संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र., भोपाल
Directorate, Urban Administration & Development, M.P., Bhopal

Palika Bhawan, Near 6 No. Bus Stop
Shivaji Nagar, Bhopal – 462016
Tel. 0755-2558796
Email:- enc@mpurban.gov.in
Website: www.mpurban.gov.in

क्रमांक/यां.प्र./07/2024/8214 भोपाल, दिनांक– 05-07-24

–आदेश–

विभागीय पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) को, विभागीय आदेश क्रमांक/यां.प्र./07/2021/8085 दिनांक 02.08.2021 से लागू किया गया है। निम्न आयटमों को पुनरीक्षित किया गया है, जो आज दिनांक 05.07.2024 से लागू किये जाते है।

भाग–एक
(Water Supply, Sewerage and Tube Well Works)

1. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works के Chapter-4 में आइटम क्र. 4.1 एवं 4.3 को निम्नानुसार प्रतिस्थापित किया जाता है :–

Ductile Iron Pressure Pipes and Specials with Tyton Joints

Item No.	Item Description	Unit	Rates (In Rs.)
4.1	Providing, laying, jointing & testing of socket & spigot centrifugally cast (Spun) Ductile Iron pressure pipes with inside cement mortar lining with epoxy based seal coat (class K-7) with suitable Rubber Gasket (Push on) joints as per IS:5382/85 including testing of joint.		
4.1.1	80 mm diameter	Meter	1139.00
4.1.2	100 mm diameter	Meter	1209.00
4.1.3	150 mm diameter	Meter	1686.00
4.1.4	200 mm diameter	Meter	2236.00
4.1.5	250 mm diameter	Meter	2906.00
4.1.6	300 mm diameter	Meter	3571.00
4.1.7	350 mm diameter	Meter	4465.00
4.1.8	400 mm diameter	Meter	5328.00
4.1.9	450 mm diameter	Meter	6346.00
4.1.10	500 mm diameter	Meter	7392.00
4.1.11	600 mm diameter	Meter	9765.00
4.1.12	700 mm diameter	Meter	13246.00
4.1.13	750 mm diameter	Meter	15296.00
4.1.14	800 mm diameter	Meter	17405.00
4.1.15	900 mm diameter	Meter	21103.00
4.1.16	1000 mm diameter	Meter	25261.00
4.3	Providing, laying, jointing & testing of socket & spigot centrifugally cast (Spun) Ductile Iron pressure pipes with inside cement mortar lining with epoxy based seal coat (class K-9) with suitable Rubber Gasket (Push on) joints as per IS:5382/85 including testing of joint		
4.3.1	80 mm diameter	Meter	1264.00
4.3.2	100 mm diameter	Meter	1455.00
4.3.3	150 mm diameter	Meter	1919.00
4.3.4	200 mm diameter	Meter	2607.00
4.3.5	250 mm diameter	Meter	3511.00
4.3.6	300 mm diameter	Meter	4349.00
4.3.7	350 mm diameter	Meter	5359.00
4.3.8	400 mm diameter	Meter	6423.00
4.3.9	450 mm diameter	Meter	7817.00
4.3.10	500 mm diameter	Meter	9095.00
4.3.11	600 mm diameter	Meter	11896.00
4.3.12	700 mm diameter	Meter	15337.00
4.3.13	750 mm diameter	Meter	17254.00

Item No.	Item Description	Unit	Rates (In Rs.)
4.3.14	800 mm diameter	Meter	18777.00
4.3.15	900 mm diameter	Meter	22950.00
4.3.16	1000 mm diameter	Meter	27750.00

2. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works के Chapter-8 में आइटम क्र. 8.1 तथा आइटम क्र. 8.2 को निम्नानुसार प्रतिस्थापित किया जाता है। आइटम क्र. 8.3 एवं आइटम क्र. 8.4.1 को विलोपित किया जाता है एवं आइटम क्र. 8.16, 8.17, 8.18 एवं 8.19 निम्नानुसार जोड़ा जाता हैं :–

M.S. PIPES, SPECIALS, FITTINGS INCLUDING FABRICATION & LAYING

Item No.	Item Description	Unit	Rates (In Rs)
	M.S.PIPES		
8.1	Manufacturing, Providing, supplying spirally welded / ERW/ SAW/ Fabricated M.S. Pipe of suitable length and Diameter, welding on automatic welding machine and forming V-edge on both ends & laying and Jointing of M.S. pipes as per IS specifications as per IS-3589, IS-5504 and relevant IS code, duly tested for usage in Drinking water inclusive of all materials, inspection charges, transit insurance, loading/unloading FOR site unloading & stacking etc. complete as per direction of Engineer-in-Charge. (excluding protective coating)	KG	85.00
8.2	Manufacturing, Providing, supplying of M.S. Specials as per IS specifications of approved thickness by welding, lowering, laying and jointing, aligning, fixing in position at all level/depths in trenches complete as per relevant IS code, duly tested for usage in Drinking water inclusive of all materials, inspection charges, transit insurance, loading/unloading, FOR Site & stacking etc. complete as per for direction of Engineer-in-charge. (excluding protective coating)	KG	85.00
8.16	Providing & applying 406 micron food grade epoxy coating on inside face of pipe as per IS 3589 & other relevant IS specification including testing.	Sqm.	373.00
8.17	Providing & applying external Coating of Dual Layer Fusion bond epoxy (DRBE) on outer face of steel pipe as per the IS 3589 & IS 15659 Part-2, 2006 and other relevant IS codes, DFBE Coating to be Compiling with standards of CSA Z245.20-18.	Sqm.	697.00
8.18	Providing & applying external anti-corrosion 3 LPE Coating on outer face of Pipe as per IS 3589 & other relevant IS codes by using 3 layers side Extruded Polyethylene coating (confirming to DIN - 30670).	Sqm.	1220.00
8.19	Providing & applying External Polyurethane Coating on outer face of Pipe as per relevant IS codes with the coating on steel pipes using 100% solids (Solvent less) two component, fast curing Rigid, Direct to metal (DTM), polyurethane Coating classified under ASTM D-16, Type-V and latest editions of ANSI/ AWWA C222 standard to be followed.	Sqm.	756.00

3. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works क Chapter-9 के आइटम 9.24, 9.25, एव 9.26 को निम्नानुसार प्रतिस्थापित किया जाता है :–

Volume – I (Water Supply, Sewerage and Tube Well Works)					
Item No.	Description of Item	Sub Item No.	Sub Item Description	Unit	Rate (in Rs) (Amendment)
1	2	3	4	5	6
		Class-I			
9.24	Providing, laying and jointing of ISI marked Asbestos Cement Pipes conforming to IS 6908:1991 for Sewerage & Drainage Class-I with suitable A.C. coupling & ISI marked rubber ring, duly tested inspection charges, transportation charges, transit insurance, loading/ unloading and stacking at site/ store etc, complete of following sizes: -	9.24.1	150 mm	Meter	535
		9.24.2	200 mm	Meter	851
		9.24.3	250 mm	Meter	1117
		9.24.4	300 mm	Meter	1428
		9.24.5	350 mm	Meter	1769
		9.24.6	400 mm	Meter	2272
		9.24.7	450 mm	Meter	2671
		9.24.8	500 mm	Meter	3341
		9.24.9	600 mm	Meter	4630
		9.24.10	700 mm	Meter	7460
		9.24.11	800 mm	Meter	9453
		9.24.12	900 mm	Meter	12028
		9.24.13	1000 mm	Meter	14637
		Class-II			
9.25	Providing, laying and jointing of ISI marked Asbestos Cement Pipes conforming to IS 6908:1991 for Sewerage & Drainage Class-II with suitable A.C. coupling & ISI marked rubber ring, duly tested inspection charges, transportation charges, transit insurance, loading/ unloading and stacking at site/ store etc, complete of following sizes: -	9.25.1	150 mm	Meter	659
		9.25.2	200 mm	Meter	1098
		9.25.3	250 mm	Meter	1413
		9.25.4	300 mm	Meter	1945
		9.25.5	350 mm	Meter	2390
		9.25.6	400 mm	Meter	3201
		9.25.7	450 mm	Meter	3739
		9.25.8	500 mm	Meter	4636
		9.25.9	600 mm	Meter	6581
		9.25.10	700 mm	Meter	8308
		9.25.11	800 mm	Meter	11393
		9.25.12	900 mm	Meter	14525
		9.25.13	1000 mm	Meter	17669
		Class - III			

9.26	Providing, laying and jointing of ISI marked Asbestos Cement Pipes conforming to IS 6908:1991 for Sewerage & Drainage Class- III with suitable A.C. coupling & ISI marked rubber ring, duly tested inspection charges, transportation charges, transit insurance, loading/ unloading and stacking at site/ store etc, complete of following sizes: -	9.26.1	150 mm	Meter	808
		9.26.2	200 mm	Meter	1382
		9.26.3	250 mm	Meter	1790
		9.26.4	300 mm	Meter	2485
		9.26.5	350 mm	Meter	3081
		9.26.6	400 mm	Meter	4177
		9.26.7	450 mm	Meter	4936
		9.26.8	500 mm	Meter	6053
		9.26.9	600 mm	Meter	8526
		9.26.10	700 mm	Meter	11490
		9.26.11	800 mm	Meter	15180
		9.26.12	900 mm	Meter	19055
		9.26.13	1000 mm	Meter	23418

4. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works के Chapter-19 में आइटम क्र. 19.8 एवं 19.9 को विलोपित किया जाता है।

5. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works के Chapter-20 में आइटम क्र. 20.37 से आइटम क्र. 20.44 को विलोपित करते हुये, निम्नानुसार आइटम जोड़े जाते हैं :–

Horizontal Directional Drilling (HDD) Trenchless Technology

Item No.	Item description	Unit	Rate (In Rs.)
20.37	Horizontal directional drilling (by trenchless technology) for HDPE/ DWC PE /PVC-O pipe below natural ground level upto all depth including carrying out survey work at the job site for determining underground cable trenches like telephone, cable, water & sanitary lines and resistivity test for finding the soil strata using necessary equipments for completion of works, mobilizing of machineries and specialized crew at the job site complete in all respect including cost of entry & exit pits upto depth of 3 meter. Excluding Supply, laying & jointing of all types of pipes.		
20.37.1	In all type of soil , Moorum		
20.37.1.1	For upto 100 mm Dia Pipe	Meter	4937.00
20.37.1.2	For more than 100 mm Dia upto 150 mm Dia Pipe	Meter	5808.00
20.37.1.3	For more than 150 mm Dia upto 200 mm Dia Pipe	Meter	6534.00
20.37.1.4	For more than 200 mm Dia upto 250 mm Dia Pipe	Meter	7550.00
20.37.1.5	For more than 250 mm Dia upto 300 mm Dia Pipe	Meter	9002.00
20.37.1.6	For more than 300 mm Dia upto 350 mm Dia Pipe	Meter	10352.00
20.37.1.7	For more than 350 mm Dia upto 400 mm Dia Pipe	Meter	11905.00
20.37.1.8	For more than 400 mm Dia upto 450 mm Dia Pipe	Meter	13691.00
20.37.1.9	For more than 450 mm Dia upto 500 mm Dia Pipe	Meter	15744.00
20.37.1.10	For more than 500 mm Dia upto 550 mm Dia Pipe	Meter	18106.00
20.37.1.11	For more than 550 mm Dia upto 600 mm Dia Pipe	Meter	20822.00
20.37.1.12	For more than 600 mm Dia upto 650 mm Dia Pipe	Meter	23945.00

Item No.	Item description	Unit	Rate (In Rs.)
20.37.1.13	For more than 650 mm Dia upto 700 mm Dia Pipe	Meter	27537.00
20.37.1.14	For more than 700 mm Dia upto 750 mm Dia Pipe	Meter	31667.00
20.37.2	In rock		
20.37.2.1	For upto 100 mm Dia Pipe	Meter	16842.00
20.37.2.2	For more than 100 mm Dia upto 150 mm Dia Pipe	Meter	18004.00
20.37.2.3	For more than 150 mm Dia upto 200 mm Dia Pipe	Meter	19165.00
20.37.2.4	For more than 200 mm Dia upto 250 mm Dia Pipe	Meter	20327.00
20.37.2.5	For more than 250 mm Dia upto 300 mm Dia Pipe	Meter	21488.00
20.37.2.6	For more than 300 mm Dia upto 350 mm Dia Pipe	Meter	24711.00
20.37.2.7	For more than 350 mm Dia upto 400 mm Dia Pipe	Meter	28418.00
20.37.2.8	For more than 400 mm Dia upto 450 mm Dia Pipe	Meter	32681.00
20.37.2.9	For more than 450 mm Dia upto 500 mm Dia Pipe	Meter	37583.00
20.37.2.10	For more than 500 mm Dia upto 550 mm Dia Pipe	Meter	43220.00
20.37.2.11	For more than 550 mm Dia upto 600 mm Dia Pipe	Meter	49703.00
20.37.2.12	For more than 600 mm Dia upto 650 mm Dia Pipe	Meter	57158.00
20.37.2.13	For more than 650 mm Dia upto 700 mm Dia Pipe	Meter	65732.00
20.37.2.14	For more than 700 mm Dia upto 750 mm Dia Pipe	Meter	75592.00
20.38	Extra for excavation of driven pit/ exit pit / intermediate pit beyond 3 meter depth, required for pushing/ pulling of MS/HDPE/RCC etc. pipe in trenchless technology, with proper protection at three sides with shoring sheets/ wooden planks and ISMB's, maintaining during pushing/ puling of pipe, back filling, necessary de-watering including all machinery, tools, and tackles required as per specification and the direction of the Engineer-In-Charge		
	In all type of soil , Moorum		
20.38.1	In all type of soil , Moorum	Per Pit per meter depth	30700.00
20.38.2	In Rocks	Per Pit per meter depth	61500.00
20.39	Horizontal Directional Drilling (Trenchless Technology) below natural ground level including making of entry and exit pit upto 3 meter depth of MS casing pipe/ RCC Pipe and insertion of carrier pipe and anti corrosive treatment, epoxy painting, PU coating and insulation sheet / spacer including excavation, shoring/ strutting, excluding cost of Supply, laying and jointing of MS casing/ RCC Pipe and carrier Pipe (For Railway and Highway crossings, Nallah crossings)		
20.39.1	In all type of soil, Moorum		
20.39.1.1	300 mm to 600 mm	Meter	32292.00
20.39.1.2	More than 600 mm and upto 900 mm	Meter	35201.00
20.39.1.3	More than 900 mm and upto 1200 mm	Meter	38419.00

Item No.	Item description	Unit	Rate (In Rs.)
20.39.1.4	More than 1200 mm and upto 1500 mm	Meter	42023.00
20.39.1.5	More than 1500 mm and upto 1800 mm	Meter	45627.00
20.39.2	In rock		
20.39.2.1	300 mm to 600 mm	Meter	55523.00
20.39.2.2	More than 600 mm and upto 900 mm	Meter	94050.00
20.39.2.3	More than 900 mm and upto 1200 mm	Meter	98325.00
20.39.2.4	More than 1200 mm and upto 1500 mm	Meter	169290.00
20.39.2.5	More than 1500 mm and upto 1800 mm	Meter	240255.00
	Manual Pipe Jacking		
20.40	Installation of Pipe by Manual Pipe Jacking method including making of entry and exit pits upto 3 mtr depth, all related civil works like excavation, shoring/strutting, etc., manual shielded excavation, lowering of pipe segments in the jacking pit, laying and jointing of pipeline through jacking process from the jacking pit after project completion as per the instructions of the Engineer-in-Charge all complete except the cost of the pipe. (upto 60 meter installation length)		
20.40.1	Upto 900 mm dia Manual Pipe Jacking is not permitted for workmen safety reasons		
20.40.2	From 900 mm and upto 1000 mm		
20.40.2.1	In all type of Soil	Meter	23000.00
20.40.2.2	In rock	Meter	78000.00
20.40.3	Above 1000 mm and upto 1200 mm		
20.40.3.1	In all type of Soil	Meter	28000.00
20.40.3.2	In rock	Meter	90000.00
20.40.4	Above 1200 mm and upto 1500 mm dia		
20.40.4.1	In all type of Soil	Meter	36000.00
20.40.4.2	In rock	Meter	115000.00
20.40.5	Above 1500 mm and upto 1800 mm mm dia		
20.40.5.1	In all type of Soil	Meter	40000.00
20.40.5.2	In rock	Meter	128000.00
20.40.6	Above 1800 mm and upto 2200 mm mm dia		
20.40.6.1	In all type of Soil	Meter	47000.00
20.40.6.2	In rock	Meter	155000.00
20.40.7	Above 2200 mm and upto 2600 mm mm dia		
20.40.7.1	In all type of Soil	Meter	58000.00

