

WORK ORDER NO: GOODWILL VERVE / STP WORK-01

AGREEMENT

FOR SEWAGE TREATMENT SYSTEM (STP-90 M3/DAY) AT
CHOICE LIFESTYLE- GOODWILL VERVE

THIS AGREEMENT IS MADE AND EXECUTED AT PUNE
ON THIS 13TH FEBRUARY 2024.

Contractor's signature



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Developer's Signature

Office: Road No.8, Vishrantwadi Airport Road, Adarsh Colony, Tingre Nagar, Pune- 411032
Phone No: +91 96238 78731 | Email id: estimation@choicegoodwill.com

WORK ORDER NO: GOODWILL VERVE / STP WORK-01

AGREEMENT BETWEEN

THE PARTY OF FIRST PART

M/s. CHOICE LIFESTYLE THROUGH its one of the partner **MR. AMIT ASHOK AGRAWAL**
Occupation: Business, residing at - Pune, hereinafter referred to as **"THE DEVELOPER"** (which expression shall unless it be repugnant to the context or meaning thereof be deemed to means and includes the firm, partners, respective heirs, executors and administrators)

THE PARTY OF SECOND PART

To,

GREENSOL TECH

Mr. Sanjay Power

Address: ABIL Imperial, 2nd Floor, S-8 PAN

Card Club Road, Baner, Pune-411045

Mobile No.: 9823042526 / 9673281110

PAN No.: BFHPP1378B

GST No.: 27BFHPP1378B1ZH

Email ID:

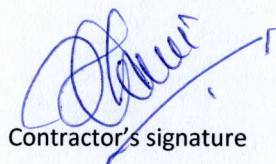
Work Order for "STP (90 M3/DAY)" for Proposed Project for M/s. Choice Lifestyle Developer Site- "GOODWILL VERVE", S.No.35/36, Opposite Venkatesh Graffiti, Manjari Road, Keshavnagar, Pune-411036.

Kind Attention: Mr. Sanjay Power

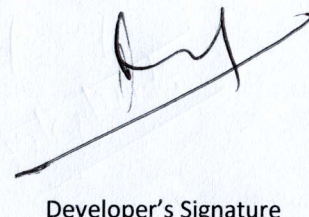
Work Order for the subject work is hereby placed as per the rates. Terms & Conditions which were finally settled with you. Accordingly, you are requested to proceed with the work in terms of this work order and conditions stipulated hereto.

1. Cost of Work : 20,00,000/- (Taxes Extra)

Here in after referred to as **"Contractor"** (which expression shall unless repugnant to the context or contrary to the meaning therefore mean and include its representatives, administrators, executors, assignees etc.)



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WHERE AS Party of the first part is the developer and intend to start the **STP Work** for the site situated at "**GOODWILL VERVE**", S.No.35/36, Opposite Venkatesh Graffiti, Manjari Road, Keshavnagar, Pune-411036

And **WHERE AS** Developer is desirous to get the said work executed through contractor having all the infrastructure and skill to complete the **STP Work** as per the Developer instructions.

And **WHERE AS** contractor have approached the Developer and shown his desire and willingness to execute the said work for which the Developer has given consent.

and **WHERE AS** it has been agreed by the Developer and contractor that the contractor will do work on "**GOODWILL VERVE**", S.No.35/36, Opposite Venkatesh Graffiti, Manjari Road, Keshavnagar, Pune-411036, on the following terms and conditions.

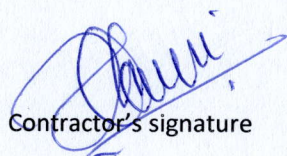
And **WHERE AS** both the parties have decided to reduce their terms into writing, which are as under:

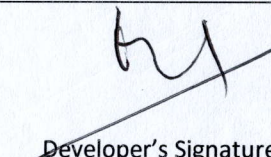
A. DESIGN BASIS

Source of Water: Toilet / Wash Basin / Bathing & Floor Washing / Kitchen Waste water

Design parameters (Membrane Bio Reactor Technology)

Nature of waste water	Sewage/Grey Water
Flow	90 m3/day
Operating period	24 hrs.
Raw sewage Parameter	
pH	6.0-9.0
COD	< 250 Mg/L
BOD – (3 days @ 27 °C)	< 450 Mg/L
TSS	< 200 Mg/L
Oil & Grease	< 10 Mg/L

