

Tender No.

TMC/ACTREC/ENGG/PG-40/STP/ET-69/2020

06/02/2020

Sub : CONSTRUCTION AND EXECUTION OF SEWAGE TREATMENT PLANT AND MASTER SEWER LINE INCLUDING OPERATION AND MAINTAINENCE OF PLANT AT ACTREC

Schedule of Quantities.

Name of Agency							
FINANCIAL BID							
Sr.No.	Item Code	Description	HSN/SAC code	Qty.	Unit	Rate	Amount
PART - A							
1	A1	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.					
2	A1a	For depth upto 1.5m.		822.97	Cum		-
3	A1b	For depth exceeding 1.5 upto 3m.		162.98	Cum		-
4	A1c	For depth exceeding 3m. upto 4.5m.		77.81	Cum		-
5	A2	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. <u>Blasting prohibited.</u>					
6	A2a	For depth exceeding upto 3m.		651.94	Cum		-
7	A2b	For depth exceeding 3m. upto 4.5m.		700.27	Cum		-
8	A2c	For depth exceeding 4.5m. upto 7.5m.		336.85	Cum		-
9	A3	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	A4	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	A5	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 Engineerin-charge. (M15 grade at all locations upto plinth level)		263.32	Cum		-
12	A6	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	A7	All works upto plinth level		1249.92	Cum		-
14	A8	All works above plinth level		50.64	Cum		-
15	A9	Providing and Fixing of reinforcement steel including material fabricating, trasporting, 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 cbelow 10 HP and all oth		137.58	MT		-

16	A10	Providing box type waterproofing below base slab of Underground Water Tank including preparation of surface as required of following operations: a) Preparation of surface by cleaning, leveling etc. 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. c) Provide insert sockets and pipes to release the sub soil water pressure. 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. e) Then the surface shall be screeded with cement-sand mortar and finished smooth. f) RCC raft, walls or masonry shall be constructed as designed. g) The sockets / pipes are grouted with pressure. h) Columns or any support etc. coming out of raft shall be sealed with polysulphide sealant at PCC level and at top of raft.		395.00	Sqm		-
17	A11	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: 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. 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. 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. d) Treatment shall be taken about 300 mm above finished level. e) All pipes etc. coming out of walls shall be sealed by grouting with sealant.		391.58	Sqm		-
18	A12	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.		149.55	Cum		-
19	A13	Demolition of Existing Storm Water drain of approximate length 50m.		1.00	LS		-
20	A14	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.		149.55	Cum		-
21	A15	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.		120.00	Cum		-
22	A16	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 & fittings. The opening area to be measured. The drawing to be approved by EIC.		12.66	Sqm		-
23	A17	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)		22.34	Cum		-
24	A18	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)		133.45	Sqm		-
25	A19	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, recon 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)		175.00	Sqm		-

26	A20	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		-
27	A21	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 Indbelow 10 HP and all other pumps shall have Star Delta Starters. 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. It should comply with NFPA Norms.nation 7.5 All complete include labour		100.40	Sqm		-
28	A22	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	A23	FLUSH SHUTTERProviding & 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	A24	ALUMINUM OPENABLE WINDOWSPROVIDING & 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 /I / A/ G/ pilkinten fixed with aluminium beeding channels with two way rubber gasket / PVC lining to ensure water tightness and Nos rattling for aluminium grill fixing with Fchannel beeding 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.		5.00	Sqm		-
31	A25	Providing and fixing P.V.C. pipes 100mm dia for pipes having wall thickness of 2.2 to 2.7 mm confirming 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)		8.00	Rmt		-
32	A26	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.		1720.00	Rmt		-
33	A27	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.		730.00	Rmt		-
34	A28	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.		33.00	Nos		-

35	A29	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 below 10 HP and all other pumps shall have Star Delta Starters. 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. It should comply with NFPA Norms.nation 7.5 All complete include labour, material, machinery required as per the directions of Engineer incharge.rge.		37.00	Nos		-
36	A30	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 exalant at PCC level and at top of raft. ave Star Delta Starters. 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. It should comply with NFPA Norms.nation 7.5 All complete include labour, material, machinery required as per the directions of Engineer incharge.		5.00	Nos		-
37	A31	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 thebelow 10 HP and all other pumps shall have Star Delta Starters. MCC panel shall be mounted floor mounted or mounted on MS stand with proper paint & primer as per the site conditions		14.00	Nos		-
38	A32	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		160.00	Nos		-
39	A33	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.		1.00	LS		-
40	A34	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.		1800.00	m		-
41	A35	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.		630.00	m		-
42	A36	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 in all kinds of soil for depth exceeding 3 m in depth, but not exceeding 4.5 m. Work also includes 100mm thick sand bedding below pipe.		20.00	m		-

