

Tender No.

TMC/ACTREC/ENGG/PG-70/ET-32/STP/2021

28/02/2021

Sub : CONSTRUCTION AND EXECUTION OF SEWAGE TREATMENT PLANT AND MASTER SEWER LINE AT ACTREC, KHARGHAR, NAVI MUMBAI

## Schedule of Quantities.

Name of Agency							
FINANCIAL BID							
Sr.No.	Item Code	Description	HSN/SAC code	Qty.	Unit	Rate	Amount
PART A							
1	1	Excavation mechanically (using excavators like JCB /Poclain/with bucket) in all types of soil, including murrum, soft rock for foundations, wall, columns, plinth beams, basement, raft, ducts, trenches, underground sumps, septic tanks, soak well including shoring and strutting, bailing out water/pumping off water if required, removing and stacking or Disposing simultaneously the excavated soil anywhere within the ACTREC Campus and/or spreading soils in layers for site development. All complete as per specification and as directed by the Engineer-incharge. Only the planned area as per the drawing will be measured.					
2	1a	For depth upto 1.5m.		700	Cum		-
3	1b	For depth exceeding 1.5 upto 3m.		200	Cum		-
4	1c	For depth exceeding 3m. upto 4.5m.		75	Cum		-
5	2	Earth work in excavation by mechanical means in hard rock for foundations, wall, columns, plinth beams, basement, raft, ducts, trenches, underground sumps, septic tanks, soak well including shoring and strutting, bailing out water/pumping off water if required, removing and stacking or disposing simultaneously the excavated stuff anywhere within the ACTREC Campus and/or spreading soils in layers for site development. All complete as per specification and as directed by the Engineer-incharge. Blasting prohibited. Only the planned area as per the drawing will be measured.					
6	2a	For depth exceeding upto 3m.		400	Cum		-
7	2b	For depth exceeding 3m. upto 4.5m.		500	Cum		-
8	2c	For depth exceeding 4.5m. upto 7.5m.		320	Cum		-
9	3	Filling in plinth & superstructure under Floors/ Roads with selected excavated earth available within site, in layers of 15 cms. to 20 cms. Including watering, ramming consolidating to 15cm thick or so , by manually compaction or using mechanical plate compactor / vibro-roller etc (manual compaction will be permitted under special condition and as per engineer written instruction ), finished to desire levels all as per drawings to get MPD of 95% as per detailed drawings. Including cost of transportation anywhere within site. all complete as per specification or as directed. ( Note : Each Tank plinth area to have at least one set of test of MPD conducted irrespective of plinth area or for every 500 sqm of compacted area and part there of ).		942.50	Cum		-
10	4	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.		900.92	Sqm		-
11	5	Providing and laying in position ready mixed M15 grade plain cement concrete, with cement content as per approved design mix and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for plain cement concrete work, including pumping of R.M.C. from transit mixer to site of laying and curing, including the cost of centering, scaffolding, shuttering and finishing, including cost of curing, admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer-in-charge. (M15 grade at all locations upto plinth level)		220	Cum		-
12	6	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, cement content as per approved design mix, and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying, including the cost of centering, scaffolding, shuttering, finishing, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate / retard setting of concrete, improve workability without impairing strength and durability and including supply and installation of PVC water stopper as per direction of the Engineer - in - charge.					