Item No.	Item description	Unit	Rate (In Rs.)
20.40.7.2	In rock	Meter	180000.00
	Micro tunneling		
	Installation of Pipe by Micro Tunneling method including concrete structural shaft of sheet piles/RCC retaining walls/well sinking/secant piling as par respective site requirements. (upto 100 meter of installation length and 5m depth) all inclusive as per IndSTT: 102-2018; Code of Practice for Micro Tunneling for slurry based micro tunneling suitable for steel/RCC jacking pipes suiting Indian condition .		
20.41.1	Upto 300 mm outer dia		
20.41.1.1	All type of soil	Meter	34476.00
20.41.1.2	Rocks	Meter	75501.00
20.41.2	Above 300 mm and upto 450 mm dia		
20.41.2.1	All type of soil	Meter	37909.00
20.41.2.2	Rocks	Meter	95370.00
20.41.3	Above 450 mm and upto 600 mm dia		
20.41.3.1	All type of soil	Meter	49060.00
20.41.3.2	Rocks	Meter	140250.00
20.41.4	Above 600 mm and upto 900 mm dia		
20.41.4.1	All type of soil	Meter	79475.00
20.41.4.2	Rocks	Meter	158950.00
20.41.5	Above 900 mm and upto 1200 mm OD		
20.41.5.1	All type of soil	Meter	102000.00
20.41.5.2	Rocks	Meter	187000.00
20.41.6	Above 1200 mm and upto 1500 mm OD		
20.41.6.1	All type of soil	Meter	136000.00
20.41.6.2	Rocks	Meter	187000.00
20.41.7	Above 1500 mm and upto 1800 mm OD		
20.41.7.1	All type of soil	Meter	146200.00
20.41.7.2	Rocks	Meter	272000.00
20.41.8	Above 1800 mm and upto 2100 mm OD		
20.41.8.1	All type of soil	Meter	161500.00
20.41.8.2	Rocks	Meter	297500.00
20.41.9	Above 2100 mm and upto 2400 mm OD		

Item No.	Item description	Unit	Rate (In Rs.)
20.41.9.1	All type of soil	Meter	187000.00
20.41.9.2	Rocks	Meter	331500.00

6. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works के Chapter-22 में आइटम 22.10 को निम्नानुसार जोड़ा जाता है:–

Bio film based Sewage Treatment Technology

Item. No.	Item Description	Unit	Rate in Cr.
22.10	Designing, providing, construction of STP consisting of screen chamber, Grit Separator, Equalization tank, Concrete platform, associated piping work with required valves, gates, drains, pathways, complete as turnkey job with all involved civil works. Design, Supply, Install, Test and Commission a BIOFILM BASED, Zero Sludge Type or equivalent packaged sewerage treatment plant; complete with electromechanical works, training and visits as per the specification and all accessories including spare parts.		
	CONSTRUCTION OF SCREENS SUPPORT / CANALS		
	CONSTRUCTION OF GRIT CHAMBER		
	CONSTRUCTION OF EQUILIZATION TANK		
	CONSTRUCTION OF PLATFORM FOR THE SYSTEM		
Material Specifications Electromechanical System of Bio film based Technology			
1	**<u>Attached Growth Bacteria Process</u>** Designing, providing, constructing, A hydraulic testing, commissioning of STP based on Bio film technology consisting of Inlet Chamber, Screen Chamber, Sludge Sump and piping etc, complete as turnkey job with all involved civil, electrical and mechanical works inclusive of following items, units as per detailed specification for civil, electrical and mechanical (components with all duties and taxes, etc. complete to achieve BOD < 10 ppm, COD <50 ppm, TSS < 10 ppm, Total N< 10 ppm, Fecal Coliform< 100 MPN/100ml, Ammonical N< 5ppm, to get recyclable quality of water for industrial / agricultural purposes. Influent Characteristics 1. BOD - 400 mg/lit 2. COD - 800 mg/lit 3. TSS - 350 mg/lit 4. pH - 6 – 9 5. FOG - 20 mg/lit Treated Effluent Quality 1. BOD - <10 mg/lit 2. COD - <30 mg/lit 3. TSS - <10 mg/lit 4. pH - 6 – 9 5. FOG - <10 mg/lit If raw sewage characteristics found more critical than the above mentioned Influent Characteristics, same shall be considered during designing the Sewage Treatment Plant (STP).		

Item. No.	Item Description	Unit	Rate in Cr.
2	**MECHANICAL BAR SCREEN (Supply, Installation, Testing and Commissioning)** Operation: manual cleaning Bar size: 25 x 10 mm Bar spacing: 6 mm Degree of inclination: 50^{0} Approximately length x width of screen: 1500 x 900 Supporting angle: 65 mm equal angle Scrapping arm: standard with handle Material of construction: SS 304 i) S / I / T /C - Accessories and assembly components ii) Installation and Labor		
3	**GRIT REMOVAL UNIT (Supply, Installation, Testing and Commissioning)** Dual compartment basin Separated by flow control baffles Incorporates adjustable air flow rates fully automated device		
4	**EQUILIZATION TANK AGITATOR/MIXER (Supply, Installation, Testing and Commissioning)** Gearbox - NA Impeller Type - Marine Propeller Moc - SS 304 Motor Power – 0.18 To 1.5 Hp Output Speed - 900 to 1400 RPM		
5	**Sewage Treatment Plant - (Supply, Installation, Testing and Commissioning) -** Sewage Treatment Plant of various modules as per design and capacity of the plant and made up of following components. Item a) - Treatment Pipes Item b) - ELBOW PAIR SET I Item c) - ELBOW PAIR SET II Item d) - DISTRUBUTION LINE SET - SIDE 1 Item e) - DISTRUBUTION LINE SET - SIDE 2 Item f) - COLLECTION LINE SET - SIDE 1 Item g) - COLLECTION LINE SET - SIDE 2 Item h) - BUBBLE LINE SET - SIDE 1 Item i) - BUBBLE LINE SET - SIDE 2 Item j) - FRAME SET-1 Item k) - FRAME SET-2 Item l) - FEET SET Item m) - INCOMING FLOW LINES Item m) - OUTGOING FLOW LINES Item n) CONNECTION SET Material- Unplasticized polyvinyl chloride Mechanical Specifications- Size Pipes- Outer Diameter 110 mm pipe set Size Fittings - Inner Diameter 110 mm for fittings Size Pipes- Outer Diameter 90 mm pipe set Size Fittings - Inner Diameter 90 mm for fittings Size Pipes- Outer Diameter 50 mm pipe set Size Fittings - Inner Diameter 50 mm for fittings		

Item. No.	Item Description	Unit	Rate in Cr.
	Working Pressure - 6kg/cm^2 to 16 kg/cm^2 Thickness of the pipes and fittings- 4.3mm to 7.1mm Toxicity - Non Toxic and lead free (Suitable for drinking water) Other specs - Corrosion resistance, rustproof material Standard- IS-4985, DIN-8062 and ISO-1452-2		
6	**AUTOMATED VALVES AND BALL VALVES (Supply, Installation, Testing and Commissioning)** Electrical Actuator Details Characteristic: On – Off Type Travel : 90 Degree Indicator : Continuous Position Indicator Phase : Single Phase Power Supply : 220V AC, 50 Hz Body Material : Aluminum Alloy Ambient Temperature: 20°C ~ 80°C Motor Insulation : Class F Protection Class : IP – 67 Weather Proof Manual Adjustment : Wrench Setting Limit Switch : 1NO + 1NC output of 220V AC Position Power Failure: Stay Put Manual Override : Provided Valve Specifications: Specifications of UPVC Ball Valve: 1. Body - PVC 2. Seat Seal - EPDM 3. Ball - PVC 4. Ball - EPDM 5. Handle - PVC 6. Bolt - Zinc-Plated steel 7. Cap - ABS i) S / I / T /C - Accessories and assembly components) Installation and Labour		

Item. No.	Item Description	Unit	Rate in Cr.
7	**WATER LEVEL SENSORS (Supply, Installation, Testing and Commissioning)** Level Sensor - Point Level Contact - DC PNP/NPN - 2 Switching Output, M12 connector type M12 angled connector cable with 4.8m length Mechanical specifications- Weight [g]- 208.5 Materials - stainless steel (1.4404 / 316L); PEEK; PEI; FKM Materials (wetted parts) - PEEK; surface characteristics: Ra < 0,8 / Rz 4 Process connection - threaded connection G 1/2 sealing cone Sensor Output details - Total number of outputs - 2 Output signal - switching signal; IO-Link Electrical design - PNP/NPN Number of digital outputs - 2 Output function - normally open / normally closed; Max. voltage drop switching output DC [V] - 2.5 Permanent current rating of switching output DC [mA] - 100 Short-circuit protection -yes Type of short-circuit protection - pulsed Overload protection - yes i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		
8	**FLOAT SWITCHES (Supply, Installation, Testing and Commissioning)** Sensor Type - TA Enclosure material - ABS/ PP Cable material - Butyl rubber, high-flexible, 3 x 0.75² Cable length - 2m, 5 m, 10 m, 20m and 30 m Installation positions - any Buoyancy - 0.5 Temperature range- -5 °C to +60 °C Change-over contact switching capacity: 4 A/250 V AC or 2 A/125 V DC (resistive load) switching current: 24 V to 250 V AC or 12 V to 125 V DC Response delay - none Protection IP - 68 Weight - 345 g Ballast weight - 300 g (the float switch standard supply always includes a ballast weight) Switching angle - 65°		
9	**MANUAL VALVES AND FITTINGS (Supply, Installation, Testing and Commissioning)** i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		

Item. No.	Item Description	Unit	Rate in Cr.
10	**COATING FOR TREATMENT PIPES AND FITTINGS AND BIOLOGICAL CULCTURE (Supply, Installation, Testing and Commissioning)** THE COATING THAT PROVIDES A CONSTANT PROTECTIVE LINING THAT HELPS BACTERIA TO SURVIVE i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		
11	**AERATION SYSTEMS (Supply, Installation, Testing and Commissioning)** Material U-PVC Mechanical Specification Diameter 50mm Weight 200 gms Motive Suction - 12906 LPH i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		
12	**BIOFILM MEDIA (Supply, Installation, Testing and Commissioning)** MATERIAL: Polyvinyl Chloride SHAPE: Twisted and elongated i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		
13	**CEMETING MATERIAL (Supply, Installation, Testing and Commissioning)** Heavy syrupy liquid Specific Gravity 0.940 ± 0.040 Vapor Density 2.49 Solid Contents 15 to 16 % Viscosity 19 - 21 Sec. by Ford cup B4 i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		
14	**CIRCULATION PUMPS (Supply, Installation, Testing and Commissioning)** Pre-filter Centrifugal Pump Capacity: 20 to 80m3/h Head: 15m Motor Body Cast Iron Impeller Cast Iron Suc./Del. Casing Cast Iron Shaft Carbon Steel Sealing Mechanical Seal Electrical Specification: Single/Three Phase 220/430 Volt i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		

Item. No.	Item Description	Unit	Rate in Cr.
15	**DISCHARGE PUMP** Pre-filter Centrifugal Pump Capacity: 80m3/h Head: 15m Motor Body Cast Iron Impeller Cast Iron Suc./Del. Casing Cast Iron Shaft Carbon Steel Sealing Mechanical Seal Electrical Specification: Single/Three Phase 220/430 Volt HP:7-10 or 7.5-11KW i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		
16	**SEWAGE PUMP (Supply, Installation, Testing and Commissioning)** Capacity: 20 to 134m3/h Head: 15m Impeller: Cast Iron Motor Body: Cast Iron Pump Shaft: Carbon Steel Single/Three Phase - 220/430 Volt IMPELLER SEMI-OPEN M. SEAL DOUBLE MECHANICAL SEAL BEARING BALL TYPE BEARING MATERIAL IMPELLER GREY IRON VOLUTE GREY IRON UPPER COVER GREY IRON VOLUTE BASE GREY IRON M.SEAL MOTOR SIDE CARBON V/S CERAMIC(0.75-2.2KW) PUMP SIDE CARBON V/S CERAMIC(0.75KW) SILICON CARBIDE V/S SILICON CARBIDE (1.5 TO 2.2KW) INSULATION F CLASS FREQUENCY 50HZ THERMAL PROTECTOR AUTOMATIC RESET MOTOR PROTECTOR MATERIAL STATOR BODY S.S. AISI 304 SHAFT S.S. AISI 410 CABLE THERMOPLASTIC RUBBER IP 68 i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		
17	**HMI / PLC BASED CONTROL PANEL, INSTRUMENTATION AND ALLIED ELECTRICAL MATERIAL - SWITCHGEARS, PROTECTION DEVICES COMPUTERS, and ETHERNET CABLES** CABINET SECTION PANEL Skid/Wall Mounted Panel Wall Mounting Bracket Aluminum. Strip of 1x100x10mm (R,Y,B) Panel Door Key PLC HARDWARE OCS with 3.5" Display with 24DI/16DO/4HS In/2HS Out/2AI Smartstix IO with 16DI/16DO GSM Modem OTHER BOUGHTOUT ITEMS Emergency Push Button 1 NC Contact 8 CH ,1C/O Relay Board 10 A SMPS i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		

Item. No.	Item Description	Unit	Rate in Cr.
18	**DISC FILTERS (Supply, Installation, Testing and Commissioning)** Screen Material: Polypropylene Disc Available Mesh: minimum 120,150 mesh Filtration Surface Area: minimum 3380 cm^2 Range of Flow Rate: 80-100 m^3/hr Maximum Operating Pressure: Minimum 8 Kg/cm^2 Diameter of Inlet and Outlet: minimum 90mm i) S / I / T /C - Accessories and assembly components ii) Installation and Labour		
19	**ACTIVATED CARBON FILTER (Supply, Installation, Testing and Commissioning)** No. of Stream One Mode of operation Manually Feed Flow rate 112 M^3/hr. Operating Pressure 3.0-3.5 Bar Backwash Time 30-40 Mins. Media Qty 6000 Kg Carbon Qty 6000 Kg Vessel Size 3100 mm Dia. X 2600 mm Ilt. Vessel MOC MSE P Type Vertical Down Flow FRONTAL PIPELINE MS 6" Type of Valve Butterfly Type Vessel Shell Thickness 10 mm Vessel Dish end Thickness 12 mm Diameter of Inlet and Outlet: 90mm) S / I / T /C - Accessories and assembly components) Installation and Labour		
20	Ancillary Work and Material as and when required to complete the installation of the STP plant		**Cost in Cr.**
22.10.1	0.5 MLD		1.35
22.10.2	1 MLD		2.35
22.10.3	1.5 MLD		3.45
22.10.4	2 MLD		4.65
22.10.5	2.5 MLD		5.85
22.10.6	3 MLD		6.95
22.10.8	3.5 MLD		8.05
22.10.9	4 MLD		9.35
22.10.10	4.5 MLD		10.15
22.10.11	5 MLD		11.35

Note:

1. This item includes Design, Supply, Install, Test and Commission a BIO FILM BASED, Zero Sludge Type or equivalent waste water treatment plant; complete with electro mechanical works, training and visits as per the specification and all accessories including spare parts. Including 12 Months of Defect Liability Period (DLP).
2. No additional payment shall be paid in case of change in the design for the given capacity.

7. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Work के Chapter-22 में निम्नानुसार आइटम 22.11 जोड़ा जाता है :–

Resurrection, Restoration, Rejuvenation & Maintenance of Native Ecology of Water Body

Item. No.	Item Description	Cost in Rs. (Per annum)
22.11	Installation and Operation of fresh Water tank of sufficient capacity arrangement of Fresh Water for amalgamation of Herbal / Botanical Extract Medicine / Concentrate, coupled with inlet-outlet pipelines at the Lake site like to perform the treatment dosing for the purpose of Resurrection, Restoration and Rejuvenation process.	
	Procurement of Equipment's' for removing Municipal Solid Waste, floating solid waste like plastics, thermocols etc. from the Water body including Boats, Safety Jackets, Floating Waste Catchers Dump Carts, Trapping Nets & other safety equipments for Physical cleaning of non-biodegradable floating solids through mechanical / physical through excavation / cleaning of Floating Municipal Waste, Water weeds etc. from the Waterbody.	
	Procuring, Supply and dosing or spray of nature base solution in wastewater/ sewage flowing in drains for Resurrection, Restoration, and Rejuvenation of Native Ecology of the Water body through "In-Situ" Ecological Rejuvenation Technology for restoring the native limnology without any physical / mechanical / chemical or lab grown organism intervention to the aqua-ecology. The complete treatment focuses on resurrecting the native micro biota of the Waterbody. During the phase, the foul smell & the mosquito population dwelling in the waterbody gets eradicated. Second phase of Restoration shifts towards reestablishing the soil, capillary link to aquifer through complete consumption of the sludge deposits through the eco-dredging process. The 3rd phase called Rejuvenation, wherein the digestion capacity of the Water body is calibrated with the fresh incoming load.	
	Spot testing of Water to be done on each day of dosing. Ground Water & aquifer data to be collected from competent agency/ authority. Testing of Water Sample shall be done fortnightly through NABL accredited Laboratory/ Reputed Govt. Institute. Minimum 3 samples shall be taken from each point.	
	Consistent video data collection from the initial drone survey to interviews of local residents, transformation process, key hurdles, and eventual transformation to be compiled into one single video documentary, to be submitted to the authorities by end of the contract period. Treatment shall be done in the drains discharging domestic wastewater into the waterbody.	
Item No.	**Flow (MLD) in drains discharging domesting wastewater into the waterbody.**	**Cost in Rs. (Per month)**
22.11.1	Cost of 1 MLD	75712
22.11.1	Cost of 2 MLD	120666
22.11.2	Cost of 3 MLD	174265
22.11.2	Cost of 4 MLD	211438
22.11.3	Cost of 5 MLD	258986

8. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR)के भाग–एक, Water Supply, Sewerage and Tube Well Works के Chapter-22 में निम्नानुसार आइटम 22.12 जोड़ा जाता है :–

