 400 (L) X 150 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
108	MR	"FIRE ACTION PLAN". Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 600(L) X 450 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
109	MR	"REFUGE ACTION PLAN". Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 600(L) X 450 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
110	MR	"FIRE INSTRUCTION FOR FIREMAN". Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 600(L) X 450 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
111	MR	"FIRE EXTINGUISHER CO2/ABC/FIRE HOSE CABINET". Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 600(L) X 450 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
112	MR	"EMERGENCY ESCAPE ROUTE PLAN". Self-glowing/fluorescent, FIRE Exit luminaires Legend, Size 600(L) X 450 (H) innovative design, Wall Mount or Ceiling Mount or Recess Mount additional bracket options, to be fully compliant with requirements of designing and installation to Meet the fire and safety code of practice, with 10 Meter viewing distance in following formats as per Layouts.	No.	MR - As per Manufacturer's Recommendation & Technical Specification		
LIASONING WORK						
113	APPROX.	Liasioning Work For fire fighting works of Mumbai Municipal Corporation including getting all necessary permissions & approvals from them all complete.	Lot	-		
FIRE AUDIT WORK						
114	R3-ME-15-28-a	Providing/Conducting Complete Fire audit including submission of building wise audit/compliance Report Work For fire fighting works of Mumbai Municipal Corporation including getting all necessary permissions & approvals from them all complete up to 20 Floor Floor	Lot	MCGM SOR 2023 R3-ME-15-28-a	205	

Item No	SSK Item Ref. 2022-23 / MCGM SOR	Item Description	Unit	Reference to the Standard Specification		Remarks
				Specification No.	Page No.	
ETP						
1	MR	Supply, Installation, Testing & Commissioning of 16 KLD ETP comprising of below list of items:			MR - As per Manufacturer's Recommendation & Technical Specification	
a		Bar Screen, vendor fabricated	NO			
b		Oil Skimmer & DAF	Each			
c		Effluent Transfer Pumps, CRI/Eq.	NO			
d		MS Anoxic Tank with Anoxic Mixer	Each			
e		MS Aeration Tank	NO			
f		Blower & diffusion system	NO			
g		MS Non submerged air piping	L/S			
h		PVC Flexible Braided submerged air piping	L/S			
i		MS MBR Tank with submerged MBR module for 16 m3/day	Each			
j		MBR Suction Pumps, Johnson	NO			
k		MBR Cleaning System	NO			
l		Chlorine Dosing	NO			
m		MBR Automation with actuator valves	L/S			
n		Activated Carbon filtration unit	NO			
o		MS Sludge Holding Tank	NO			
p		Sludge Recirculation Pump	NO			
q		Sludge Dewater Machine	NO			
r		UPVC Piping as per plant	L/S			
s		MS Treated Water Tank	NO			
t		Flow meter for outlet	NO			
u		Central control panel	NO			
OWC WORK						
1	MR	The waste generated is from the company's Mess, kitchen and other organic waste produced activities. The waste shall be treated in an automatic organic waste compost Machine.			MR - As per Manufacturer's Recommendation & Technical Specification	
		Keeping in view of the site requirements, it has been decided to have OWC for 400 kg/day				
		The present offer is for design, supply, erection, installation, and commissioning of Kelvin Organic Waste Compost Machine (K-OWC) of capacity 400 kg/day with all interconnecting works, Mechanical, electrical, instrumentation works etc. as per the scope of supply excluding the civil works.				
		Introducing India's first Most advanced, compact, and semi-Automated Organic Waste Converter, operational features of the Machines are as follows:				
		Automatic				
		Composts all types of food including chicken and fish bones, eggshells etc.				
		Low noise				
		Part time labour/ process handling				
		75-80% volume reduction				
		Very low OPEX				
2		Low floor space/compact				
		No pathogens, safe for human handling				
		No foul smell, no rats/insects/flies				
a		Very good aesthetics				
b		Continuous composting				
c		Stainless steel tank, life of 20+ yrs.				
d		Overload function-Machine comes to a halt in case of overload.				
3		Indicators are provided for power mode, heater & power saving Mode.				
		Internal Mixing blades automatically stop when compost removal door is opened.				
			Job		MR - As per Manufacturer's Recommendation & Technical Specification	
	O&M	O & M Team's Details: 1. Engineer 2. Electrician- @ per shift for 2 Shift 3. Helper- @ per shift for 2 shift			MR - As per Manufacturer's Recommendation & Technical Specification	
		Six Month Salary for O&M Team	Job			
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