13	6a	All works at all levels		955	Cum		-
14	7	Providing and Fixing of reinforcement steel including material fabricating, transporting, loading, unloading, storing on raised steel rack platform, handling, straightening, cutting to length, bending, making hooked ends, hoisting into place at all levels and heights and binding in position (including Providing & using 18 gauge binding wire) reinforcement bars of all diameters (IS 1786 ,Fe 500 of all grade) to shape and size as per approved bar bending schedules and structural drgs. for all kinds of works at all heights & depths as specified including cost of approved quality PVC/Concrete cover blocks, spacers, chairs at regular interval as per relevant IS code and such other works that are required to make it complete. Quantity of steel as per drawing, approved BBS and with authorized overlaps only shall be measured and paid for. Quantity for chairs and spacer bars will not be paid. The measurement shall be as per IS 1200 and reinforcement hooks and bends shall comply with the requirement of IS 2502 unless clearly specified above.		135	MT		-

15	8	<p>Providing box type waterproofing below base slab of Underground Water Tank including preparation of surface as required of following operations:</p> <p>a) Preparation of surface by cleaning, leveling etc.</p> <p>b) 20 mm thick cement sand mortar mixed with water proofing powder, 4% by weight of cement shall be laid on PCC and 20 mm graded aggregate free from impurities shall be spread on the floor. It shall be cured for 3 days.</p> <p>c) Provide insert sockets and pipes to release the sub soil water pressure.</p> <p>d) Then 18-20 mm thick rough kota or similar stones of approximate 600 x 600 mm in size shall be laid flat and joined with cement-sand mortar. This shall project 300 mm all around RCC raft. The stones shall be hard tough and free from cracks etc.</p> <p>e) Then the surface shall be screeded with cement-sand mortar and finished smooth.</p> <p>f) RCC raft, walls or masonry shall be constructed as designed.</p> <p>g) The sockets / pipes are grouted with pressure.</p> <p>h) Columns or any support etc. coming out of raft shall be sealed with polysulphide sealant at PCC level and at top of raft.</p>		395	Sqm		-
16	9	<p>Providing box type waterproofing on external face of Underground Water Tank side walls upto plinth level including preparation of surface as required of following operations:</p> <p>a) About 20 mm thick stone slabs shall be fixed with cement sand grout 1:4 (1 cement : 4 sand). Grout mixed with water proofing compound 4% by weight by cement and joint well grouted and cured.</p> <p>b) External surface shall be plastered 20 mm thick with cement sand mortar 1:4 (1 cement : 4 sand) mixed with 4% by weight of water proof compound and in ratio roughened.</p> <p>c) Vertical joints shall be well cleaned and grouted to make sure it forms a continuous treatment. If required, joint may be treated with sealant.</p> <p>d) Treatment shall be taken about 300 mm above finished level.</p> <p>e) All pipes etc. coming out of walls shall be sealed by grouting with sealant.</p>		540	Sqm		-
17	10	<p>Dry stone rubble soling/pitching of 150 mm to 230mm size shall be approved quality, hard, free from cracks, durable, preferably black trap. Rubble shall be laid on leveled base close to give compact, surface. If base is not properly leveled same will have to be done without any extra cost. Voids in the joints shall be filled with selected chips. A sample of paving shall be prepared and got approved before proceeding ahead. After stones are laid with thickness of 200mm and packed with chips, sand shall be spread and watered to fill remaining voids. Sand shall be allowed to go into joints till final packing is obtained. Rate quoted shall be for materials, labour, watering, leveling site, before paving, consolidating etc. complete.</p>		149.55	Cum		-
18	11	<p>Demolition of Existing Storm Water drain of approximately 60m in length complete by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials anywhere inside the campus as per directions of Engineer incharge, stacking serviceable and unserviceable materials separately etc. complete.</p>		1	L.S.		-
19	12	<p>Demolition of soak pit/inspection chamber/ any other concrete retaining structure . Dismantling of cement concrete by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials anywhere inside the campus as per directions of Engineer incharge, stacking serviceable and unserviceable materials separately etc. complete.</p>		150	Cum		-