Constructed Wetland based Sewage Treatment Technology

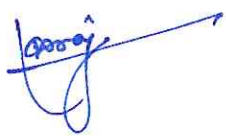
Item. No.	Item Description	Unit	Rate (in Rs)
22.12	Design, providing, construction, installation, commissioning, and operation of Nature Based composite ECO-Constructed Wetland (ECO-CW) / Phytoremediation based STP, including 12 months of Defect Liability Period (DLP). During DLP all repair works, replacement of dead plants will be carried out at no cost. The STP will be for treatment of typical domestic sewage having pH in the range of is 5.5 to 9.0, BOD max 200 mg/L, TSS max 500 mg/L, COD max 450 mg/L, total N-15-20 mg/L and P-10 mg/L as feed without any contamination of industrial waste. If raw sewage characteristics observed as per test (conducted before designing STP) are more critical than the above-mentioned characteristic, then same shall be used for designing of Sewage Treatment Plant (STP) Quality of treated water will meet the parameters as specified under table 'A' below when treatment plant scope is limited to primary and secondary treatment steps described herein. In addition to the above, advance level treatment to be added for meeting treated water quality specified in table 'B' below. Drawings: Site specific detailed drawing with plan, sections, hydraulic drawing, P&I diagram. **Primary Treatment:** Should include properly designed following components – Screen Chambers with RT 3 min or velocity 0.6 m/s with manual Bar Screen (Coarse Screen made in SS304 with opening of 15-20 mm) – Intake Well with minimum RT of 3 times peak flow of sewage per hour below average invert level of 1.5m. – Screen Chambers with RT 3 min or velocity 0.6 m/s with manual Bar Screen (Fine Screen made in SS304 with opening of 10 mm) – Oil and Grease Trap with RT of 10 min and with oil and grease removal installed. – Grit removal system (for 1 MLD and above sizes) **Secondary Treatment:** – VASFGMT (Vertically Alternating Subsurface Flow Graded Media Trapezoidal) planted bed with minimum RT of 18 h of average flow – High rate CABTLF (Continuous Anaerobic Baffled Top Loaded Filter) reactor with minimum RT of 9.5h for media volume – Filter Feed Tank with minimum RT of 1.5 h of average flow – Treated water tank with minimum RT of 2h of average flow – Raw Sewage Submersible pumps, Working and Standby with proper capacity to meet residence times in treatment tanks – Float Sensors as required for number of tanks designed		

Item. No.	Item Description	Unit	Rate (in Rs)
	– Media for high rate anaerobic reactor with minimum surface area of bed as 100 m^2/m^3 of media volume – Tube settler media of required size – Specific microbial culture for anaerobic reactor – Specific microbial culture for constructed wetland/ phytoremediation bed (loading 25 lit/100 kld) – Plantation using hydrophytes such as canna, kolacia, Umbrella Palm etc. with 2-3 sapling at center of each sqm of planted bed – HDPE lining for CW bed with minimum 700 gsm – PLC based fully automated control panel – Hypochlorite dosing system with HDPE tank and pump – Cable laying with cable trays wherever applicable – Internal piping within STP using UPVC pipes – Perforated pipes in the constructed wetland bed.		
Table	**A) Treated Water Parameters, including primary and secondary treatment pH in the range of 5.5 to 9.0, BOD<30 mg/L, TSS<100 mg/L, COD<250 mg/L, Faecal Coliform <230 MPN/100 ml, Total N<5 mg/L and P<5 mg/L**		
Table	**B) Treated Water Parameters pH in the range of 5.5 to 9.0, BOD<10 mg/L, TSS<20 mg/L, COD<50 mg/L, Faecal Coliform <100 MPN/100 ml, Total N<5 mg/L and P<1 mg/L**		
22.12.1	Cost of 100 KLD plant	Each	70,88,400
22.12.2	Add capacity above 100 to 149KLD	per KLD	52,012
22.12.3	Cost of 150 KLD plant	Each	78,01,800
22.12.4	Add capacity above 151 to 199 KLD	per KLD	44,739
22.12.5	Cost of 200 KLD plant	Each	89,47,900
22.12.6	Add capacity above 201 to 249 KLD	per KLD	42,706
22.12.7	Cost of 250 KLD plant	Each	1,06,76,500
22.12.8	Add capacity above 251 to 299 KLD	per KLD	37,663
22.12.9	Cost of 300 KLD plant	Each	1,12,98,800
22.12.10	Add capacity above 301 to 349 KLD	per KLD	35,618
22.12.11	Cost of 350 KLD plant	Each	1,24,66,400
22.12.12	Add capacity above 351 to 399 KLD	per KLD	32,755
22.12.13	Cost of 400 KLD plant	Each	1,31,01,900
22.12.14	Add capacity above 401 to 449 KLD	per KLD	31,129
22.12.15	Cost of 450 KLD plant	Each	1,40,07,900
22.12.16	Add capacity above 451 to 499 KLD	per KLD	30,031
22.12.17	Cost of 500 KLD plant	Each	1,50,15,700
22.12.18	Add capacity above 501 to 549 KLD	per KLD	29,512
22.12.19	Cost of 550 KLD plant	Each	1,62,31,900
22.12.20	Add capacity above 551 to 599 KLD	per KLD	28,202
22.12.21	Cost of 600 KLD plant	Each	1,69,21,300
22.12.22	Add capacity above 601 to 649 KLD	per KLD	27,770
22.12.23	Cost of 650 KLD plant	Each	1,80,50,700
22.12.24	Add capacity above 651 to 699 KLD	per KLD	26,517
22.12.25	Cost of 700 KLD plant	Each	1,85,61,900
22.12.26	Add capacity above 701 to 749 KLD	per KLD	26,858
22.12.27	Cost of 750 KLD plant	Each	2,01,43,400
22.12.28	Add capacity above 751 to 799 KLD	per KLD	25,994
22.12.29	Cost of 800 KLD plant	Each	2,07,95,600
22.12.30	Add capacity above 801 to 849 KLD	per KLD	25,674

Item. No.	Item Description	Unit	Rate (in Rs)
22.12.31	Cost of 850 KLD plant	Each	2,18,22,900
22.12.32	Add capacity above 851 to 899 KLD	per KLD	26,248
22.12.33	Cost of 900 KLD plant	Each	2,36,23,400
22.12.34	Add capacity above 901 to 949 KLD	per KLD	25,689
22.12.35	Cost of 950 KLD plant	Each	2,44,04,200
22.12.36	Add capacity above 951 to 999 KLD	per KLD	24,484
22.12.37	Cost of 1000 KLD plant	Each	2,44,83,800
22.12.38	Add capacity above 1001 to 1099 KLD	per KLD	28,075
22.12.39	Cost of 1100 KLD plant	Each	3,08,82,300
22.12.40	Add capacity above 1101 to 1199 KLD	per KLD	26,847
22.12.41	Cost of 1200 KLD plant	Each	3,22,15,800
22.12.42	Add capacity above 1201 to 1299 KLD	per KLD	26,449
22.12.43	Cost of 1300 KLD plant	Each	3,43,84,200
22.12.44	Add capacity above 1301 to 1399 KLD	per KLD	25,898
22.12.45	Cost of 1400 KLD plant	Each	3,62,57,300
22.12.46	Add capacity above 1401 to 1499 KLD	per KLD	25,034
22.12.47	Cost of 1500 KLD plant	Each	3,75,50,900
22.12.48	Add capacity above 1501 to 1599 KLD	per KLD	24,330
22.12.49	Cost of 1600 KLD plant	Each	3,89,27,700
22.12.50	Add capacity above 1601 to 1699 KLD	per KLD	23,892
22.12.51	Cost of 1700 KLD plant	Each	4,06,16,200
22.12.52	Add capacity above 1701 to 1799 KLD	per KLD	23,977
22.12.53	Cost of 1800 KLD plant	Each	4,31,58,100
22.12.54	Add capacity above 1801 to 1899 KLD	per KLD	23,383
22.12.55	Cost of 1900 KLD plant	Each	4,44,26,900
22.12.56	Add capacity above 1901 to 1999 KLD	per KLD	23,555
22.12.57	Cost of 2000 KLD plant	Each	4,71,09,900
22.12.58	Add capacity above 2001 to 2199 KLD	per KLD	24,836
22.12.59	Cost of 2200 KLD plant	Each	5,46,39,600
22.12.60	Add capacity above 2201 to 2399 KLD	per KLD	24,189
22.12.61	Cost of 2400 KLD plant	Each	5,80,52,900
22.12.62	Add capacity above 2401 to 2599 KLD	per KLD	23,709
22.12.63	Cost of 2600 KLD plant	Each	6,16,43,300
22.12.64	Add capacity above 2601 to 2799 KLD	per KLD	23,415
22.12.65	Cost of 2800 KLD plant	Each	6,55,62,000
22.12.66	Add capacity above 2801 to 2999 KLD	per KLD	24,584
22.12.67	Cost of 3000 KLD plant	Each	7,37,52,900
22.12.68	Add capacity above 3001 to 3199 KLD	per KLD	23,815
22.12.69	Cost of 3200 KLD plant	Each	7,62,06,600
22.12.70	Add capacity above 3201 to 3399 KLD	per KLD	23,243
22.12.71	Cost of 3400 KLD plant	Each	7,90,24,900
22.12.72	Add capacity above 3401 to 3599 KLD	per KLD	22,948
22.12.73	Cost of 3600 KLD plant	Each	8,26,14,600
22.12.74	Add capacity above 3601 to 3799 KLD	per KLD	23,006
22.12.75	Cost of 3800 KLD plant	Each	8,74,22,700
22.12.76	Add capacity above 3801 to 3999 KLD	per KLD	22,580
22.12.77	Cost of 4000 KLD plant	Each	9,03,19,500
22.12.78	Add capacity above 4001 to 4199 KLD	per KLD	22,792
22.12.79	Cost of 4200 KLD plant	Each	9,57,26,500
22.12.80	Add capacity above 4201 to 4399 KLD	per KLD	22,399
22.12.81	Cost of 4400 KLD plant	Each	9,85,54,600
22.12.82	Add capacity above 4401 to 4599 KLD	per KLD	22,161
22.12.83	Cost of 4600 KLD plant	Each	10,19,42,700
22.12.84	Add capacity above 4601 to 4799 KLD	per KLD	22,847
22.12.85	Cost of 4800 KLD plant	Each	10,96,67,800
22.12.86	Add capacity above 4801 to 4999 KLD	per KLD	22,690
22.12.87	Cost of 5000 KLD plant	Each	11,34,51,500
	Add **Advance level treatment** as extra in item no. 22.12 if treated		

Item. No.	Item Description	Unit	Rate (in Rs)
	water parameters shall be required as mentioned under Table "B" above.		
22.12 (A)	**Advance level Treatment Scope:** – Dual Media filter (for STP capacity below 1 MLD) – Pressure Sand Filter (for STP capacity above 1 MLD) & Activated Carbon Filter (for STP capacity above 1 MLD) – Filter feed pump (1 W+1S) – Required Cabling and Piping for Advance level treatment		
22.12.88	Cost of 100 KLD plant	Each	2,65,891
22.12.89	Add capacity above 100 to 149KLD	per KLD	2,398
22.12.90	Cost of 150 KLD plant	Each	3,59,775
22.12.91	Add capacity above 151 to 199 KLD	per KLD	1,816
22.12.92	Cost of 200 KLD plant	Each	3,63,201
22.12.93	Add capacity above 201 to 249 KLD	per KLD	1,949
22.12.94	Cost of 250 KLD plant	Each	4,87,238
22.12.95	Add capacity above 251 to 299 KLD	per KLD	1,887
22.12.96	Cost of 300 KLD plant	Each	5,66,045
22.12.97	Add capacity above 301 to 349 KLD	per KLD	1,666
22.12.98	Cost of 350 KLD plant	Each	5,83,178
22.12.99	Add capacity above 351 to 399 KLD	per KLD	1,467
22.12.100	Cost of 400 KLD plant	Each	5,86,604
22.12.101	Add capacity above 401 to 449 KLD	per KLD	1,372
22.12.102	Cost of 450 KLD plant	Each	6,17,442
22.12.103	Add capacity above 451 to 499 KLD	per KLD	1,604
22.12.104	Cost of 500 KLD plant	Each	8,01,783
22.12.105	Add capacity above 501 to 549 KLD	per KLD	1,464
22.12.106	Cost of 550 KLD plant	Each	8,05,210
22.12.107	Add capacity above 551 to 599 KLD	per KLD	1,348
22.12.108	Cost of 600 KLD plant	Each	8,08,636
22.12.109	Add capacity above 601 to 649 KLD	per KLD	1,481
22.12.110	Cost of 650 KLD plant	Each	9,62,825
22.12.111	Add capacity above 651 to 699 KLD	per KLD	1,380
22.12.112	Cost of 700 KLD plant	Each	9,66,252
22.12.113	Add capacity above 701 to 749 KLD	per KLD	1,293
22.12.114	Cost of 750 KLD plant	Each	9,69,678
22.12.115	Add capacity above 751 to 799 KLD	per KLD	1,234
22.12.116	Cost of 800 KLD plant	Each	9,86,810
22.12.117	Add capacity above 801 to 849 KLD	per KLD	1,378
22.12.118	Cost of 850 KLD plant	Each	11,71,152
22.12.119	Add capacity above 851 to 899 KLD	per KLD	1,305
22.12.120	Cost of 900 KLD plant	Each	11,74,578
22.12.121	Add capacity above 901 to 949 KLD	per KLD	1,240
22.12.123	Cost of 950 KLD plant	Each	11,78,005
22.12.124	Add capacity above 951 to 999 KLD	per KLD	1,181
22.12.125	Cost of 1000 KLD plant	Each	11,81,431
22.12.126	Add capacity above 1001 to 1099 KLD	per KLD	1,075
22.12.127	Cost of 1100 KLD plant	Each	11,82,802
22.12.128	Add capacity above 1101 to 1199 KLD	per KLD	987
22.12.129	Cost of 1200 KLD plant	Each	11,84,172
22.12.130	Add capacity above 1201 to 1299 KLD	per KLD	912
22.12.131	Cost of 1300 KLD plant	Each	11,85,543
22.12.132	Add capacity above 1301 to 1399 KLD	per KLD	848
22.12.133	Cost of 1400 KLD plant	Each	11,86,914
22.12.134	Add capacity above 1401 to 1499 KLD	per KLD	792
22.12.135	Cost of 1500 KLD plant	Each	11,88,284

Item. No.	Item Description	Unit	Rate (in Rs)
22.12.136	Add capacity above 1501 to 1599 KLD	per KLD	846
22.12.137	Cost of 1600 KLD plant	Each	13,54,123
22.12.138	Add capacity above 1601 to 1699 KLD	per KLD	797
22.12.139	Cost of 1700 KLD plant	Each	13,55,494
22.12.140	Add capacity above 1701 to 1799 KLD	per KLD	754
22.12.141	Cost of 1800 KLD plant	Each	13,56,864
22.12.142	Add capacity above 1801 to 1899 KLD	per KLD	715
22.12.143	Cost of 1900 KLD plant	Each	13,58,235
22.12.144	Add capacity above 1901 to 1999 KLD	per KLD	680
22.12.145	Cost of 2000 KLD plant	Each	13,59,605
22.12.146	Add capacity above 2001 to 2199 KLD	per KLD	619
22.12.147	Cost of 2200 KLD plant	Each	13,62,347
22.12.148	Add capacity above 2201 to 2399 KLD	per KLD	569
22.12.149	Cost of 2400 KLD plant	Each	13,65,088
22.12.150	Add capacity above 2401 to 2599 KLD	per KLD	584
22.12.151	Cost of 2600 KLD plant	Each	15,18,592
22.12.152	Add capacity above 2601 to 2799 KLD	per KLD	543
22.12.153	Cost of 2800 KLD plant	Each	15,21,333
22.12.154	Add capacity above 2801 to 2999 KLD	per KLD	508
22.12.155	Cost of 3000 KLD plant	Each	15,24,074
22.12.156	Add capacity above 3001 to 3199 KLD	per KLD	486
22.12.157	Cost of 3200 KLD plant	Each	15,54,226
22.12.158	Add capacity above 3201 to 3399 KLD	per KLD	458
22.12.159	Cost of 3400 KLD plant	Each	15,56,968
22.12.160	Add capacity above 3401 to 3599 KLD	per KLD	433
22.12.161	Cost of 3600 KLD plant	Each	15,59,709
22.12.162	Add capacity above 3601 to 3799 KLD	per KLD	411
22.12.163	Cost of 3800 KLD plant	Each	15,62,450
22.12.164	Add capacity above 3801 to 3999 KLD	per KLD	391
22.12.165	Cost of 4000 KLD plant	Each	15,65,191
22.12.166	Add capacity above 4001 to 4199 KLD	per KLD	416
22.12.167	Cost of 4200 KLD plant	Each	17,46,106
22.12.168	Add capacity above 4201 to 4399 KLD	per KLD	397
22.12.169	Cost of 4400 KLD plant	Each	17,48,847
22.12.170	Add capacity above 4401 to 4599 KLD	per KLD	381
22.12.171	Cost of 4600 KLD plant	Each	17,51,588
22.12.172	Add capacity above 4601 to 4799 KLD	per KLD	365
22.12.173	Cost of 4800 KLD plant	Each	17,54,330
22.12.174	Add capacity above 4801 to 4999 KLD	per KLD	351
22.12.175	Cost of 5000 KLD plant	Each	17,57,071
Note - No additional payment shall be paid in case of change in the design for the given capacity.			



9. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works क Chapter-22 में निम्नानुसार आइटम 22.13 जोड़ा जाता है–

NANO WATER CONVERTER

S.No.	Particulars of Items	Unit	Rate (in Rs.)
22.13	Providing, Supplying, Fixing and Installation of Nano Water Convertor online based on Nano technology, confirming with the norms are to be used after third party quality assurance certificate for treatment of water and wastewater and effective disinfection equipment including panel box with adaptor (for AC to DC converter), pressure gauge and jointing material like flanges with above 40 mm size of product at both the ends. duly tested inclusive of all cost of inspection charges, transit insurance, loading/unloading and stacking at site / store etc, complete. (This system requires minimum mechanical pressure of 1 to 4 kg. In case of absence of required pressure, auxiliary pumping will be required. hence additional cost for pumping system shall be requisite as mentioned below)		
22.13.1	Nano Water Convertor 25mm (1") length 340 mm, weight 1.2 kg, flow rate of 6720 lit/hr, MS powder coted panel box with AC to DC adopter 01 nos.	Each	269,999.00
22.13.1.1	Optional- 2 HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	13891.00
22.13.2	Nano Water Convertor Heavy Duty 32 mm(1.25") length 390 mm, weight 3.3 kg, flow rate of 12900 lit/hr , MS powder coted panel box with AC to DC adopter 01 nos.	Each	337,999.00
22.13.2.1	Optional- 2HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	13891.00
22.13.3	Nano Water Convertor Heavy Duty 40mm (1.50") length 410 mm, weight 4 kg, flow rate of 19200 lit/hr , MS powder coted panel box with AC to DC adopter 01 nos.	Each	605,999.00
22.13.3.1	Optional- 3 HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	16319.00
22.13.4	Nano Water Convertor Heavy Duty 50mm (2") length 480 mm, weight 7.7 kg, flow rate of 28800 lit/hr , MS powder coted panel box with adopter 01 nos.	Each	539,999.00
22.13.4.1	Optional- 5HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	20173.00
22.13.5	Nano Water Convertor Heavy Duty 65mm (2.5") length 590 mm, weight 15.1 kg, flow rate of 48000 lit/hr, MS powder coted panel box with AC to DC adopter 02 nos.	Each	674,999.00
22.13.5.1	Optional- 5 HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	20173.00

S.No.	Particulars of Items	Unit	Rate (in Rs.)
22.13.6	Nano Water Convertor Heavy Duty 75mm (3") length 660 mm, weight 19.5 kg, flow rate of 69000 lit/hr, MS powder coted panel box with ac to dc adopter 02 nos.	Each	809,999.00
22.13.6.1	Optional- 5 HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	20173.00
22.13.7	Nano Water Convertor Heavy Duty 100mm (4") length 950 mm, weight 42 kg, flow rate of 94800 lit/hrMS powder coted panel box with ac to dc adopter 04 nos.	Each	1,079,999.00
22.13.7.1	Optional- 7.5 HP Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	23874.00
22.13.8	Nano Water Convertor Heavy Duty 125mm (5") length 1150 mm, weight 72.5 kg, flow rate of 144000 lit/hr , MS powder coted panel box with ac to dc adopter 04 nos.	Each	1,349,999.00
22.13.8.1	Optional- 12.5 HP Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	37354.00
22.13.9	Nano Water Convertor Heavy Duty 150mm (6") length 1320 mm, weight 105 kg, flow rate of 222000 lit/hr, MS powder coted panel box with ac to dc adopter 04 nos.	Each	1,619,999.00
22.13.9.1	Optional- 15 HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	40401.00
22.13.10	Nano Water Convertor Heavy Duty 200mm (8") length 1600 mm, weight 210 kg, flow rate of 390000 lit/hr, MS powder coted panel box with ac to dc adopter 06 nos.	Each	2,159,999.00
22.13.10.1	Optional- 20 HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	56476.00
22.13.11	Nano Water Convertor Heavy Duty 250mm (10") length 1950 mm, weight 400 kg, flow rate of 630000 lit/hr, MS powder coted panel box with ac to dc adopter 08 nos.	Each	2,699,999.00
22.13.11.1	Optional- 25 HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	73022.00
22.13.12	Nano Water Convertor Heavy Duty 300mm (12") length 2300 mm, weight 625 kg, flow rate of 780000 lit/hr , MS powder coted panel box with ac to dc adopter 08 nos.	Each	3,239,999.00
22.13.12.1	Optional- 30 HP, Centrifugal Monoblock Pumpset (if required) installation charges with accessories and required civil work and electric work as per safety norms.	Each	89457.00

Note - **1.** This system required min. mechanical pressure of 1-4 kg, in case of absence of required pressure, auxiliary pumping will be required.

2. No additional payment shall be paid in case of change in the design for the given capacity.

10. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works के Chapter-22 में निम्नानुसार आइटम 22.14 जोड़ा जाता है–

Bio Culture
(Bio Culture manufacturing based on fruits and vegetables extracts)

Item. No.	Item Description	Unit	Rate (in Rs)
22.14	Supply, Installation, Commissioning, Testing and dosing or spray of Bio culture for wastewater/ sewage treatment in drains, ponds, water bodies, wetlands for Phyto-remediation/ Phytorid, STP/ ETP Plants including - solar pump, labor, water testing (fortnightly through NABL accredited Laboratory/ Reputed Govt Institute. Minimum 3 samples shall be taken from each point), Screens, dosing Water tank of 5000 Lit with fittings, gabion wall and protection cage for dosing water tank. Complete.	Per MLD	91,000/- Per Month

11. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works क Chapter-22 में निम्नानुसार आइटम 22.15 जोड़ा जाता है:–

Sewage Treatment Plant (STP) - Rotating Media Bio Reactor (RMBR)/ Rotating Attached Growth Treatment Plant.

Item. No.	Item Description	Unit	Rate (Rs. in Lakh)
	NOTES:-		
22.15	1. Screen chamber and grit separator upto 5 MLD capacity are considered as manual type.		
	2. Upto 5 MLD capacity STP, chlorination shall be done by using sodium hypochlorite solution. Above 5 MLD capacity gas chlorinator to be provided.		
	3. Sludge thickener is not provided upto 3 MLD capacity STP, Sludge will be collected into sludge sump & pumped directly to sludge dewatering system.		
	4. For all STP sludge dewatering is using solid bowl centrifuge Or Basket Centrifuge.		
	5. Chlorinator room not considered for STP upto 3 MLD capacity. For STP upto 3 MLD, laboratory & administration building is not considered. Only a room for operator is considered.		
	6. Storm water drains, site clearance is not considered in scope.		
	7. All water retaining structures are in M-30 grade of concrete.		
	8. Water table is considered 5 M below GL for design.		
	9. Grade for cement used is OPC 43 grade.		
	10. Grade of steel used is fe 415.		
	11. Peak factor considered for design for plants upto 3 MLD is 3.0, from 4 to 15 MLD is 2.5 & from 16 to 20 MLD is 2.0.		
	12. Chemicals required during trial run & commissioning is not considered.		
	13. Power available at STP location is assumed as LT power supply.		
	14. All the structural steel works / fabrications are to be provided with application of Hot dip zinc coating according to specification as per IS 4759: 1996 (reaffirmed 2006)		
1	**Sewage Treatment Plant (STP) - Rotating Media Bio Reactor (RMBR)/ Rotating Attached Growth Treatment Plant.**		

Item. No.	Item Description	Unit	Rate (Rs. in Lakh)
	Designing, providing, constructing, hydraulic testing, commissioning and giving satisfactorily trials consisting of Wet well including pumping up to inlet chamber, Inlet Chamber, Screen Chamber, Detritus Tanks/ Vortex Grit Separator, Distribution Chamber and RMBR tanks/ Rotating Attached Growth Treatment Plant., Sludge Sump, Chlorine Contact Tank, Chlorinator Room/Shed, Sludge Centrifuge, Pump House, necessary piping work with required valves, gates, drains, pathways, Administration Block cum Laboratory, Laboratory Equipments, Tools and Plants, Spare Parts, etc. complete as turnkey job with all involved civil, electrical and mechanical works inclusive of following items, units as per detailed specifications for civil, electrical and mechanical components with all duties and taxes etc. complete. to achieve BOD < 10ppm, COD < 50ppm, TSS < 10ppm, Total N < 10ppm and Total P < 1ppm and Fecal Coliform < 100 MPN/100ml to get recyclable quality of water for industrial / agricultural purposes. (Including 12 Months of Defect Liability Period)		
	UNITS INCLUDED:		
	Inlet Chamber: Designing, providing, and constructing RCC (M-30) inlet chamber for the peak flow of 2 DWF including necessary excavation in all types of strata including walkway all around the periphery. Each compartment will have phosper bronze, steel gates with extension rod, head stock, operating wheels, GI pipe railing etc. The work includes providing and making necessary arrangements to connect the flow to screen chamber by approach channel as directed and as per specifications.		
	Screen Chamber: Designing, providing, constructing, testing and commissioning of screen chamber, designed for average 1 DWF and maximum peak flow of 2 DWF in RCC (M -30), including walkway 1.2 m wide, inlet pipe/ channel from inlet chamber, outlet pipe / channel to detritus tank, free board of 0.5 m minimum, RCC walkway 1.2 m wide with GI pipe railing. RCC stair case of 1.2 m width from GL to screen chamber.		
	Detritus Tank: Designing, providing and constructing continuously grit removal type of Detritus Tank, mechanically operated in RCC (M-30) capable of removing 100% 0.2 mm size particle and above, having specific gravity 2.30 designed for one peak 2 DWF with suitable arrangement of separation of grit from putrescible solids including providing, and making necessary arrangements of JB- 1. Inlet and outlet channels of required sizes as make be required to connect the flow to connecting unit etc. Complete including hydraulic testing for water tightness of structure having minimum FB of 0.3 m, wash out arrangement to Grit chamber and platform 1.2 m wide RCC walkway with GI pipe handling shall be provided. A pit for collecting grit conveyed by conveyor shall be provided. It should be suitable to handle the grit for carting. All arrangements shall be as detailed specifications and as directed. OR Designing, providing / constructing Vortex Grit Separators in Mild Steel with Coal Tar epoxy on inside and Marine Epoxy on outside, complete with internal piping, sludge removal valve etc complete		
	HYBRID ANAEROBIC REACTOR: in MS/ RCC for removal of Suspended solids and BOD upto 50-60% of incoming load. RMBR Basins: Designing, providing and constructing in RCC mixed (M-30), RMBR basins for biological removal of BOD along with nitrification, den denitrification and Phosphorus Removal. The RMBRs shall be complete with RMBR drums of Polypropylene in Mild Steel framework, plummer blocks, geared motor, Variable Frequency Drive (VFD) if needed, PP media etc complete, along with a Bio Film Separator ANOXIC REACTOR with attached growth media of PVC fills for Nitrogen removal. Tank of MS/ RCC M30		

Item. No.	Item Description	Unit	Rate (Rs. in Lakh)
	Chlorine Contact Tank: Designing providing and constructing chlorine contact chamber of adequate capacity to deal with 1DWF average flow. The chlorine contact tank should be of 30 min capacity, during average flow to achieve 99.99 % coli form reduction. Chlorine dose shall be maintained as per standard provisions, including designing, providing and constructing water supply provision for chlorination, including providing dewatering and by pass arrangement jointing to final effluent mains and outlet weir etc complete. The effluent quality should match with the standards laid down by the department, as per obligatory provision, as detailed specification and as directed by engineer in - charge. OR Ozonator of adequate capacity complete with Ozone generator, Air drier and O2 concentrator		
	Chlorinator and Chlorinator Room/Tonner Room: Designing, providing and constructing chlorinators vacuum type 2 Nos, with auto switchover facility and having capacity for dosage of adequate chlorine to ensure 99.99 % coliform reduction as per per obligatory provisions and detailed specifications with necessary provision of having chlorinator room of adequate size. The chlorinator equipment shall include cost of chlorine cylinders/tonner, piping, valves, measuring and controlling equipment, safety devices, lifting equipment's, etc. complete as per IS -10553 (part II) 1982. The tonner room should have minimum 3 MT capacity crane for loading and unloading facility. Tonner storage should be distinctly isolated and should be for minimum storage space as directed in the design specification and as per gas laws 1981 and factory act shall be provided. All other matching amenities shall be provided, 5 MT gantry rail shall be provided for full length of tonner room at 6 m height from level of tonner room, with outlet chamber and treated effluent outlet channel etc. Complete as per detailed specification. (Chlorinator and Chlorinator Room/Tonner Room Not required if ozonator is provided)		
	Sludge Sump: Designing, providing and constructing of sludge sump and pump house of appropriate size with pumps, ceiling height minimum 6 m over sump for discharging sludge to centrifuge and recycling of flow for blending of sludge using CI pipe complete as per detailed specification.		
	Sludge Centrifuge Platform with Centrifuges: Designing, providing, constructing and installing including foundation etc, sludge centrifuge to handle the sludge flow of 1 day in 20 hours per unit with sludge dewatering unit drain etc complete as per specification. sludge centrifuges with the necessary arrangement as per detailed specification mentioned in tender and obligatory provisions to be provided with satisfactory functioning. OR: Basket Centrifuge/s of adequate capacity with PP bags; complete with mass foundation.		
	Outfall Sewer: Designing, providing and constructing appropriate outfall sewer of RCC NP2 pipe, to discharge treated effluent, untreated effluent from outlet chamber to the local Nallah at the point shown on the drawing including necessary chambers for inspection and cleaning including necessary excavation, dewatering, refilling, concrete encasing/bedding concrete steps to reach the nallah bed level. pitching and energy dissipation chamber in nallah portion etc. complete upto 50 m length RCC NP2 pipe line and including all above items.		
	Piping work in CI Class-LA OR Ductile Iron including Sluice valves, Reflux Valves, MS Gates: Providing laying and jointing pipes other than those already included in the above items for interconnection by - pass drains etc. of all units including adequate numbers of manhole chambers. The item includes excavations, refilling and hydraulic testing of pipes, valves, gates, accessories and cost of jointing materials. The items includes required channels with gates for interconnection of units by pass drains etc for all units as directed etc complete as per detailed		

Item. No.	Item Description	Unit	Rate (Rs. in Lakh)
	specifications		
	Administrative Building cum Laboratory, single storied Porta cabin / Brick and mortar construction of total carpet area of minimum 300 sqft : Designing, providing and constructing administrative building, office cum Laboratory including stores. Aluminum door and window with glass panels and all other allied items, fixtures fastening electrification arrangement water supply arrangement etc complete. The building should be so centralized that it should not be attached with any unit but should have complete control of every unit as per laboratory equipment, beautification, telephone and intercom arrangement and wireless system. Scope also includes construction of boundary wall.		
22.15.1	Cost of 1 MLD	MLD	240.00
22.15.2	Add per MLD above 1 MLD upto 2 MLD	MLD	90.00
22.15.3	Add per MLD above 2 MLD upto 5 MLD	MLD	80.00
22.15.4	Add per MLD above 5 MLD upto 10 MLD	MLD	75.00
22.15.5	Add per MLD above 10 MLD upto 15 MLD	MLD	70.00
Note- No additional payment shall be paid in case of change in the design for the given capacity.			

12. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works क Chapter-22 में निम्नानुसार आइटम 22.16 जोड़ा जाता है:–

AGBRR (Attached Growth Bioremediation with Recirculating Reactor) based Sewage Treatment Plant (STP)

S.No.	Particulars	Unit	Rate (in Lakhs)
22.16	**AGBRR (Attached Growth Bioremediation with Recirculating Reactor) based Sewage Treatment Plant (STP)** Design, Supply, Commissioning, Testing and giving satisfactory trials by consistency by treatment of domestic and mix sewage from closed drain or open drains by pumping from collection tank to Inlet Chamber, Inlet Chamber, Screen Chamber, Grit Chamber, Oil & Grease Chamber, Equalization Tank, Primary Clarifier, Homogenization Tank, Fecal Sludge Management Reactor, Biological Reactor 1 (Fixed Film Biological Reactor 1), Recirculation Tank, Biological Reactor 2 (Fixed Film Biological Reactor 2) Buffer Tank, Disinfection Tank, Chlorination Tank, Filter Feed Tank, Control Panel Room, Pump House, Sludge collection tank, necessary piping work with required vales, gate valves, drains, pathway, Administration block with laboratory, Laboratory Equipment, Tools and Plants, Spair Parts etc. complete as turnkey job with all civil, mechanical, electrical work inclusive of following items, units as per detailed specification for civil, electrical and mechanical component with all duties and taxes etc. complete to achieve BOD < 10 ppm, COD < 50ppm, TSS < 10ppm to get treatment of waste water to quality water for Industrial /		

S.No.	Particulars	Unit	Rate (in Lakhs)
	Agriculture / Landscaping / Recharge water bodies / Multiple uses purposes, Including Defect liability period (DLP)of 12 months. During DLP all repair works and replacement of essential components will be carried out so that the STP shall be operational during the period.		
	UNITS INCLUDED:		
	Inlet Chamber: Design, Providing and construction of RCC (M-30) inlet chamber designed for the peak flow including necessary excavation in all type of strata including walkway all around the periphery, each compartment will have CI gate with extension rod, head stock, operating wells, GI pipe railing etc. The work includes providing and making necessary arrangement to connect the flow to screen chamber by approach channel as directed and as per specification.		
	Screen Chamber: Designing, providing and construction, testing and commissioning of screen chamber, design for peak flow in RCC (M-30), Including walkway with GI railing all around. Screen should be bar screen of minimum 10mm thick of Stainless Steel (SS-316)		
	Grit Chamber: Designing, providing and construction, testing and commissioning of screen chamber, design for peak flow in RCC (M-30), Complete including hydro testing for water tightness of structure having minimum free board of 0.3mtr wash out arrange to sludge collection tank. Including walkway with GI railing all around.		
	Equalization Tank: Designing, providing and construction, testing and commissioning of equalization tank, design for peak flow in RCC (M-30), Tank shall be watertight and fitted with 2 industrial pump for sewage water a s1 working and 1 standby, including walkway with GI railing all around.		
	Primary Clarifier: Designing, providing and Fabrication with epoxy / Construction RCC (M-30) watertight primary clarifier having Side Water Depth (SWD) 3.75m + 0.5m FB. The Settler shall be provided with scraper mechanism in MS with epoxy painting for collecting the settled solid at the bottom (bottom slope 1: 12) The central feed well shall be made of MS epoxy painting from both faces & well stiffened. The sewage will be admitted in the feed well & then will move outwards towards periphery slowly and continuously over a weir & will be collected in launder.		
	Homogenization Tank: Designing, providing and construction, testing and commissioning of homogenization tank, design for peak flow in RCC (M-30), Tank shall be watertight and fitted with 2 industrial pumps for sewage water a s1 working and 1 standby, including walkway with GI railing all around.		
	Fecal Sludge management Reactor: Designing, Providing and construction RCC (M-30) Fecal Sludge management reactor tank for removal of BOD, COD, TDS along with nutrient removal to handle the average flow by spreading water through bowbler sprinkler up word into specialized media and handle sludge decomposition with suitable walkway with watertight		