43	A37	Detailed Shop/GA Drawings , flow diagram, equipment list, power load requirement with design calculations of all elements of the plant including electrical and mechanical work to satisfy / supply adequacy of tender design followed by submission of detailed GOOD FOR CONSTRUCTION drawings for approval from the client/PMC.Contractors shall ensure submission of detailed GA drawings (Plan & Section), P & I diagram, schematic diagram for the above mentioned components and additional components such as inserts, puddle flanges, vent pipes etc. if so required for the complete work.		1.00	LS		-
44	A38	Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required and fixing too post as per the design and drawing complete as per the direction of Engineer-in-charge. Made of G.I. wire of dia 4 mm		320.00	Sqm		-
45	A39	Fencing with angle iron post placed at required distance embedded in cement concrete blocks, every 15th post, last but one end post and corner post shall be struted on both sides and end post on one side only and provided with horizontal lines and two diagonals interwoven with horizontal wires, of barbed wire weighing 9.38 kg per 100 m (minimum), between the two posts fitted and fixed with G.I. staples, turn buckles etc. complete. (Cost of posts, struts, earth work and concrete work to be paid for separately). Payment to be made per metre cost of total length of barbed wire used.		100.00	m		-
46	A40	Supplying and installation at site Angle iron post & strut including synthetic enamel paint and one coat of primer of approved colour of required size including bottom to be split and bent at right angle in opposite direction for 10 cm length and drilling holes upto 10 mm dia. etc. complete.		787.50	Kg		-
PART - B							
47	B41	Bar Screen : Supply, installation, testing & commissioning of 1 Nos Stainless Steel SS316 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 .		1.00	Nos		-
48	B42	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 - 55 rating Make:-CNP/Wilo/Kirloskar/grundfos		2.00	Nos		-
49	B43	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		2.00	Nos		-
50	B44	Fine Screen : Supply, installation, testing & commissioning of 1 Nos Stainless Steel SS316 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		1.00	Nos		-
51	B45	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 : 5.5 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		2.00	Nos		-
52	B46	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		32.00	Nos		-
53	B47	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.		8.00	Cum		-
54	B48	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.		7.00	Cum		-
55	B49	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		2.00	Nos		-

56	B50	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 MOC : SS410 for shaft Solid handling capacity-35-45mm Motor efficiency Class-IE3 Make:-Netzsch, Grundfos, Kirloskar		2.00	Nos		-
57	B51	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		2.00	Nos		-
58	B52	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		1.00	LS		-
59	B53	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		1.00	LS		-
60	B54	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-Pentair/Milton Roy, Pump make:- Kirloskar/CNP/Grundfos		1.00	LS		-
61	B55	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, Make-Pentair/Milton Roy		1.00	LS		-
62	B56	Flow meters : Supplying, Installation, testing and commissioning of flow meter of following parameters:-Capacity-15 m3/hrType-Inline pipePipe Size-65 mm Make-Aster		1.00	Nos		-
63	B57	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		1.00	LS		-
64	B58	Ozone System : Supplying, Installation, testing and commissioning of Ozone System to disinfect the filter water including accessories such as venturi,oxygen piping,pumps,ozone pipe,etcCapacity-75 gm./ hrMOC-SSOxygen generator to give 5 lpm oxygen at 90% purity-1 No.		1.00	LS		-
65	B59	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		2.00	Nos		-
66	B60	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		1.00	LS		-
67	B61	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		10.00	Mtr		-
68	B62	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		1.00	LS		-
69	B63	Providing and fixing in position M.S. 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.		1.00	LS		-
70	B64	Providing and fixing of pH Meter wherever required. Make : Forbes Marshall, ION Exchange		1.00	Nos		-
71	B65	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 incharge.		1.00	LS		-

72	B66	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 MCC panel shall comply all latest codes and standards and as per approval of Engineer in charge. MCC panel shall be suitable for all equipments/pumps connected to the STP with 25 % of spare capacity. DOL starters shall be used for the pumps below 10 HP and all other pumps shall have Star Delta Starters. 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. It should comply with NFPA Norms.		1.00	LS		-
73	B67	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		1.00	LS		-
74	B68	Supply, Installation, Testing & Commissioning of LED Light fixture (outdoor type) as required for the proper illumination in the STP in different area along with the mounting arrangement with GI octagonal poles of required height along with all other accessories. Make of light fixture:- Philips, Havells, Panasonic		1.00	LS		-
75	B69	Supply, Installation, Testing & Commissioning of Earthing system conforming IS: 3043 for equipments as required for 300 KLD STP plant.		1.00	LS		-
76	B70	Supplying, Installation, testing and commissioning of main incoming power cable of size 4C x 120 sqmm XPLE Armoured Al conductor with all termination accessories and laying accessories including HDPE pipe of 100 mm Dia.It should be fixed on wall or laid on ground.		200.00	Rmt		-
77	B71	Supply, Installation, Testing and Commissioning of 75 gm/hr Ozonator system		1.00	LS		-
PART C							
1	C1	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 1ST YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	LS		-
2	C2	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 2ND YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	LS		-
3	C3	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 3RD YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	LS		-
4	C4	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 4TH YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	LS		-
5	C5	OPERATION AND MAINTAINENCE OF SEWAGE TREATMENT PLANT FOR 5TH YEAR AFTER COMPLETION OF WARRANTY PERIOD.		1.00	LS		-
			Total Cost inclusive of All Taxes and duties excluding GST				-

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.
- 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 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 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.