20	13	<p>Dismantling of cement concrete by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 cum in volume and stock piling at designated locations and disposal of dismantled materials outside the campus including the cost of royalty, loading at site, transportation, unloading, spreading, etc. complete. Only the concrete quantity dismantled will be measured. Including cost of royalty charges.</p>		120	Cum		-
21	14	<p>Providing fixing FRP Cover with load carrying capacity of 5 tonnes or more over the tank as per specified size. Making the cover operatable in a manner of open/close with necessary fixtures &amp; fittings. The opening area to be measured. The drawing to be approved by EIC.</p>		12.66	Sqm		-
22	15	<p>Providing and constructing AAC Light weight Block Masonary with 75mm/100mm/150mm/200mm/300mm thick at all levels in by using approved block laying polymer modified adhesive mortar, including 75mm thick Patli / Stiffeners of M-15 Grade at every 1000mm with 2 nos 8mm steel bars all to be considered in the cost and no separate measurement will be done for steel and patli, also including scaffolding, racking out joints, curing with curing compound etc. in line, level and plumb, All complete as per specification for all height of floor or as directed etc. (Rate includes the cost of stiffners hoop ). (No holes for scaffolding will be permitted into the blockwork)</p>		22.34	Cum		-
23	16	<p>Providing and applying Internal 12 mm to 15mm thick plain/smooth cement plaster finish at all heights and below highest plinth level in cement mortar using Ready mix plaster as per manufacturer specification including 150mm PVC Chicken mesh on both sides of joint, making pattas, bends, grooves, over any bricks or concrete surfaces in single layer as specified smooth finished including preparing the surfaces close hacking of concrete surfaces, curing, double scaffolding to the walls, beams, stair, column, pardis, bends, moulds, pattas, grooves etc. in line, level and plumb, all complete as per specification or as directed. (No holes for scaffolding will be permitted into the blockwork )</p>		133.45	Sqm		-
24	17	<p>Providing and applying External 18 mm thick sand face cement plaster in two coats at all heights below and above highest plinth level with first coat of 12 mm thickness with cement mortar, using readymix plaster mixed as per manufacturer specifications including roughening by cross hatch line to receive top coat of 6 mm thickness with cement mortar and 10-12mm thick single coat plaster under chajja soffit, including 150mm PVC Chicken mesh on both sides of joint, recron fibre, mixing with additional waterproofing compounds including making drip moulds, bends, pattas, grooves (grooves have to be finish with neat cement mixed with waterproofing compound) as per drawing/ details, including double scaffolding, curing with curing compound etc. in line, level and plumb, all complete as per specification or as directed. (No holes for scaffolding will be permitted into the brickwork)</p>		175	Sqm		-

25	18	Providing and Applying and Levelling the existing surface with Birla White Cement based / Coloured waterproof Putti of average thickness of 2 mm of approved thickness, brand and manufacture, over the plastered wall surface to prepare the surface even and smooth ready for painting purpose etc complete ( Rate inclusive of Scaffolding Material, Labour Charges) Etc.		133.45	Sqm		-
26	19	Providing & Applying one / two coats of primer & thereafter two coats of paint as mentioned below of approved make First quality Asian Paints (Apolite) / Goodlass Nerolac/ ICI to the required colour scheme and as per manufacturers instructions / specifications to the walls, beams, columns, ceilings, partitions doors etc. including thoroughly scrapping the existing surface with sand papers, removing old paint, filling up crevices and levelling with waterproof putty / plaster of paris of necessary to obtain smooth surface etc. complete job including removal of stains, painting spots on floors, aluminium window frame & glass etc as to the entire satisfaction of engineer in charge Two Coat Acrylic Emulsion paint		175	Sqm		-