S.No.	Particulars	Unit	Rate (in Lakhs)
	reactor having SWD 2.0m + 0.5m FB. The Reactor is filled with multiple layers of Fecal sludge Media like, gravels, pebbles, Sawdust in chips form, earthworm , in descending order from bottom and vent pipe is fitted in every 3m for releasing of Hume gas from bottom at a height of 2m with cowl cap at top of PVC Pipe. Water is spread through sprinkler and fitted in UPVC /CPVC /GI pipeline at reactor media. Reactor is having both side slope to ward centre for drain out filter water to recirculation tank by cutout of size 160mm diameter on wall at drain level of reactor and treated water transfer to Accumulation Tank.		
	Accumulation Tank: Designing, providing and construction, testing and commissioning of recirculation tank, design for peak flow in RCC (M-30), Tank shall be watertight and fitted with 2 industrial pump of sewage water as 1 working and 1 standby, including walkway with GI railing all around.		
	Fixed Film Biological Reactor 1: Designing, Providing and construction RCC (M-30) biological reactor tank for removal of BOD, COD, TSS along with nutrient removal to handle the average flow by spreading water through umbrella sprinkler and handle average & peak flow condition with suitable walkway with watertight reactor having SWD 2.0m + 0.5m FB. The Reactor 1 is filled with multiple layers of fixed film media like, gravels, pebbles, marble stone, activated carbon, in descending order from bottom and vent pipe is fitted in every 3m for releasing of Hume from bottom at a height of 2m with cowl cap at top of PVC Pipe. Water is spread through sprinkler and fitted in UPVC /CPVC /GI pipeline from top of reactor. Reactor is having one side slope for drain out filter water to recirculation tank by cutout of size 100mm diameter on wall at floor level of reactor 1 and filter water travel by drain toward recirculation tank.		
	Recirculation Tank: Designing, providing and construction, testing and commissioning of recirculation tank, design for peak flow in RCC (M-30), Tank shall be watertight and fitted with 2 industrial pumps for sewage water a s1 working and 1 standby, including walkway with GI railing all around.		
	Fixed Film Biological Reactor 1: Designing, Providing and construction RCC (M-30) biological reactor tank for removal of BOD, COD, TSS along with nutrient removal to handle the average flow by spreading water through umbrella sprinkler and handle average & peak flow condition with suitable walkway with watertight reactor having SWD 2.0m + 0.5m FB. Area of reactor 2 is half of reactor 1. The Reactor 2 is filled with multiple layers of fixed film media like, gravels, pebbles, marble stone, activated carbon, in descending order from bottom and vent pipe is fitted in every 3m for releasing of Hume from bottom at a height of 2m with cowl cap at top of PVC pipe. Water is spread through sprinkler and fitted in UPVC /CPVC /GI pipeline from top of reactor. Reactor is having one side slope for drain out filter water to recirculation tank by cutout of size 100mm diameter on wall at floor level of reactor 1 and filter		

S.No.	Particulars	Unit	Rate (in Lakhs)
	water travel by drain toward recirculation tank.		
	Buffer Tank: Designing, providing and construction, testing and commissioning of Buffer tank, design for peak flow in RCC (M-30), Tank shall be watertight and fitted with 2 industrial pump for sewage water a s1 working and 1 standby, including walkway with GI railing all around. Ozone Disinfectant is attached with this tank by UPVC pipeline and diffuser at the bottom to release ozone. The tank is equipped with inlet and outlet arrangement in wall as per design.		
	Filter Feed Tank: Designing, providing and construction, testing and commissioning of Buffer tank, design for peak flow in RCC (M-30), Tank shall be watertight and fitted with 2 industrial pumps for sewage water a s1 working and 1 standby, including walkway with GI railing all around. Filtration system is attached with this tank for final polishing of treated water by Multi Grade Filter and Activated Carbon Filter. The tank is equipped with inlet and outlet arrangement in wall as per design.		
	Discharge: Final treated / recycle water would be indirect discharge for multiple use.		
	Sludge Collection Tank: Designing, Providing and construction of sludge collection tank and pump for discharging sludge into thickener using MS / UPVC pipe complete as per design and detailed specification.		
	Piping work: providing, laying, and jointing pipe other than those already included in the above items for inter connection, bypass drain etc. of all units including adequate numbers of manholes chambers, the items include excavation, filling, & hydraulic testing of pipes, valves, gate, accessories & cost of jointing material. The items include channel with gate of interconnection of units, bypass drain etc. for all units as directed etc. complete as per detailed specification.		
22.16.1	100	KLD	42
22.16.2	150	KLD	64
22.16.3	200	KLD	85
22.16.4	300	KLD	106
22.16.5	400	KLD	127
22.16.6	500	KLD	148
22.16.7	600	KLD	170
22.16.8	700	KLD	191
22.16.9	800	KLD	212
22.16.10	900	KLD	244
22.16.11	1000	KLD	265
22.16.12	Add Per MLD above 1 MLD up to 5 MLD	MLD	200
	Notes: -		
	Screen Chamber and Grit Chamber upto 5 MLD capacity are considered as manual type.		
	Upto 1 MLD capacity disinfection shall be done by Ozonation and above 1 MLD to 5 MLD shall be done by Chlorination.		
	Sludge Thickner / primary clarifier is provided from 0.1 MLD capacity of STP, Sludge will be collected into sludge collection tank & pumped for treatment of sludge.		
	For all STP treatment of sludge by sludge drying bed to be provided upto 0.5 MLD capacity		
	For all STP sludge dewatering to be provided for treatment of sludge more than 0.5 MLD capacity		

S.No.	Particulars	Unit	Rate (in Lakhs)
	STP's by using solid bowl centrifuge.		
	Chlorinator room not considered for STP upto 3 MLD capacity, For STP upto 3 MLD Laboratory and Administrative Building is not considered only a room for operator is		
	Boundary Wall, fencing, gate, storm water drains, site clearance is not considered in this scope.		
	All water retaining structure are in M-30 grade of concrete.		
	Water table is considered 5 m below ground level for design.		
	Grade of concrete used is OPC 43 grade.		
	Grade of steel used is Fe 415		
	Peak factor considered for design of plant upto 1 MLD is 3, from 2 to 5 MLD is 2.5		
	Power available at STP location is assumed as LT power supply.		
	All the structural steel work / fabrication work are to be provided with application of Hot dip zinc coating according to specification as per IS 4756: 1996 (reaffirmed 2003)		
	Consent from pollution control board for Establishment and Operate is not considered in this scope, Consent to be taken by client and fee to be paid by client.		
	Electrical connection to be provided by client, Transformer and Gen set not to be considered in this scope.		
	All Tanks fitted with pumps complete with all fittings (1 working & 1 standby)		
	Control panel is based on PLC with HMI feature upto 1 MLD, more than 1 MLD SCADA to be considered.		
	All electrical & mechanical items to be considered as per design and requirement for STP plants.		
No additional payment shall be paid in case of change in the design for the given capacity.			

13. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tube Well Works क Chapter-22 में निम्नानुसार आइटम 22.17 जोड़ा जाता है:–

AERATED TREATMENT WETLANDS BASED SEWAGE TREATMENT PLANT

S. No	Item Description	Unit	Rate (In Rs)
22.17	Designing, providing, constructing, hydraulic testing, commissioning and giving satisfactorily trials of Forced Bed Aerated Treatment Wetlands Systems to achieve the below mentioned under point 'A' discharge parameters of the treated water with 12 months of Defect Liability Period (DLP). During DLP, all repair works, replacement of pre-treated Aquatic Plants will be carried out. System shall be designed for the following influent domestic raw sewage characteristics: pH - 5.5 - 9.0, BOD_5< 250 mg/L, COD < 500 mg/L, TSS < 300 mg/L, Total N < 50 mg/L, Total P < 15 mg/L, Faecal Coliform (MPN) < 10^6- 10^7. If raw sewage characteristics observed as per test (conducted before designing STP) are more critical than the above-mentioned characteristic, then same shall be used for designing of Sewage Treatment Plant (STP).Quality of treated water will meet the parameters as specified at table 'A' below, if not, Additional item of Advance Level Treatment to be added to meet treated water quality as specified in table 'A' below.		

S. No	Item Description	Unit	Rate (In Rs)
	Drawings: Site specific detailed drawings with plan, sections, hydraulic, P&I diagram. **Pre Treatment:** • Screen Chambers with Retention Time 3 min or velocity 0.6 m/s with manual Bar Screen (Coarse Screen made in SS304 with opening of 15-20 mm) Intake Well with minimum RT of 3 times peak flow of sewage per hour below average inverts level of 1.5m. For every cubic meter increase in volume of Wetwell, additional cost of Rs. 21,120/- shall be added. • Screen Chambers with RT 3 min or velocity 0.6 m/s with manual Bar Screen (Fine Screen made in SS304 with opening of 10 mm) • Oil and Grease Trap with RT of 10 min and with oil and grease removal installed. • Grit removal system (for 1 MLD and above sizes) **Primary Treatment (Aerobic digestion):** 24 hour net retention time; Multi-chambered RCC Tank (M30) with 3.5 to 4.5 meter depth based on site conditions Providing, installation and commissioning of Rapid Acting Destratification & Oxygen Restoration (RADOR) system. Providing, applying, spraying, adding of Organic Enzyme and Micro-nutrient. **Secondary Treatment (Aerated Treatment Wetlands):** 2 Nos RCC open tanks (M30) with common wall or built separatelyto provide a total volume of 1.40 CuM/KL of treatment (0.6 to 0.8 Sqm surface area with 2.2 to 2.5 meter depth) Designing, planning, constructing RCC basins for Aerated Wetlands Hydraulic testing and commissioning of Advanced Engineered Constructed Wetlands. Aerated Treatment Wetland systems rely on the ability to inject small quantities of air in a very uniform pattern throughout the wetland bed. Hydraulic Design & Piping Network in Wetland Basins: Providing, fixing and commissioning of Piping network SCH - 40 (CPVC), PN-6 Suitable for wetland including hydraulic design and various types of Pipes & Fittings, Risers, Valves designed on the basis of Subsurface Flow and Vertical Flow in Wetlands to make Sewage water to spread all across the Wetland evenly and make sure that the sewage water comes in contact with roots of the Macrophytes for remediation including collection network. Seasoned Aquatic Plants: Providing, supplying and planting pre-treated Aquatic Plants for the Wetland basins. These Plants proliferate and absorb nutrients from the waste streams. Species are selected based on the nature of the wastewater and the pollutant loads. The plant species includes Heliconia, Typha, Thalia Dealbata, Alocasia, Cyperus Alternifolius, Canna Indica etc as per the Sewage Characteristics. These		

S. No	Item Description	Unit	Rate (In Rs)
	plants are planted @ 4 no's per Sqm of wetland area. Disinfection through 1 PPM Chlorination **Electro-Mechanical Components:** Designing, Supplying with Installation & Commissioning of all the following components. • Manual Coarse Screen With 10mm Bar Spacing for suitable design flow • Manual Fine Screen with 6mm Bar Spacing for suitable design flow • Non-Clog Submersible Pumps for design flow and head with 2 Working+1 Standby for wetwell • Air blowers side channel type for design flow with required pressure in mbar with 2 Working+1Standby • Electro Magnetic Flow Meters at the inlet & outlet of the plant to measure the incoming and outgoing flow • Bourden type pressure gauges • MCC Control Panel IP rating of IP55 with required Switchgear for each feeder (IP Rating is about Partial Protection against dust and similar particles) • Non Clog Submersible Pumps with 1Working+1Standby for disposing treated water from treated water tank • Installation of PVC, UPVC Piping & its fittings with PN6 rating of standard make for interconnecting networks • DI/DF Butterfly Valves, NRV's for pumps & blowers, • Cable Float level Switch with NO/NC contacts • Armoured Copper & Aluminium Cable of necessary sizes. • Installation of Cable glands, lugs required for terminations • GI Earth Strip of required size for body earthing of equipment, • 20W LED Industrial Light fittings for Rooms with Switch board, GI street poles & LED Light fittings for Outdoor and MS Structural Steel Fabrication for necessary supports where ever required. **Site Development:** • Toe wall with brick masonry with Chain link fence Main Entrance gate(Two gates, one with 6' wide and the other 4' wide, 5' height MS frame with welded I sections) • Plant lighting • Security/Office room (Minimum 100 SFT below 1 MLD, and with every 1 MLD, the room size goes by 120 Sqft) • Display Signboards/Name plates with treatment scheme & project details		

S. No	Item Description	Unit	Rate (In Rs)
A	**Treated Water Parameters:** pH in the range of 5.5 to 9.0, BOD_5<10 mg/L, TSS<20 mg/L, COD<50 mg/L, Faecal Coliform <100 MPN/100 ml, Total N<5 mg/L and P<1 mg/L		
22.17.1	Cost of 100 KLD plant	Each	68,06,676
22.17.2	Add capacity above 100 to 149KLD	Per KLD	26,669
22.17.3	Cost of 150 KLD plant	Each	81,40,128
22.17.4	Add capacity above 151 to 199 KLD	Per KLD	26,669
22.17.5	Cost of 200 KLD plant	Each	94,73,581
22.17.6	Add capacity above 201 to 249 KLD	Per KLD	26,669
22.17.7	Cost of 250 KLD plant	Each	1,08,07,033
22.17.8	Add capacity above 251 to 299 KLD	Per KLD	26,669
22.17.9	Cost of 300 KLD plant	Each	1,21,40,486
22.17.10	Add capacity above 301 to 349 KLD	Per KLD	26,669
22.17.11	Cost of 350 KLD plant	Each	1,34,73,938
22.17.12	Add capacity above 351 to 399 KLD	Per KLD	26,669
22.17.13	Cost of 400 KLD plant	Each	1,48,07,391
22.17.14	Add capacity above 401 to 449 KLD	Per KLD	26,669
22.17.15	Cost of 450 KLD plant	Each	1,61,40,843
22.17.16	Add capacity above 451 to 499 KLD	Per KLD	26,669
22.17.17	Cost of 500 KLD plant	Each	1,74,74,296
22.17.18	Add capacity above 501 to 549 KLD	Per KLD	17,010
22.17.19	Cost of 550 KLD plant	Each	1,83,24,794
22.17.20	Add capacity above 551 to 599 KLD	Per KLD	17,010
22.17.21	Cost of 600 KLD plant	Each	1,91,75,293
22.17.22	Add capacity above 601 to 649 KLD	Per KLD	17,010
22.17.23	Cost of 650 KLD plant	Each	2,00,25,792
22.17.24	Add capacity above 651 to 699 KLD	Per KLD	17,010
22.17.25	Cost of 700 KLD plant	Each	2,08,76,290
22.17.26	Add capacity above 701 to 749 KLD	Per KLD	17,010
22.17.27	Cost of 750 KLD plant	Each	2,17,26,789
22.17.28	Add capacity above 751 to 799 KLD	Per KLD	17,010
22.17.29	Cost of 800 KLD plant	Each	2,25,77,288
22.17.30	Add capacity above 801 to 849 KLD	Per KLD	17,010
22.17.31	Cost of 850 KLD plant	Each	2,34,27,786
22.17.32	Add capacity above 851 to 899 KLD	Per KLD	17,010
22.17.33	Cost of 900 KLD plant	Each	2,42,78,285
22.17.34	Add capacity above 901 to 949 KLD	Per KLD	17,010
22.17.35	Cost of 950 KLD plant	Each	2,51,28,784
22.17.36	Add capacity above 951 to 999 KLD	Per KLD	17,010
22.17.37	Cost of 1000 KLD plant	Each	2,59,79,283
22.17.38	Add capacity above 1001 to 1099 KLD	Per KLD	24,867
22.17.39	Cost of 1100 KLD plant	Each	2,84,65,970
22.17.40	Add capacity above 1101 to 1199 KLD	Per KLD	24,665
22.17.41	Cost of 1200 KLD plant	Each	3,09,32,430
22.17.42	Add capacity above 1201 to 1299 KLD	Per KLD	24,462
22.17.43	Cost of 1300 KLD plant	Each	3,33,78,665
22.17.44	Add capacity above 1301 to 1399 KLD	Per KLD	24,260
22.17.45	Cost of 1400 KLD plant	Each	3,58,04,675