27	20	Providing and laying cement water-proofing (including grouting) of average 115 mm thick for balcony, terrace, returns ( watta ), khurras etc at all the levels including grouting with layer of 20 mm thick cement mortar 1:3 (1 part cement : 3 part coarse sand) mixed with water proofing compound of approved make and as specified by the manufacturer, laying brick bats of required size impregnating in to the base mortar bed with gap of 12 mm all around according to slope, level and curing the same, the gaps around brick bats filled with cement mortar 1:3 (1 part cement : 3 part coarse sand) mixed with waterproofing compound, 15 to 20 mm water proof screed layer above brick bats and finishing top with neat cement @ 2.75 Kg/Sq.M. making square 300 x 300 mm chequered finish marks with string, finishing around rain water outlets, curing etc. in line, level and plumb / slope, complete including furnishing of guarantee for 10 years. The work should be carried out through an approved specialised agency like India Water Proofing Co. or equivalent. (note: The above rates shall be inclusive of Providing and mixing of waterproofing compound as per manufacturer's specifications) (Mode of Measurement : Only the plan area will be measured and No additional measurements will be done for wattas, khurras etc)		100.4	Sqm		-
28	21	Kota stone slab flooring over 20 mm (Average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab, including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) as directed by Engineer incharge KOTA STONE 25mm thick.		88.16	Sqm		-
29	22	FLUSH SHUTTER Providing & fixing in position/flush door of shutters block board solid core internally lipped bonded with water proof type synthetic resin hot pressed with marine ply finished on both faces including prov. And fixing teak wood 20mm thick lipping on all sides fixing heavy duty approved make 4 levers mortice lock with pair of handle of approved make & quality brass/S.S . fittings such as hinges, tower bolts, of approved make fixing fixtures locking arrangements applying one coat of approved wood primer etc. and shutter should be 35 mm thick all complete also including granite frame of approved colour as specified and directed by Engineer-In-Charge.		5.04	Sqm		-
30	23	ALUMINUM OPENABLE WINDOWS Providing & fixing in position aluminium openable window shutter fully glazed / aluminium grills withH using 5.5mm thick glass sheet of approved make and quality plain / frusted / bajari glass of approved make Triveni / Shri Vallabh / J / A / G / pilkinten fixed with aluminium bedding channels with two way rubber gasket / PVC lining to ensure water tightness and Nos rattling for aluminium grill fixing with Fchannel bedding using satin finish aNosdized 15 micron jindaL sections for shutters and frame of required size and section including using aluminium / S.S. hinges of required size of Archies make, tower bolt of required size of Archies make , C type alum handle for shutter of Archies make and other necessary hardware as per requirement etc.with granite frame Openable windows with glass shutters complete all as per specified and directed by Engineer in charge.		5	Sqm		-
31	24	Providing and fixing P.V.C. pipes 100mm dia for pipes having wall thickness of 2.2 to 2.7 mm conforming to I.S. 13592- 1992 including proper rainwater receiving recess with P.V.C. plug, bend, necessary fittings, such as, offsets, shoes, including fixing the pipe on wall using approved wooden cleats projecting 25mm to 40mm from face of wall a fixing with clips of approved quality and number ,filing the joint using rubber gasket with solvent cement and properly resting the shoe of pipes on C.C. or masonry blocks, including necessary scaffolding and maintenance for 3 yrs for any leakages or dislocations of pipes. All the P.V.C. fittings and additional 2 piece socket clips shall be got approved from engineer in charge etc. complete. (Pipes to laid in Shaft for Risers-6kg for AC drain & Vent pipe )		8	Rmt		-
32	25	Providing and laying cement concrete pipe of IS 458:2003 NP-2 class of 600mm diameter in proper line, level and slope including providing and fixing collars with stiff mixture of cement mortar 1:2 and curing and complete hydrotesting of pipes etc. complete.		1720	Rmt		-
33	26	Providing and laying cement concrete pipe of IS 458:2003 NP-2 class of 300mm diameter in proper line, level and slope including providing and fixing collars with stiff mixture of cement mortar 1:2 and curing etc. complete.		730	Rmt		-
34	27	Providing and constructing Brick Masonry Inspection Chamber 90cm x 45cm x 90cm including 1:4:8 cement concrete foundation 1:2:4 cement concrete channels half round G.S.W.pipes, Brick Masonry, plastering from inside and outside with 1:3 Cement mortar and C.I. lid cover of 75 kg with lid and frame fixed in cement concrete.		33	Nos		-

35	28	Constructing brick masonry circular type manhole 0.91 m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand), in side cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size), and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg., fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation and foot rests to be paid separately) including 12mm thick cement plaster at the external surface : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5. Extra depth for circular type manhole 0.91m internal dia (at bottom) beyond 0.91 m to 1.67 m With common burnt clay F.P.S. (non modular) bricks of class designation 7.5. All complete include labour, material, machinery required as per the directions of Engineer incharge.		37	Nos		-
36	29	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement :4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design:1.68 m deep with SFRC Cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation and foot rests shall be paid for separately) but including 12 mm thick cement plaster at the external surface : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5. Extra depth for circular type manhole 1.22 m internal dia (at bottom) beyond 1.68 m to 2.29 m : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5 All complete include labour, material, machinery required as per the directions of Engineer incharge.		5	Nos		-
37	30	Constructing brick masonry circular manhole 1.52 m internal dia at bottom and 0.56 m dia at top in cement mortar 1:4 (1 cement :4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement, all complete as per standard design :2.30 m deep with SFRC Cover and frame (heavy duty HD- 20 grade designation) 560 mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering, shuttering all complete. (Excavation and foot rests shall be paid for separately) but including 12 mm thick cement plaster at the external surface : Extra depth for circular type manhole 1.52 m internal dia (at bottom) beyond 2.30 m : With common burnt clay F.P.S. (non modular) bricks of class designation 7.5		14	Nos		-
38	31	Providing M.S. foot rests including fixing in manholes with 20x20x10 cm cement concrete blocks 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) as per standard design : With 20 mm diameter round bar		160	Nos		-
39	32	Fly and profile levelling and preliminary contour survey of master sewer line and submission of detailed report with manhole wise listing of Reduced level and invert level.		1	L.S.		-
40	33	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within the ACTREC Campus and the work also includes providing adequate slope, strutting & shoring including bailing out of water as directed by Engineer in charge. Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm. Work also includes 100mm thick sand bedding below pipe.		1800	Rmt		-
41	34	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within the ACTREC Campus and the work also includes providing adequate slope, strutting & shoring including bailing out of water as directed by Engineer in charge. Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm.Fpr excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. Work also includes 100mm thick sand bedding below pipe.		630	Rmt		-
42	35	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within the ACTREC Campus and the work also includes providing adequate slope, strutting & shoring including bailing out of water as directed by Engineer in charge. Pipes, cables etc. exceeding 300 mm dia but not exceeding 600 mm.For excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 4.5 m. Work also includes 100mm thick sand bedding below pipe.		20	Rmt		-
<b>Total for Part A</b>							-
<b>PART B</b>							
43	36	Bar Screen : Supply, installation, testing & commissioning of 1 Nos Stainless Steel SS304 Perforated Screen of 10mm with suitable lifting arrangement mechanically (Automatic) with conveyor belt and chute arrangement to be provided. Bar sizing will be 800mm x 1000mm & Bar thickness should be min 10 mm		1	Nos		-

44	37	Sewage Transfer Pumps : Supplying, installing, testing & commissioning of Submersible non clog sewage transfer pumps with motor, pressure gauge with isolation cock, Isolation valve, NRV on delivery line, stainer at suction. The pump shall be suitable for 415±10% volts 3 phase AC supply. Pumps = 02 Nos.(1w + 1s) Flow rate (each) = 15 m3/hr, Head = 10 mtr, Material of Construction (MOC) of base:- Cast Iron, MOC of shaft:- SS410 Pump efficiency-70% , Solid Handling Capacity shall be 35-45 mm .TEFC Motor with IP - 68 rating Make:- CNP/Wilo/Kirloskar/grundfos		2	Nos		-