S. No	Item Description	Unit	Rate (In Rs)
22.17.46	Add capacity above 1401 to 1499 KLD	Per KLD	24,058
22.17.47	Cost of 1500 KLD plant	Each	3,82,10,458
22.17.48	Add capacity above 1501 to 1599 KLD	Per KLD	23,856
22.17.49	Cost of 1600 KLD plant	Each	4,05,96,016
22.17.50	Add capacity above 1601 to 1699 KLD	Per KLD	23,653
22.17.51	Cost of 1700 KLD plant	Each	4,29,61,348
22.17.52	Add capacity above 1701 to 1799 KLD	Per KLD	23,451
22.17.53	Cost of 1800 KLD plant	Each	4,53,06,454
22.17.54	Add capacity above 1801 to 1899 KLD	Per KLD	23,249
22.17.55	Cost of 1900 KLD plant	Each	4,76,31,334
22.17.56	Add capacity above 1901 to 1999 KLD	Per KLD	23,047
22.17.57	Cost of 2000 KLD plant	Each	4,99,35,989
22.17.58	Add capacity above 2001 to 2199 KLD	Per KLD	22,881
22.17.59	Cost of 2200 KLD plant	Each	5,45,12,150
22.17.60	Add capacity above 2201 to 2399 KLD	Per KLD	22,501
22.17.61	Cost of 2400 KLD plant	Each	5,90,12,424
22.17.62	Add capacity above 2401 to 2599 KLD	Per KLD	22,122
22.17.63	Cost of 2600 KLD plant	Each	6,34,36,802
22.17.64	Add capacity above 2601 to 2799 KLD	Per KLD	21,742
22.17.65	Cost of 2800 KLD plant	Each	6,77,85,284
22.17.66	Add capacity above 2801 to 2999 KLD	Per KLD	21,363
22.17.67	Cost of 3000 KLD plant	Each	7,20,57,840
22.17.68	Add capacity above 3001 to 3199 KLD	Per KLD	20,666
22.17.69	Cost of 3200 KLD plant	Each	7,61,91,072
22.17.70	Add capacity above 3201 to 3399 KLD	Per KLD	20,247
22.17.71	Cost of 3400 KLD plant	Each	8,02,40,476
22.17.72	Add capacity above 3401 to 3599 KLD	Per KLD	19,828
22.17.73	Cost of 3600 KLD plant	Each	8,42,06,088
22.17.74	Add capacity above 3601 to 3799 KLD	Per KLD	19,409
22.17.75	Cost of 3800 KLD plant	Each	8,80,87,838
22.17.76	Add capacity above 3801 to 3999 KLD	Per KLD	18,990
22.17.77	Cost of 4000 KLD plant	Each	9,18,85,760
22.17.78	Add capacity above 4001 to 4199 KLD	Per KLD	19,733
22.17.79	Cost of 4200 KLD plant	Each	9,58,32,408
22.17.80	Add capacity above 4201 to 4399 KLD	Per KLD	19,425
22.17.81	Cost of 4400 KLD plant	Each	9,97,17,376
22.17.82	Add capacity above 4401 to 4599 KLD	Per KLD	19,116
22.17.83	Cost of 4600 KLD plant	Each	10,35,40,664
22.17.84	Add capacity above 4601 to 4799 KLD	Per KLD	18,808
22.17.85	Cost of 4800 KLD plant	Each	10,73,02,272
22.17.86	Add capacity above 4801 to 4999 KLD	Per KLD	18,691
22.17.87	Cost of 5000 KLD plant	Each	11,10,40,558
Note - No additional payment shall be paid in case of change in the design for the given capacity.			

14. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tubewell works में Chapter-23 को निम्नानुसार प्रतिस्थापित किया जाता है :–

Item no.	Item Description	Unit	Rate (In Rs.)
23	Designing and constructing RCC ground service reservoirs / RCC sumps of required capacity including excavation in all types of strata, foundation concrete, container walls, bottom slab top RCC roof slab / or dome, 20 mm thick cement plaster with water proofing compound in CM 1:3 proportion to inside face of the container, including epoxy paint from inside including refilling and disposing of surplus stuff within lead of 50 M, all labour and material charges, for laying and jointing of pipe assembly for inlet, outlet washout, over flow and bypass arrangement consisting of C.I. M.S. D/F. pipes, specials and valves of given diameters, providing and fixing accessories such as M.S. ladder inside and outside, Manhole frame and cover, water top slab, B.B. masonry chamber for all valves, ventilating shafts, including giving satisfactory hydraulic test and water tightness test as per IS code and providing three coats of cement paints to all exposed surface of structure including roof surface etc. complete as per design data, criteria, obligatory requirements and detailed specifications. Anti-termite treatment shall be given for underground portion of the structure.		
	Notes -		
1.	The design shall be in accordance with various relevant I.S. specification (I.S. 456/1978, I.S. 875-1987,I.S. 3370-1965 or revised.)		
2.	Only M.S. bars grade I conforming to I.S. 432 Part-I or high yield strength deformed bars conforming to I.S. 1786 or I.S. 1139 shall be used. Grade- II M.S. bars shall not be used.		
3.	Entire Structure Shall be in M-30 Only.		
4.	The scope of pipe assembly work shall be upto 5 metre beyond outside face of the wall, cost of pipes valves and specials is included in the rate along with labour cost for laying and jointing is included.		
5.	The G.S.R./Sump above 15 lakh litres capacity shall be in two compartment.		
6.	The Job ineludes designing the structure for uplift pressure and dewatering if required during entire execution and disposal of surplus excavated stuff within lead of 50 metres as directed by Engineer-in-charge.		
7.	G.S.R. outlets shall be with bell mouth of approved pattern in bottom slab and cost of designing bell mouth is included in the rate. Sump well includes cost of suction pit required at bottom.		
8.	Cost of pump house is not included in these rates.		
9.	75% part rate shall be payable for reinforcement, concrete and plastering items of all types of G.S.R.s and sumps till satisfactory hydraulic testing for water tightness test is given and till that work shall be treated as incomplete.		
23.1	R.C.C. Ground Service Reservoirs & Sumps		
23.1.1	Upto 25,000 Litres	Per lit	19.35
23.1.2	Cost of 25,000 Litres Capacity	Job	4,83,748.00
23.1.3	Add for capacity 25,000 to 50,000 Litres	per lit	11.48
23.1.4	Cost of 50,000 Litres Capacity	Job	7,70,682.00
23.1.5	Add for capacity 50,000 to 75,000 Litres	per lit	9.33
23.1.6	Cost of 75,000 Litres Capacity	Job	10,03,880.00
23.1.7	Add for capacity 75,000 to 1,00,000 Litres	per lit	8.26
23.1.8	Cost of 1,00,000 Litres Capacity	Job	12,10,287.00
23.1.9	Add for capacity 1,00,000 to 1,50,000 Litres	per lit	8.04
23.1.10	Cost of 1,50,000 Litres Capacity	Job	16,12,485.00

Item no.	Item Description	Unit	Rate (In Rs.)
23.1.11	Add for capacity 1,50,000 to 2,00,000 Litres	per lit	7.02
23.1.12	Cost of 2,00,000 Litres Capacity	Job	19,63,580.00
23.1.13	Add for capacity 2,00,000 to 3,00,000 Litres	per lit	6.49
23.1.14	Cost of 3,00,000 Litres Capacity	Job	26,12,883.00
23.1.15	Add for capacity 3,00,000 to 5,00,000 Litres	per lit	5.27
23.1.16	Cost of 5,00,000 Litres Capacity	Job	36,66,186.00
23.1.17	Add for capacity above 5,00,000 upto 10,00,000 Litres	per lit	4.67
23.1.18	Cost of 10,00,000 Litres Capacity	Job	59,99,196.00
23.1.19	Add for capacity above 10,00,000 to 15,00,000 Litres	per lit	3.64
23.1.20	Cost of 15,00,000 Litres Capacity	Job	78,21,538.00
23.1.21	Add for capacity above 15,00,000 Litres	per lit	2.95
Note- No additional payment shall be paid in case of change in the design for the given capacity.			

15. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tubewell works में Chapter-24 के आइटम क्र. 24.1 को निम्नानुसार प्रतिस्थापित किया जाता है :–

Item No	Item Description	Unit	Rate (In Rs.)
24.1	Designing and constructing RCC elevated service reservoirs of following capacity with RCC staging consisting of columns, internal and external bracings spaced vertically not more than 4.5 metres centre to centre for ESR having capacity upto 500 cum and not more than 6 m c/c for ESRs having capacity above 500 Cum including excavation in all types of strata, foundation concrete, cement plaster with water proofing compound to the inside face of the container including refilling disposing off the surplus stuff within a lead of 50 metres, all labour and material charges including lowering, laying, erecting, hoisting and jointing of pipe, assembly of inlet, outlet, washout, overflow and bypass arrangements as per departmental design, providing and fixing accessories such as M.S. ladder, Manhole frame and covers, water level indicators, lightening conductor, G.I. pipe railing around walk way and top slab, providing spiral stair case from ground level to roof level, M.S. grill gate of 2 M height with locking arrangement of approved design, B.B. masonry chambers for all valves, ventilating shafts, providing and applying three coats of cement paint to the structure including roof slab, epoxy painting to internal surface and anti-termite treatment for underground parts of the structure and giving satisfactory water tightness test as per I.S. code. The job to include painting the name of the scheme and other details on the reservoir as per the direction of Engineer-in-Charge.		
	Notes-		
1	The design of the structure be in accordance with relevant I.S. specification (I.S. 3370 - 1965 or revised.)		
2	The design shall satisfy the stipulations as per I.S. 1893 - 1984 and I.S. 13920 / 1993 for seismic force and I.S. - 11682 / 1985 for R.C.C. staging of overhead tanks.		
3	Provision of internal bracing is obligatory. External bracing is also obligatory.		
4	The entire structure shall be in M-30 mix only. (OPC Grade-43 Cements is to be use).		

Item No	Item Description	Unit	Rate (In Rs.)
5	Round mild steel bars grade - I Conforming to I.S. 432 Part-I or high yield strength deformed bars Conforming to I.S. 1786 shall be used. Grade-II mild steel bars will not be allowed.		
6	Irrespective of the type of foundation proposed in the design, one set of bracing be provided at the ground level.		
7	These rates include providing M.S. ladder for E.S.R.'s upto 2 lakh litres capacity and providing spiral staircase for E.S.R. above 2 lakh litres capacity.		
9	Staging shall have to be designed with stresses of M-25 for E.S.R. However, all RCC construction should be done in M-30.		
10	These rates are including the cost of uplift pressure if any and entire dewatering during execution. In case of water logging area where water is struck at shallow depth, extra provision of dewatering shall be made as per site conditions.		
11	75% part rate shall be payable for reinforcement concrete and plastering items of containers of E.S.R. till satisfactory hydraulic testing for water tightness is given and till that work shall be treated as incomplete.		
12	The rates indicated in the table are including the cost of pipes, specials and valves required for inlet, outlet, washout, overflow and bypass arrangement. The scope of work, however, includes cost of erecting, laying and jointing of pipes and valves including cost of jointing materials upto 5 M beyond outer face of outermost column.		
13	Below mentioned rates are for foundations with individual footing with bearing capacity of 20 tonnes per square metre. For raft foundations, these rates shall be increased by 7.5% where safe bearing capacity (SBC) is 5 MT per sqm and by 5% where SBC is more than 5 MT/sqm and upto 10 MT/sqm. This % of 5% or 7.5% is applicable for estimation of amount of lumpsum item of ESR.		
14	The rate shall be increased by 30% for bearing piles upto depth of 10 M and for further increased in depth by 5 M each, it shall be increased by another 10%. These rates are applicable where raft is not feasible. For pile foundations sulphate resistant cement shall only be used. Single pile for the column is not permitted, group of piles shall be designed with pile cap for each column of ESR.		
15	**The rates are applicable for staging height of 12m.** These rates shall be increased or decreased for per metre variation in this staging height as below.		
	12 to 16 m staging - 2% per metre.		
	16 to 20 m staging - 3% per metre		
	20 m and above - 4% per metre		
	i.e. for 17 m staging height Percentage calculation will be like below		
	12 to 16 m = 4 x 2 = 8%		
	16 to 17 m = 1 x 3 = 3%		
	Total = 11%		
	For 21 m staging height Percentage calculation will be like below.		
	12 to 16 m = 4 x 2 = 8%		
	16 to 20 m = 4 x 3 = 12%		

Item No	Item Description	Unit	Rate (In Rs.)
	20 to 21 m = 1 x 4 = 4%		
	Total = 24%		
24.1.1	upto 25,000 litres	Per Litre	39.02
24.1.2	Cost of 25,000 Litres capacity E.S.R.	Job	9,75,465.00
24.1.3	Add for capacity above 25,000 upto 50,000 litres	Per Litre	20.39
24.1.4	Cost of 50,000 Litres capacity E.S.R.	Job	14,85,227.00
24.1.5	Add for capacity above 50,000 upto 75,000 litres	Per Litre	14.40
24.1.6	Cost of 75,000 Litres capacity E.S.R.	Job	18,45,104.00
24.1.7	Add for capacity above 75,000 upto 1,00,000 litres	Per Litre	13.40
24.1.8	Cost of 1,00,000 Litres capacity E.S.R.	Job	21,80,003.00
24.1.9	Add for capacity above 1,00,000 upto 1,50,000 litres	Per Litre	10.57
24.1.10	Cost of 1,50,000 Litres capacity E.S.R.	Job	27,08,273.00
24.1.11	Add for capacity above 1,50,000 upto 2,00,000 litres	Per Litre	9.62
24.1.12	Cost of 2,00,000 Litres capacity E.S.R.	Job	31,89,433.00
24.1.13	Add for capacity above 2,00,000 upto 2,50,000 litres	Per Litre	8.53
24.1.14	Cost of 2,50,000 Litres capacity E.S.R.	Job	36,15,901.00
24.1.15	Add for capacity above 2,50,000 upto 3,00,000 litres	Per Litre	7.73
24.1.16	Cost of 3,00,000 Litres capacity E.S.R.	Job	40,02,252.00
24.1.17	Add for capacity above 3,00,000 upto 4,00,000 litres	Per Litre	7.58
24.1.18	Cost of 4,00,000 Litres capacity E.S.R.	Job	47,60,006.00
24.1.19	Add for capacity above 4,00,000 upto 5,00,000 litres	Per Litre	6.85
24.1.20	Cost of 5,00,000 Litres capacity E.S.R.	Job	54,45,500.00
24.1.21	Add for capacity above 5,00,000 upto 7,50,000 litres	Per Litre	6.67
24.1.22	Cost of 7,50,000 Litres capacity E.S.R.	Job	71,13,764.00
24.1.23	Add for capacity above 7,50,000 upto 10,00,000 Litres	Per Litre	6.75
24.1.24	Cost of 10,00,000 Litres capacity E.S.R.	Job	88,00,094.00
24.1.25	Add for capacity above 10,00,000 upto 15,00,000 Litres	Per Litre	6.02
24.1.26	Cost of 15,00,000 Litres capacity E.S.R.	Job	1,18,07,722.00
24.1.27	Add for capacity above 15,00,000 upto 20,00,000 ltrs	Per Litre	5.52
24.1.28	Cost of 20,00,000 Litres capacity E.S.R.	Job	1,45,68,489.00
Note- No additional payment shall be paid in case of change in the design for the given capacity.			

16. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–एक, Water Supply, Sewerage and Tubewell works में Chapter-24 के आइटम क्र. 24.3 SCADA and Instrumentation Items को निम्नानुसार जोड़ा जाता है :–

Item No	Item Description	Unit	Rate (In Rs.)
24.3	Supply, Installation, Testing and Commissioning of SCADA and Instrumentation Items. Cost of all the miscellaneous accessories (not limited to following) such as cable, earthing, grouting, etc. required to achieve purpose of smooth & trouble free operation for below items included in SOR price.		
24.3.1	**Ultrasonic Level Transmitter:** Supply, Installation, Testing, Commissioning of **Ultrasonic Level Transmitter-Non contact type** for water sump/MBR/ ESR/ Back Wash Water Tank/ - **Transmitter:** Type-Ultrasonic, Principle-Pulse time of flight, Output - 4-20 mA /RS485, Housing - Die Cast Aluminum, Ingress Protection- IP67, Accuracy - +/-4 mm or 0.2 % (whichever is greater), Area classification-Non Hazardous, Temperature range- 0 to 50° C, Display- 4 line LCD display **Sensor:** Temperature- 0 to 60° C, Material- PVDF/PP, Seal-EPDM, Degree of Protection- IP67 or above		
24.3.1.1	Range (0 to 5) meters	1	48000
24.3.1.2	Range (0 to 8) meters	1	52000
24.3.2	**Radar Level Transmitter:** Supply, Installation, Testing, Commissioning of **Radar Level Transmitter-Non contact type** for water sump/MBR/ ESR/ Back Wash Water Tank/ - of **(range 0 - 30 m)** **Transmitter:** Type-Microwave Level Measurement, Principle-Pulse time of flight, Output - 4-20 mA /RS485, Housing - Die Cast Aluminum, Ingress Protection- IP67, Accuracy - +/-3 mm, Temperature range- 0 to 60° C, Display- 4 line LCD display **Sensor:** Material- Sensor shaft : PVC / PPS GF40 Optical window : sapphire Cable : TPEO , Seal-VITON/EPDM, Degree of Protection- IP67 or above	1	80000
24.3.3	**Turbidity Analyzer (Range 0-400 NTU or above as per site requirement):** Supply, Installation, Testing, Commissioning of **Turbidity Analyzer** for raw water and treated water of WTP **Transmitter:** Type-Turbidity Transmitter, Principle-Nephelometric measuring principle 90° scattered light according to ISO7027/ EN 27027 or equivalent, Output - 4-20 mA /RS485, Supply Voltage- 12-48 Volt, Material-Field Housing:ABS PC / PC FR (shall be Non corrosive type), Ingress Protection- IP66 or above, Temperature range- 0 to 50° C, Display- LCD display **Sensor:** Material- Sensor shaft : PVC / PPS GF40 Optical window : sapphire Cable : TPEO , Seal-VITON/EPDM, Ingress Protection- IP68, Temperature range- 0 to 50 C, Measurement error- <2% of measuring value or 0.1 NTU, connection- fixed cable connection, Flow Through Assembly- Original Equipment Manufacturer	1	232000
24.3.4	**pH Analyzer with Temperature Compensation (Range 0-14):** Supply, Installation, Testing, Commissioning of **pH Analyzer** for raw water and treated water of WTP **Transmitter:** Type-Glass electrode pH Transmitter, Principle-Glass electrode with dirt repellent PTFE diaphragm, Output - 4-20 mA /RS485, Supply Voltage- 12-48 Volt, Material-Field Housing : ABS Polycarbonate non corrosive, Ingress Protection- IP66 or above, Temperature range- 0 to 50° C, Display- LCD/LED display, Diagnostic Feature- Required 3 point calibration **Sensor:** Material- Glass, Ingress Protection- IP68, Temperature range- 0 to 50 C, Measurement error- +/-0.5% of measuring range, connection- Analog cable connection, Flow Through Assembly- Original Equipment Manufacturer, Temperature Sensor-NTC/PT100	1	88000