45	38	Anoxic Tank Recirculation Pump : Supply, installation, testing & commissioning of Submersible non clog Anoxic Tank Recirculation Pump. Pumps with Fan arrangement for both pumps = 02 Nos.(1w + 1s) Flow rate (each) = 45 m3/hr Head = 10-12mtr MOC of base:- CI MOC of shaft:- SS410 Pump efficiency-70% Solid Handling Capacity shall be 35-45 mm.TEFC Motor with IP - 55 rating Make:-CNP/Wilo/Kirloskar/grundfos		2	Nos		-
46	39	Fine Screen : Supply, installation, testing & commissioning of 1 Nos Stainless Steel SS304 Perforated Screen of 4mm with suitable lifting arrangement mechanically (Automatic)with conveyor belt and chute arrangement to be provided. Bar sizing will be 800mm x 1000mm & Bar thickness should be min 10 mm		1	Nos		-
47	40	Supply Installation Testing and Commissioning of Twin Lobe type rotary air blowers ( 1 working & 1 standby ) capable of delivering 253cum / hr (each) of free air at 0.55 kg / cm2 driven through "V" belt or directly coupled through flexible coupling to a TEFC motor of suitable HP Suitable for 415±10%volts,3 phase, 50 cycles a/c supply. MOC of body : CI, Power Required : 7.5 KW and Speed : 1200 RPM. Air piping shall comprise of pipes droppers/laterals with MS (epoxy coated) Header complete with all fittings such as tees, crosses, plugs, sockets, elbows, reducers, supports & clamps, puddle flanges etc cutting chases & making good. Make of Blowers-TMVT/Everest/Airvak		2	Nos		-
48	41	Air Diffusers : Supply, installation, testing & commissioning of air diffusers for providing aeration of following :-Diameter of Membranes-90 mmDia/Length-150/2000 mmMOC-EPDM/Silicon Rubber Type -Tube Type Make-Rehau/OTT/Scogen/Proflex		32	Nos		-
49	42	MBBR Media : Supply, installation, testing & commissioning of MBBR media of following parameters:-Diameter of Media-20-25 mm Height of Media-10-20 mm Surface Area of Media should be greater than 520 m2/m3. Membrane forming time should be in the range of 3-10 days. MOC of Media-Polypropylene (PP). The design of media and exact size to be approved by Engineer in charge before procurement. Life span greater than 15 years.		8	Cum		-
50	43	Tube Media : Supply, installation, testing & commissioning of tube media of following parameters:-MOC of Media-Polypropylene (PP) Type-Square/HexagonThickness-1.0 to 1.2 mm. The design of media and exact size to be approved by Engineer in charge before procurement. Life span greater than 15 years.		7	Cum		-
51	44	Sludge Recirculation Pumps : Supplying, installing, testing, commissioning of Submersible non clog/centrifugal Sludge Recirculation Pumps. The pump shall be suitable for 415±10% volts 3 phase AC supply. Pumps = 02 Nos.(1w + 1s) TEFC Motor with IP - 55 rating Flow rate (each) = 10 m3/hr Head = 14 mtr MOC of base:- CI MOC of shaft:- SS316 Solid handling capacity-35-45mm Pump efficiency-70% Make:-Kirloskar/CNP/Grundfos		2	Nos		-
52	45	Screw Pump : Supply, installation, testing & commissioning of positive displacement Screw pumps for complete installation with all the accessories. The pumps shall be complete with Base frame, Delivery header with pressure gauge on delivery line.Pumps = 02 Nos.(1w + 1s) Flow rate (each) = 5 m3/hr TEFC Motor with IP - 55 rating Pump housing-CI Base plate-Mild steel Solid handling capacity-35-45mm Motor efficiency Class-IE2 Make:-Netzsch, Grundfos, Kirloskar		2	Nos		-
53	46	Filter Feed Pumps : Supply, installation, testing & commissioning of horizontal centrifugal filter feed pumps for complete installation with all the accessories. The pumps shall be complete with Base frame, Delivery header with pressure gauge on delivery line .Pumps = 02 Nos.(1w + 1s). TEFC Motor with IP - 55 rating Flow rate (each) = 15 m3/hr Head = 35 mtr MOC of base:- CI MOC of rotor:- SS304 MOC of shaft:- SS304 Pump efficiency-70% Make:-Kirloskar/Johnson/CNP		2	Nos		-
54	47	Pressure Sand Filter - Supply, installation, testing & commissioning of MSEP vessel filter with frontal piping and Valves with all the required accessories. Filter shall include media, standard fittings like pressure gauges, sampling cock, rinse drain etcFlow-15 m3/hrDiameter-1200 mm Height of Vessel-1500 mmMOC-MSEP Shell Thickness-8 mmDisc Thickness-10 mmFrontal Piping-MSEPSize of Piping-65 NB Type of Valve-Butterfly ValveFiltration Media-Multi Grade Sand Media Quantity - 2000 Kg Make of Valves-Audco/Zoloto/Danfoss		1	L.S.		-
55	48	Activated Carbon Filter - Supplying, installation, testing & commissioning of MSEP vessel filter with frontal piping and Valves with all the required accessories. Filter shall include media, standard fittings like pressure gauges, sampling cock, rinse drain etc Flow-15 m3/hrDiameter-1200 mmHeight of Vessel-1500 mm MOC-MSEP Shell Thickness-8 mmDisc Thickness-10 mmFrontal Piping-MSEPSize of Piping-65 NB Type of Valve-Butterfly Valve Filtration Media-Multi Grade Sand + Activated Carbon Media Quantity-1000 kg Sand + 500 Kg CarbonMake of Valves-Audco/Zoloto/Danfoss		1	L.S.		-
56	49	Chlorine Dosing System - Supply, Installation, testing and commissioning of Chemical dosing system comprising of Dosing pumps ( 1W + 1S ) with IP 55 motor rating compatible for the complete dosing system : -Capacity-12 LPH Pressure-5 kg/cm2 MOC-PPDosing Tank Capacity-100 Ltrs MOC Tank-HDPE Make-Sintex/Indrayany, Pump make: -Milton Roy/e-dose/Kirloskar/CNP/Grundfos		1	L.S.		-

57	50	Polyelectrolyte Dosing System : Supplying, Installation, testing and commissioning of Polyelectrolyte Dosing system comprising of following-Dosing pumps (1W+1S) with IP 55 motor rating compatible for the complete dosing system Pump make: - Kirloskar/CNP/Grundfos, Capacity-6 LPH Pressure-5 kg/cm2 MOC-PP Dosing Tank Capacity-100 Ltrs MOC Tank-HDPE, tank Make-Sintex/Indrayany pump Make-Milton Roy/e-dose/Kirloskar/CNP/Grundfos		1	L.S.		-
58	51	Flow meters : Supplying, Installation, testing and commissioning of flow meter of following parameters:-Capacity-15 m3/hrType-Inline pipePipe Size-65 mm Make-Aster		1	Nos		-
59	52	Sludge Dewatering Unit ( Filter Press) : Supplying, Installation, testing and commissioning of Sludge Dewatering Unit of following parameters:-Plate no-20 MOC of body-MSplate MOC-PP size-610 x 610 mm Filtration per press : 16 Sqm/press, Cake holding capacity per recessed plate : 10 Litres /Chamber and 200 Litres/press Make-N M Patel & co/sachin filtration		1	L.S.		-
60	53	Submersible Sump Pump : Supplying, Installation, testing and commissioning of Submersible sump pump to transfer from receiving sump to Equalization Tank. Pumps = 02 Nos.(1w + 1s)Capacity-45 m3/hrHead-12 meter Type-Cutter type, submersible TEFC motor with IP -68 rating MOC of Pump-SS Power-5.0 kW/ 3 PhaseShaft-SS Efficiency-70% Make-Kirloskar/Wilo/CNP/Grundfos		2	Nos		-
61	54	Supplying, Installation, testing and commissioning of complete piping and fittings of STP plant. It includes all types of pipes, valves and other accessories as required and approved by engineer in charge. Submerged Piping-HDPE IS 4984 : 1995 Covered Piping -SS 316		1	L.S.		-
62	55	Supply and laying of Sewage Bypass line required in case of maintenance of STP of size 150 mm in DI ( MOC ) pipe having flange joint with all accessories, fitting, valve etc as required to complete the work		10	Rmt		-
63	56	Supplying, Installation, testing and commissioning of following instruments required for STP plant Level Sensors- 6 Nos Pressure Gauges- 3 Nos. Make - Strong MAC/ Omicron/WIKA		1	L.S.		-
64	57	Providing and fixing in position M.S./G.I. pipe two side flange sleeves of upto 600 mm long ( heavy class ) with M.S. puddle flange fabricated out of 6 mm thick M.S. plate in RCC walls of water tanks/retaining wall during the time of casting the same including hot dipped galvanisation after fabrication and painting with 2 coats of anti corrosive paint over primer. Size & location of the puddle flange shall be as required to complete the STP system.		1	L.S.		-
65	58	Providing and fixing of pH Meter wherever required. Make : Forbes Marshall, ION Exchange		1	Nos		-
66	59	Providing and fixing of Vent pipes over each tanks of any non-corroded material in STP for sufficient numbers of following sizes in all respect and as directed by the engineer in charge.		1	L.S.		-
67	60	Design, fabrication, assembling, wiring, supply, installation, testing and commissioning of Motor Control Centre ( MCC ) indoor cubical type ( IP55 ) suitable for 415V, 3 phase, 4 wire, 50 Hz AC supply system fabricated out of 2mm thick CRCA sheet steel & finishing complete with 7 tank process for powder coating in approved shade. Panel should have 2 nos earth stud at the rear, solid connections from main bus bar to switchgear with required size of Copper busbars and control wiring with 2.5 Sq.mm PVC insulated multi strand copper conductor cable, cable alleys, CT, Control Fuse, Voltmeter, ammeter, push buttons, indication lamp, Auto manual selector switches, cable gland plates etc. Switchgears make:- L&T/Siemens/ABB Panel Make: - Chavare Engineering, L&T, Marine Electrical		1	L.S.		-