24.3.5	**Residual Chlorine Analyzer with pH Compensation (Range 0-5 PPM):** Supply, Installation, Testing, Commissioning of **Residual Chlorine Analyzer** **Transmitter:** Type-Residual chlorine with pH compensation , Principle-Amperometric measurement of free chlorine, Output - 4-20 mA /RS485, Supply Voltage- 12-48 Volt, Material-Field Housing : ABS PC Fr, ABS Polycarbonate non corrosive, Ingress Protection- IP66 or above, Temperature range- 0 to 50° C, Display- LCD/LED display, Diagnostic Feature- Required 3 point calibration **Sensor:** Material- Sensor shaft : PVC & Membrane: PTFE & Membrane cap:PBT (GF30);PVDF, Ingress Protection- IP68, Temperature range- 0 to 50 C, Measurement error- +/-0.5% of measuring range, connection- Analog cable connection, Flow Through Assembly- Original Equipment Manufacturer	1	234000
24.3.6	**Pressure Transmitter (0-16 Bar):** Supply, Installation, Testing, Commissioning of **Pressure Transmitter** for Clear/Raw water pumps/common header/ESR inlet-Diaphragm Material- SS316 or equivalent, Supply voltage-12 to 48 VDC, Output - 4-20 mA /RS485, Housing - Die Cast Aluminum, Ingress Protection- IP67, Accuracy - +/-0.1%, Temperature range- 0 to 60° C, Display- LCD display (as per site requirement)	1	20000
24.3.7	**Power Analyser/Multifunctional Meter:** Supply, Installation, Testing, Commissioning of Power Analyser/Multifunctional Meter interfacing to PLC Panel with modbus communication port , as per IEC 62053 and in the prescribed format including mounting arrangement.	1	11000
24.3.8	**RTU Panel for ESR/GSR/Sump/ Other Remote location:** Supply, Installation, Testing, Commissioning of indoor type RTU/PLC panel fabricated out of min. 2 mm thick CRCA sheet powder coated. The Panel shall be provided with reputed make PLC with following accessories as well as input output configuration. The PLC shall be programmed with IEC 61131 standards for control, monitoring and communication of equipment & instruments at GSR/ESR Tank. RTU/PLC Panel 1 no. Ethernet port, 1 no. RS-485, modem, 4G connectivity, online UPS of 1 KVA, surge protection, earthing kit and cable & protocol for Modbus TCP communication with following IO and accessories DI – 4 num DO – 4 num AI –6 num LED Level Indicator MCB 4A DP – 4 num 12- 48 VDC Power Supply Emergency PB – 1 num Panel Cooling Fan – 1 num Panel Light with Door Switch – 1 num Wiring + TB etc – 1 lot Hardware – 1 lot	1	108000

भाग–2
(Building Works)

17. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–दो, Building Works में Chapter-11 में निम्नानुसार आइटम 11.43.3 जोड़ा जाता है:–

Item No.	Item Description	Unit	Rate (In Rs.)
11.43.3	Laying Paver Block		
	Laying old cement concrete interlocking paver blocks of anydesign/shape laid in required line, level, curvature, colour and pattern over and including 50mm thick compacted bed of sand, filling the joints with sand including cost of paint, etc all complete as per the direction of Engineer-in-charge.	Sqm.	142

18. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–दो, Building Works में Chapter-11 में निम्नानुसार आइटम 11.46 जोड़ा जाता है:–

Item No.	Item Description	Unit	Rate (In Rs.)
11.46	Granite Work in Flooring (Mirror polished pre moulded granite flooring18 mm thick)		
	Providing and laying gang saw cut 18 mm thick, mirror polished premoulded (wherever required) and pre polished machine cut granite stonework in flooring of required size shape of approved shade, color and texture in flooring laid over 20 mm thick base of cement mortar 1:4 (1 Cement: 4 sand) including grouting the joints with white cement mixed with matching pigments epoxy touch ups etc. complete as per direction of Engineer-in-Charge.		
11.46.1	Area of Slab over 0.50 Sqm.		
11.46.1.1	Fine grained granite dark Black/ dark Red/ White or equivalent with self-design/ pattern/ crystals of other colors of glitter	Sqm.	1876.00
11.46.1.2	Coarse grained granite light Black/light Red/ off White or equivalent with self-design/ pattern/crystals of other colors of glitter	Sqm.	1772.00
11.46.2	Area of Slab upto 0.50 Sqm.		
11.46.2.1	Fine grained granite dark Black/ dark Red/ White or equivalent with self-design/ pattern/ crystals of other colors of glitter	Sqm.	2053.00
11.46.2.2	Coarse grained granite dark Black/dark Red/ White or equivalent with self-design/ pattern/crystals of other colors of glitter	Sqm.	1939.00

19. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–दो, Building Works में Chapter-17 में निम्नानुसार आइटम 17.22 जोड़ा जाता है:–

Item No.	Item Description	Unit	Rate (In Rs.)
17.22	Aluminum Composite Panel (ACP)		
	Designing, fabricating, testing, installing and fixing in position Curtain Wall with Aluminum Composite Panel (ACP) Cladding, with open grooves for linear as well as curvilinear portions of the building, for all heights and all levels etc. including: a) Structural analysis and design and preparation of shop drawings for pressure equalization or rain screen principle as required, proper drainage of water to make it watertight including checking of all the structural and functional design. b) Providing, fabricating and supplying and fixing panels of		

Item No.	Item Description	Unit	Rate (In Rs.)
	aluminum composite panel cladding in pan shape in metallic color of approved shades. The aluminum composite panel cladding sheet shall be coil coated, with kynar 500 based PVDF / fluoropolymer resin coating of approved color and shade on face # 1 and polymer (Service) coating on face # 2 as specified using stainless steel screws, nuts, bolts, washers, cleats, weather silicone sealant, backer rods etc. e) The fastening brackets of Aluminum alloy 6005 T5 / MS with Hot Dip Galvanized with serrations and serrated washers to arrest the wind load movement, fasteners, SS 316 Pins and anchor bolts in SS 316, Nylon separators to prevent bi-metallic contacts all complete required to perform as per specification and drawing The item includes cost of all material and labour component, the cost of all mock ups at site, cost of all samples of the individual components for testing in an approved laboratory, field tests on the assembled working curtain wall with aluminum composite panel cladding, cleaning and protection of the curtain wall with aluminum composite panel cladding till the handing over of the building for occupation. Base frame work for ACP cladding is payable under the relevant aluminum items. The Contractor shall provide curtain wall with aluminum composite panel cladding, having all the performance characteristics all complete, as per the Architectural drawings, as per item description, as specified, as per the approved shop drawings and as directed by the Engineer- in-Charge. However, for the purpose of payment, only the actual area on the external face of the curtain wall with Aluminum Composite Panel Cladding (including width of groove) shall be measured in sqm. upto two decimal places.		
17.22.1	4mm (0.5 mm Sheet)		
	4 mm thick aluminum composite panel material consisting of 3 mm thick FR grade mineral core sandwiched between two aluminum sheets (each 0.5mm thick)	Sqm.	3230.00
17.22.2	4mm (0.25 mm Sheet)		
	4 mm thick aluminum composite panel material consisting of 3.5 mm thick FR grade mineral core sandwiched between two aluminum sheets (each 0.25mm thick)	Sqm.	3023.00
17.22.3	3 mm (0.25mm sheet)		
	3 mm thick aluminum composite panel material consisting of 2.5 mm thick FR grade mineral core sandwiched between two aluminum sheets (each 0.25mm thick)	Sqm.	2816.00

भाग–3
(Roads & Bridge)

20. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–तीन, Road & Bridge के Chapter-3 में निम्नानुसार आइटम 3.21 and 3.22 जोड़ा जाता है :–

Item No.	Item Description	Unit	Rate (In Rs.)
3.21	Milling of bituminous pavement to depth up to 50 mm by cold milling machine including all levelling and slope sensors, self-loading of milled material by discharge conveyor including lead up to 5 km and cleaning of the milled surface as directed by the engineer-in-charge.	Sqm	82
3.22	Milling of bituminous pavement to depth up to 51-100 mm by cold milling machine including all levelling and slope sensors, self-loading of milled material by discharge conveyor including lead up to 5 km and cleaning of the milled surface as directed by the engineer-in-charge.	Sqm	101

21. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–तीन, Road and Bridge works में Chapter-6 में आइटम क्र. 6.2 को निम्नानुसार प्रतिस्थापित किया जाता है :–

Chapter -6 Cement Concrete Pavements			
Item No.	**Item Description**	**Unit**	**Rate (in Rs.)**
6.2	Construction of dowel jointed, plain cement concrete pavement in M-30 grade concrete over a prepared sub base with 43 grade cement maximum size of coarse aggregate not exceeding 25 mm, mixed in a batching and mixing plant as per approved mix design, transported to site, laid with a fixed form or slip form paver with electronic sensor, spreading the concrete by shovels, rakes compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, and longitudinal joints, joint filler, separation membrane, sealant primer, joint sealant, debonding strip, placing of dowel bar,tie rod admixtures as approved, curing compound, finishing to lines and grades as per approved drawings as per IRC-15 2002 and as per relevant clauses of section-602 of specifications complete but excluding cost fo steel in dowel ber & tie rod etc.	Cum	5583.00

22. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–तीन, Road & Bridge में Chapter-17 जोड़ा जाता है :–

Chapter- 17 CULVERTS and DRAIN			
Item No.	**Item Descriptions**	**Unit**	**Rate (In Rs.)**
17.1	Providing and Laying Reinforced cement concrete pipe NP4/prestrssed concrete pipe for culverts on first class bedding of granular material (cost of bedding included) in single row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets.		
(A)	1000 mm dia	Metre	7012.00
(B)	1200 mm dia	Metre	9544.00
(C)	1500 mm dia	Metre	11544.00
17.2	Providing and Laying Reinforced cement concrete pipe NP4/prestressed concrete pipe for culverts on first class bedding of granular material (cost of bedding included) in double row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets		

(A)	1000 mm dia	Metre	14168.00
(B)	1200 mm dia	Metre	19242.00
(C)	1500 mm dia	Metre	21242.00
17.3	Providing and Laying Reinforced cement concrete pipe NP4 / prestrssed concrete pipe for culverts on first class bedding of granular material (cost of bedding included) in triple row including fixing collar with cement mortar 1:2 but excluding excavation, protection works, backfilling, concrete and masonry works in head walls and parapets and as per relevant clauses of section-2900.		
(A)	1000 mm dia	Metre	20944.00
(B)	1200 mm dia	Metre	28632.00
(C)	1500 mm dia	Metre	30632.00
17.4	Add for every additional row in item 9.4 above		
(A)	1000 mm dia	Metre	6826.00
(B)	1200 mm dia	Metre	9338.00
(C)	1500 mm dia	Metre	11338.00
17.5	Providing concrete craddle bedding in M-15 grade concrete as per clause 2900 and as per section 1700 and 2900.	Cum	4195.00
17.6	Deduction for not providing the first class bedding (in case sand is available in the bed or the concrete craddle is provided as per item 9.6 above) in item No.9.2., 9.3, 9.4 & 9.5 above.	Cum	514.00
17.7	Providing P.C.C. M-15 Nominal mix for hume pipe culverts in foundation and sub structure etc. as per drawing and as perrelevant clauses of section 1500, 1700, 2100 and 2900.	Cum	4617.00
17.8	Providing and placing in position factory-made precast cement concrete Box-Culvert as per design and shape, using coarse aggregate and fine aggregate derived from natural sources, ordinary Portland/ admixtures as per design mix IS: 456-2000 and standard like Indian standard international standard viz. japaness industrial standard (JIS) /US standard/ EU standard having of strength not less than M-50, using Thermo-Mechanically Treated bars,(TMT/TMX) FE 500D or more conforming to IS 1786 reinforcement bar and capable of carrying a wheel load of 32.5 Tones with earth cushion 0.20 m to 0.50 m for heavy vehicle movement. Rate includes all cost of material, labor charges at the plant, cost of reinforcement, formwork and lifting accessories, and transportation up to work at the site. Making necessary holes of required sizes for carrying through service lines etc. providing steel hooks for lifting etc. the work to be executed as per the direction of Engineer in-Charge.		
(i)	Box Culvert Size 500x500 mm Th 120mm	RM	10818.00
(ii)	Box Culvert Size 600x600 mm Th 120mm	RM	12096.00
(iii)	Box Culvert Size 800x800 mm Th 120 mm	RM	14759.00
(iv)	Box Culvert Size 600x1000 mm Th 130 mm	RM	16985.00
(v)	Box Culvert Size 900x1000 mm Th 130 mm	RM	19350.00
(vi)	Box Culvert Size 1000x1000 mm Th 130 mm	RM	20209.00
(vii)	Box Culvert Size 1200x1000 mm Th 130 mm	RM	21821.00
(viii)	Box Culvert Size 800x1400 mm Th 130 mm	RM	19142.00
(ix)	Box Culvert Size 900x1400 mm Th 130 mm	RM	19781.00
(x)	Box Culvert Size 1000x1400 mm Th 130 mm	RM	20556.00
(xi)	Box Culvert Size 1100x1400 mm Th 130 mm	RM	21300.00
(xii)	Box Culvert Size 1200x1400 mm Th 130 mm	RM	21938.00
(xiii)	Box Culvert Size 1300x1400 mm Th 150 mm	RM	23486.00
(xiv)	Box Culvert Size 1400x1400 mm Th 150 mm	RM	24229.00
(xv)	Box Culvert Size 1500x1400 mm Th 150 mm	RM	24973.00
(xvi)	Box Culvert Size 2000x1200 mm Th 180 mm	RM	40601.00
(xvii)	Box Culvert Size 2000x1500 mm Th 180 mm	RM	42883.00
(xviii)	Box Culvert Size 2000x1800 mm Th 180 mm	RM	45076.00
(xix)	Box Culvert Size 2000x2000 mm Th 180 mm	RM	46651.00
(xx)	Box Culvert Size 2500x1500 mm Th 220 mm	RM	52227.00

(xxi)	Box Culvert Size 2500x1800 mm Th 220 mm	RM	54727.00
(xxii)	Box Culvert Size 2500x2000 mm Th 220 mm	RM	56412.00
(xxiii)	Box Culvert Size 2500x2500 mm Th 220 mm	RM	60542.00

भाग–4
(Electrical Works)

23. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–चार, Electrical Works के Chapter-8 के आइटम 8.1 से 8.12 को निम्नानुसार प्रतिस्थापित किया जाता है:–

MCCB'S, ISOLATORS, MCB'S, MCB-DB AND FIXING

Item No.	Item Description	Unit	Rates (in Rs.)
8	Supplying of ISI Marked Moulded Case Circuit Breaker (MCCB) suitable for 3 phase,3 pole, 50 Hz, 415 Volts, AC supply with respective interrupting capacity (KA) at 415 Volts cited against their range standard conforming to IS - 8828		
8.1	MCCB with Breaking Capacity 25 KA at 415 V		
1	Current Rating -25 to100 Amps & 70% -100% adjustable	Each	4521.00
2	Current Rating -125 Amps & 70% -100% adjustable	Each	6042.00
3	Current Rating -160 Amps & 70% -100% adjustable	Each	8066.00
4	Current Rating -200 Amps & 70% -100% adjustable	Each	8306.00
8.2	MCCB with Breaking Capacity 35 KA at 415 V		
1	Current Rating -160 Amps & Adjustable: 70% -100% thermal & 5-10 times magnetic setting	Each	12321.00
2	Current Rating -200 Amps & Adjustable: 70% -100% thermal & 5-10 times magnetic setting	Each	13334.00
3	Current Rating -250 Amps & Adjustable: 70% -100% thermal & 5-10 times magnetic setting	Each	16488.00
4	Current Rating -315 Amps & Adjustable: 70% -100% thermal & 5-10 times magnetic setting	Each	19578.00
5	Current Rating -400 Amps & Adjustable: 70% -100% thermal & 4-10 times magnetic setting	Each	20238.00
6	Current Rating -500/630 Amps & Adjustable: 70% -100% thermal & 4-10 times magnetic setting	Each	20775.00
7	Current Rating -800 Amps & Adjustable: 70% -100% thermal & 4-10 times magnetic setting	Each	26982.00
8.3	MCCB with Breaking Capacity 50 KA at 415 V		
1	Current Rating -400 Amps & Adjustable: 70% -100% thermal & 4-10 times magnetic setting	Each	21504.00
2	Current Rating -500/630 Amps & Adjustable: 70% -100% thermal & 4-10 times magnetic setting	Each	22584.00
3	Current Rating -800 Amps & Adjustable: 70% -100% thermal & 4-10 times magnetic setting	Each	27551.00