68		MCC panel shall comply all latest codes and standards and as per approval of Engineer in charge.					
69		MCC panel shall be suitable for all equipments/pumps connected to the STP with 25 % of spare capacity.					
70		DOL starters shall be used for the pumps below 10 HP and all other pumps shall have Star Delta Starters.					
71		MCC panel shall be mounted floor mounted or mounted on MS stand with proper paint & primer as per the site conditions and as approved by engineer in charge.					
72	61	Supply, Laying, Testing & Commissioning of Flexible Electrical Cables of Copper conductor for all pumps and equipments of required sizes as required in 300 KLD STP along with all accessories for termination of the same conforming the required codes and standards. It also includes the Cable tray for laying / routing all cable from panel to equipments as required with proper dressing and tagging of the same. Make of Cables-Polycab/Finolex/Havells		1	LS		-
73	62	Supply, Installation, Testing & Commissioning of Earthing system conforming IS: 3043 for equipments as required for 300 KLD STP plant.		1	LS		-
<b>Total for Part B</b>							
<b>Total Cost inclusive of All Taxes and duties excluding GST</b>							-
<b>GST @ 12% for the project</b>							-
<b>Total Cost inclusive of All Taxes and duties including GST</b>							-
<b>PART C</b>							
1	C1	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 1ST YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	L.S.		-
2	C2	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 2ND YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	L.S.		-
3	C3	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 3RD YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	L.S.		-
4	C4	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 4TH YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	L.S.		-
5	C5	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 5TH YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	L.S.		-
<b>Total Cost for Operation and Maintainence excluding GST</b>							-
<b>GST @ 18%</b>							-
<b>Total Cost for Operation and Maintainence including GST</b>							-

**NOTE:**

- 1 The agency is requested to visit the site to know actual scope of work.
- 2 Rate shall be quoted inclusive of all taxes Excluding GST which will be paid extra as applicable on submission of challan. FOR TMC/ACTREC applicable rate of GST is 12%. Agency has to consider GST at rate specified.
- 3 Material required at site should be assessed by the agency and bill will not be settled for excess/supplied items.
- 4 Bill will be settled as per actual measurement after supply of material at site.
- 5 Deviations/suggestions may be put on separate page in order to attain higher quality performance. Competent authority reserves full right to accept or reject any kind of changes.
- 6 Agency will have to prepare detailed shop drawing/ plan of work & obtained approval before execution. Agency will have time bound work schedule for carrying out the work.
- 7 Payment will be released for consumed quantity on satisfactory completion on providing necessary certifications/documentation.
- 8 All above items of this schedule shall have standard make as specified in Tender and approved before installation.
- 9 Agency has to get a sample approved from Engineer-in-charge in writing before any supply of item.
- 10 ACTREC reserves the right to reject any sample and rescind the work order if the samples are found to be unsatisfactory and if the agency is unable to meet the requirement of ACTREC.
- 11 Work Order for Part C of Financial quote will be issued at later stage after completion of work purely as per the discretion of Competent Authority of ACTREC.
- 12 ACTREC reserves the right to reject issuing order for Part C of financial bid without assigning any reason thereof and will not void the tender/contract for Part A and Part B of tender. Agency cannot claim compensation/ relief citing the rejection of issuance of order for Part C of financial bid and all clauses related to tender shall be valid.