Item No.	Item Description	Unit	Rates (in Rs.)
8.4	Supplying of ISI Marked Air Circuit Breaker (ACB) with Microprocessor release with LCD screen showing kW ,kVA,PF,maximum demand with breaking capacity of 50 kA , 4 pole , 415 Volts conforming to IEC : 60947-2 / IS :13947-II		
1	630 Amp,manual,fixed	Each	70550.00
2	800 Amp,manual,fixed	Each	69054.00
3	1000 Amp,manual,fixed	Each	70936.00
4	1250 Amp,manual,fixed	Each	101200.00
5	1600 Amp,manual,fixed	Each	111514.00
6	2000 Amp,manual,fixed	Each	126466.00
7	630 Amp,manual,drawout	Each	109023.00
8	800 Amp,manual,drawout	Each	111497.00
9	1000 Amp,manual,drawout	Each	121402.00
10	1250 Amp,manual,drawout	Each	158444.00
11	1600 Amp,manual,drawout	Each	159480.00
12	2000 Amp,manual,drawout	Each	194878.00
8.5	Supplying of ISI Marked and accepted standard of Miniature Circuit Breaker (MCB) of "C" series suitable for 240/415 Volts, 50 Cycle , 10 kA Value AC supply confirming to IS : 8828 : 1996, IEC : 60898 :2002 but without enclosures :-		
8.5.1	SINGLE POLE (SP)		
1	0.5 Amp to 5 Amp Rating	Each	214.00
2	6 Amp to 32 Amp Rating	Each	98.00
3	For 40 Amps. Rating only.	Each	184.00
4	50 Amp to 63 Amp Rating	Each	210.00
8.5.2	SINGLE POLE & NEUTRAL(SPN)		
1	0.5 Amp to 5 Amp Rating	Each	500.00
2	6 Amp to 32 Amp Rating	Each	282.00
3	For 40 Amps. Rating only.	Each	384.00
4	50 Amp to 63 Amp Rating	Each	416.00
8.5.3	DOUBLE POLE (DP)		
1	0.5 Amp to 5 Amp Rating	Each	608.00
2	6 Amp to 32 Amp Rating	Each	298.00
3	For 40 Amps. Rating only.	Each	404.00
4	50 Amp to 63 Amp Rating	Each	476.00
8.5.4	FOR TRIPLE POLE (TP)		
1	0.5 Amp to 5 Amp Rating	Each	873.00
2	6 Amp to 32 Amp Rating	Each	527.00
3	For 40 Amps. Rating only.	Each	694.00
4	50 Amp to 63 Amp Rating	Each	784.00
8.5.5	FOR TRIPLE POLE & NEUTRAL(TPN)		
1	0.5 Amp to 5 Amp Rating	Each	1204.00

Item No.	Item Description	Unit	Rates (in Rs.)
2	6 Amp to 32 Amp Rating	Each	639.00
3	For 40 Amps. Rating only.	Each	836.00
4	50 Amp to 63 Amp Rating	Each	894.00
8.5.6	FOUR POLE(FP)		
1	0.5 Amp to 5 Amp Rating	Each	1204.00
2	6 Amp to 32 Amp Rating	Each	784.00
3	For 40 Amps. Rating only.	Each	894.00
4	50 Amp to 63 Amp Rating	Each	993.00
8.4.(B)	Supplying of MCB Isolators suitable for 240/415 Volts, 50 Hz AC supply with KA value rating 10 kA confirming to IS :13947-Part III : 1993 & IEC :60947- 3:2001 (without enclosures) :-		
8.4.1	SINGLE POLE		
1	40 Amps.	Each	196.00
2	63 Amps.	Each	221.00
8.4.2	DOUBLE POLE		
1	40 Amps.	Each	318.00
2	63 Amps.	Each	384.00
8.4.3	TRIPLE POLE		
1	40 Amps.	Each	542.00
2	63 Amps.	Each	597.00
8.4.4	FOUR POLE		
1	40 Amps.	Each	653.00
2	63 Amps.	Each	732.00
3	80 Amps.	Each	752.00
4	100 Amps.	Each	727.00
8.5.(B)	Supply of powder coated sheet steel encloser SPN MCB DB inclusive of Busbar, Neutral bar, Earth bar & two earth terminals etc. complete as per IS:13032(exclusive of MCB & isolator)-		
1	2 way single door	Each	82.00
2	4 way single door	Each	368.00
3	4 way double door	Each	609.00
4	6 way double door	Each	714.00
5	8 way double door	Each	771.00
6	12 way double door	Each	976.00
7	16 way double door	Each	1233.00
8.6	Supplying of TPN MCB DB Metal Double Door with provision for FP MCB/Isolator/RCCB/RCBO as incomer and SP MCBs as outgoing inclusive of Busbar, Neutral bar, Earth bar & two earth terminals etc. complete as per IS:13032(exclusive of MCB & isolator):		
1	4 way (4+12)	Each	1502.00
2	6 way (4+18)	Each	1836.00
3	8 way (4+24)	Each	2392.00

Item No.	Item Description	Unit	Rates (in Rs.)
4	4 way (8+12)	Each	1502.00
5	6 way (8+18)	Each	1836.00
6	8 way (8+24)	Each	2392.00
7	12 way (8+36)	Each	3246.00
8.7	Supplying of Vertical TPN MCB DB Metal Double Door with provision for FP CB/Isolator/RCCB/RCBO as incomer and SP/TP MCBs as outgoing inclusive of Busbar, Neutral bar, Earth bar & two earth terminals etc. complete as per IS:13032(exclusive of MCB & isolator)		
1	4 way (8+12)	Each	3983.00
2	6 way (8+24)	Each	4353.00
3	12 way (8+36)	Each	6267.00
8.8	Supplying of powder coated Vertical TPN MCB DB Metal Double Door with MCCB 100A TP 10kA as incomer and space for SP/TP MCBs as outgoing (without MCBs) inclusive of busbar &connections etc without MCB:		
1	4 way with MCCB	Each	8123.00
2	8 way with MCCB	Each	8614.00
3	12 way with MCCB	Each	10425.00
8.9	Supplying & fixing of Industrial type metal plug & socket DBs (without MCB) SPN sheet encloser (dust protected) inclusive of 2 pole and earth metal plug and socket and space to incorporate SP MCB complete as per specification as required.		
1	10 Amps	Each	707.00
2	20 Amps	Each	701.00
8.10	Supplying & fixing of ISI marked Industrial type metal plug socket D.B.s (without MCBs) for TPN encloser three pole and earth metal plug and socket including space incorporating TP MCB complete as per specification as required.		
1	20 Amps	Each	1349.00
2	30 Amps	Each	1858.00
8.11	Supply & fixing of Industrial type metal plug & socket, 3 pin (2P + E) conforming to IEC : 60309 -1&3 complete as per specification		
1	10 Amps Plug only	Each	111.00
2	10 Amps socket only	Each	114.00
3	20 Amps Plug only	Each	118.00
4	20 Amps socket only	Each	141.00
8.12	Supplying and installing of RCBOs (Residual current circuit breaker with overload and short circuit protection) ISI marked complete as per I.S. standard confirming to IEC:61009-2-1 & IS:12640-2:2001,240/415V 50 Hz with 10 kA short circuit withstand capacity for earth leakage, overload & short circuit protection including connection in existing enclosure in approved manner as per specification.		
8.12.1	DP(4 module)		
1	2 pole 6 to 25 Amps, 30 mA sensitivity	Each	2016.00
2	2 pole 32 Amps, 30 mA sensitivity	Each	2138.00

Item No.	Item Description	Unit	Rates (in Rs.)
3	2 pole 40 Amps, 30 mA sensitivity	Each	2080.00
4	2 pole 63 Amps, 30 mA sensitivity	Each	3902.00
5	2 pole 6 to 25 Amps, 100 mA sensitivity	Each	1988.00
6	2 pole 32 Amps, 100 mA sensitivity	Each	2168.00
7	2 pole 40 Amps, 100 mA sensitivity	Each	2336.00
8	2 pole 63 Amps, 100 mA sensitivity	Each	4161.00
8.12.2	FP(8 module)		
1	4 pole 16 Amps, 30 mA sensitivity	Each	3884.00
2	4 pole 25-32 Amps, 30 mA sensitivity	Each	4037.00
3	4 pole 40 Amps, 30 mA sensitivity	Each	3766.00
4	4 pole 63 Amps, 30 mA sensitivity	Each	4965.00
5	4 pole 16 Amps, 100/300 mA sensitivity	Each	3965.00
6	4 pole 25-32 Amps, 100/300 mA sensitivity	Each	4119.00
7	4 pole 40 Amps, 100/300 mA sensitivity	Each	4119.00
8	4 pole 63 Amps, 100/300 mA sensitivity	Each	4767.00

24. पुनरीक्षित एकीकृत मानक दर अनुसूची (ISSR) के भाग–चार, Electricals Works क Chapter-14 के आइटम 14.1 से 14.2 को निम्नानुसार प्रतिस्थापित किया जाता है:–

POWER CABLES & LAYING

Item No.	Item Description	Unit	Rates (in Rs.)
14.1	Supply of XLPE Insulated power cable (conforming IS-7098) 1100 Volt grade/Heavy duty power cable conforming to IS 1554-1100 Volts grade, 2 core /3½ core/4 coreISI MARKED with Alu. Stranded /solid conductor		
14.1.1	UNARMOURED 2 Core		
1	2.5 Sq.mm.(Heavy Duty)	meter	56.00
2	4 Sq.mm.((Heavy Duty)	meter	47.00
3	6 Sq.mm.(XLPE)	meter	54.00
4	10 Sq.mm.(XLPE)	meter	63.00
5	16 Sq.mm.(XLPE)	meter	75.00
14.1.2	ARMOURED 2 Core		
1	2.5 Sq.mm.(Heavy Duty)	meter	65.00
2	4 Sq.mm.(Heavy Duty)	meter	72.00
3	6 Sq.mm.(XLPE)	meter	84.00
4	10 Sq.mm.(XLPE)	meter	98.00
5	16 Sq.mm.(XLPE)	meter	114.00
14.1.3	UNARMOURED 3 Core		
1	6 Sq.mm.(XLPE)	meter	59.00
2	10 Sq.mm.(XLPE)	meter	77.00
3	16 Sq.mm.(XLPE)	meter	98.00
4	25 Sq.mm(XLPE)	meter	142.00

Item No.	Item Description	Unit	Rates (in Rs.)
5	35 Sq.mm(XLPE)	meter	171.00
6	50 Sq.mm(XLPE)	meter	223.00
7	70 Sq.mm(XLPE)	meter	309.00
8	95 Sq.mm.(XLPE)	meter	380.00
14.1.4	ARMOURED 3 Core		
1	6 Sq.mm.(XLPE)	meter	91.00
2	10 Sq.mm.(XLPE)	meter	115.00
3	16 Sq.mm.(XLPE)	meter	123.00
4	25 Sq.mm(XLPE)	meter	164.00
5	35 Sq.mm(XLPE)	meter	197.00
6	50 Sq.mm(XLPE)	meter	247.00
7	70 Sq.mm(XLPE)	meter	332.00
8	95 Sq.mm.(XLPE)	meter	753.00
14.1.5	UNARMOURED 3½ CORE		
1	25 Sq.mm(XLPE)	meter	162.00
2	35 Sq.mm(XLPE)	meter	193.00
3	50 Sq.mm(XLPE)	meter	257.00
4	70 Sq.mm(XLPE)	meter	353.00
5	95 Sq.mm.(XLPE)	meter	440.00
6	120 Sq.mm.(XLPE)	meter	553.00
7	150 Sq.mm.(XLPE)	meter	666.00
8	185 Sq.mm.(XLPE)	meter	839.00
9	240 Sq.mm.(XLPE)	meter	1066.00
10	300 Sq.mm.(XLPE)	meter	1311.00
11	400 Sq.mm.(XLPE)	meter	1653.00
14.1.6	ARMOURED 3½ CORE		
1	25 Sq.mm(XLPE)	meter	185.00
2	35 Sq.mm(XLPE)	meter	219.00
3	50 Sq.mm(XLPE)	meter	285.00
4	70 Sq.mm(XLPE)	meter	387.00
5	95 Sq.mm.(XLPE)	meter	468.00
6	120 Sq.mm.(XLPE)	meter	584.00
7	150 Sq.mm.(XLPE)	meter	691.00
8	185 Sq.mm.(XLPE)	meter	861.00
9	240 Sq.mm.(XLPE)	meter	1085.00
10	300 Sq.mm.(XLPE)	meter	1328.00
11	400 Sq.mm.(XLPE)	meter	1690.00
14.1.7	UNARMOURED 4 CORE		
1	6 Sq.mm.(XLPE)	meter	72.00
2	10 Sq.mm.(XLPE)	meter	91.00
3	16 Sq.mm.(XLPE)	meter	121.00
4	25 Sq.mm(XLPE)	meter	172.00
5	35 Sq.mm(XLPE)	meter	216.00
6	50 Sq.mm(XLPE)	meter	283.00
7	70 Sq.mm(XLPE)	meter	393.00

Item No.	Item Description	Unit	Rates (in Rs.)
8	95 Sq.mm.(XLPE)	meter	492.00
9	120 Sq.mm.(XLPE)	meter	613.00
10	150 Sq.mm.(XLPE)	meter	761.00
14.1.8	ARMOURED 4 CORE		
1	6 Sq.mm.(XLPE)	meter	121.00
2	10 Sq.mm.(XLPE)	meter	129.00
3	16 Sq.mm.(XLPE)	meter	147.00
4	25 Sq.mm(XLPE)	meter	199.00
5	35 Sq.mm(XLPE)	meter	244.00
6	50 Sq.mm(XLPE)	meter	315.00
7	70 Sq.mm(XLPE)	meter	426.00
8	95 Sq.mm.(XLPE)	meter	519.00
9	120 Sq.mm.(XLPE)	meter	637.00
10	150 Sq.mm.(XLPE)	meter	784.00
14.2	Supply of approved HighTension XLPE cable 11kVgrade as per ISI standard 3 core Armoured with Alu. Solid/stranded conductor ISI MARKED as required		
14.2.1	XLPE CABLE 11 KV GRADE		
1	50 Sq.mm	meter	574.00
2	70 Sq.mm	meter	682.00
3	95 Sq.mm.	meter	805.00
14.2.2	XLPE CABLE 33 KV GRADE		
1	50 Sq.mm	meter	631.00
2	70 Sq.mm	meter	750.00
3	95 Sq.mm.	meter	886.00

(शासन द्वारा अनुमोदित)

(सुरेश सेजकर)
प्रमुख अभियंता
नगरीय प्रशासन एवं विकास
म.प्र., भोपाल

पृ.क्रमांक/यां.प्र./07/2024/8215 भोपाल, दिनांक– 05-07-24

प्रतिलिपिः– सूचनार्थ एवं आवश्यक कार्यवाही हेतु।

1. निज सचिव माननीय मंत्री, मध्यप्रदेश शासन, नगरीय विकास एवं आवास विभाग, म.प्र.।
2. प्रमुख सचिव, म.प्र. शासन, नगरीय विकास एवं आवास विभाग म.प्र.।
3. आयुक्त, संचालनालय, नगरीय प्रशासन एवं विकास म.प्र. भोपाल।
4. आयुक्त, गृह निर्माण एवं अधोसंचना विकास मण्डल, म.प्र. भोपाल।
5. आयुक्त, नगर तथा ग्राम निवेश म.प्र. भोपाल।
6. प्रमुख अभियंता, लोक निर्माण विभाग म.प्र. भोपाल।
7. प्रमुख अभियंता, जल संसाधन विभाग म.प्र. भोपाल।
8. प्रमुख अभियंता, ग्रामीण यांत्रिकी सेवा म.प्र. भोपाल।
9. प्रमुख अभियंता, लोक स्वास्थ्य यांत्रिकी विभाग म.प्र. भोपाल।
10. प्रमुख अभियंता, म.प्र. अर्बन डेब्लपमेंट कंपनी लि. भोपाल।
11. प्रमुख अभियंता, म.प्र. मेट्रो रेल कार्पोरेशन लि. भोपाल।
12. मुख्य अभियंता, लोकायुक्त कार्यालय, मध्यप्रदेश, भोपाल।
13. परियोजना निदेशक, म.प्र. जल निगम मर्यादित भोपाल।

14. समस्त आयुक्त, नगर पालिक निगम म.प्र.।
15. समस्त मुख्य कार्यपालन अधिकारी, स्मार्ट सिटी कंपनी, म.प्र.।
16. मुख्य कार्यपालन अधिकारी, समस्त विकास प्राधिकरण, म.प्र.।
17. समस्त संभागीय संयुक्त संचालक, नगरीय प्रशासन एवं विकास म.प्र.।
18. समस्त अधीक्षण यंत्री/कार्यपालन यंत्री, नगरीय प्रशासन एवं विकास म.प्र.।
19. समस्त मुख्य नगर पालिका अधिकारी, नगर पालिका परिषद/नगर परिषद म.प्र.।
20. उप संचालक, आई.टी. सेल, संचालनालय, नगरीय प्रशासन एवं विकास, म.प्र. की ओर SAP पर अपडेट करने हेतु।
21. बेव कंटेट मैनेजर विभागीय बेवसाईट पर अपलोड करने हेतु।

प्रमुख अभियंता
नगरीय प्रशासन एवं विकास
म.प्र., भोपाल