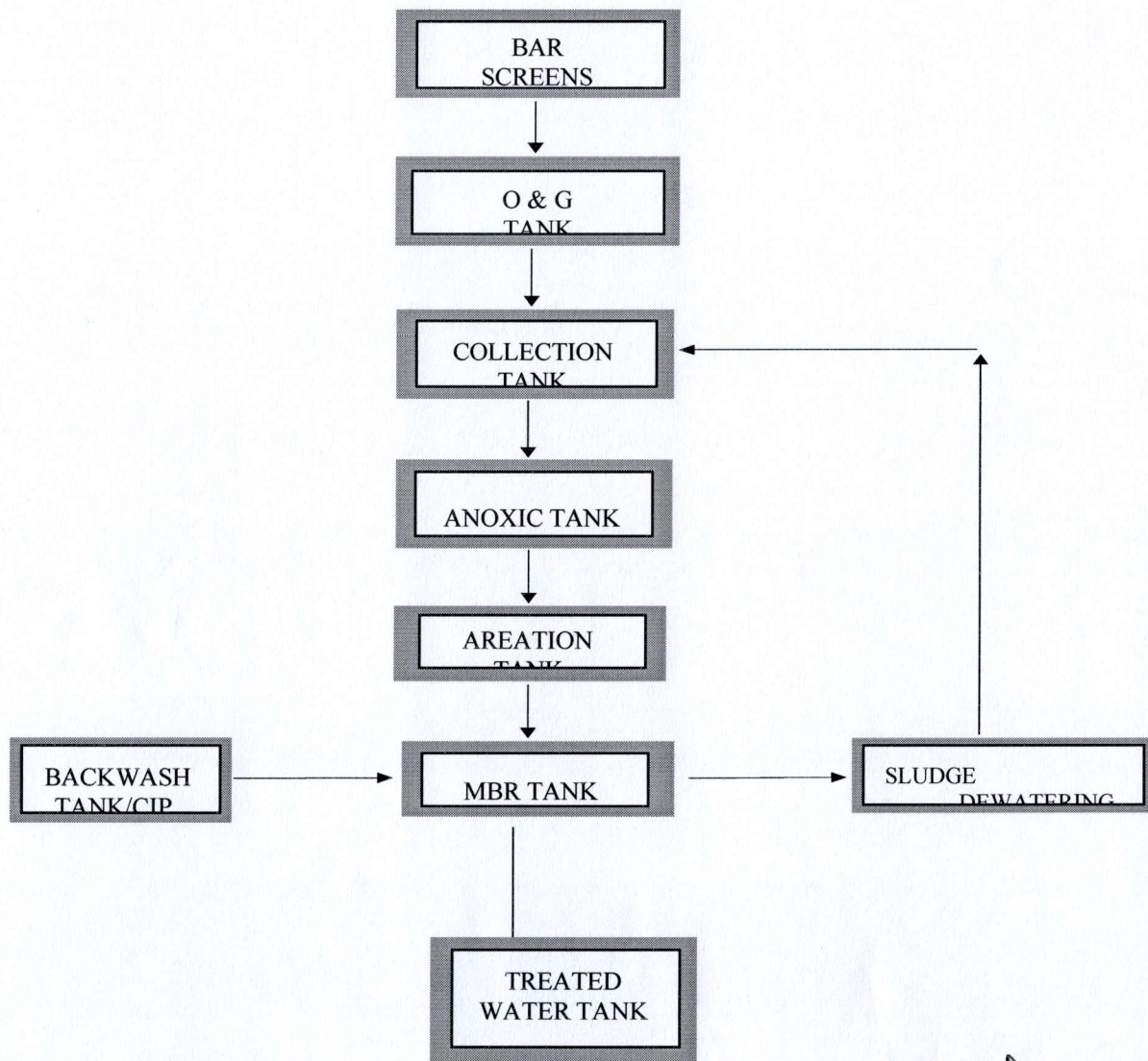

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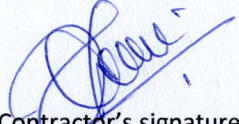

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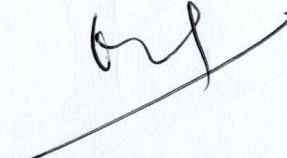
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Treated sewage parameter	
pH	6.5 -7.5
COD	≤ 30 ppm
BOD – (3 days @ 27 °C)	≤ 5 ppm
TSS	≤ 5 ppm
Oil & Grease	≤ 5 ppm

B. PROCESS FLOW DIAGRAM




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C. PROCESS DESCRIPTION

SEWAGE TREATMENT PLANT

1. SCREEN CHAMBER:

Screening is an essential step in wastewater treatment for removal of material which would otherwise damage equipment's interferes with satisfactory operation of the treatment units or equipment's.

2. OIL & GREASE TRAP:

Fat, oil and grease will affect the process and also affects quality of treated water. Hence an effective Oil & Grease trap system must be incorporated after bar screen chamber in order to remove oil and grease to treatable limits.

3. COLLECTION CUM EQUALIZATION TANK:

The screen wastewater from the screen chamber will be collected to the collection cum equalization tank. The objective of the collection cum equalization tank is to minimize or control fluctuations in wastewater flow & characteristics in order to provide optimum conditions for subsequent treatment processes. The collection basin will be of a sufficient size to adequately absorb wastewater fluctuations caused by variation in plant production scheduling and to dampen the concentrated batches periodically dumped or spilled. The entire content of the effluent will be kept in mix condition by submersible agitators or blowing air from bottom of the tank through blowers.

4. SEWAGE TRANSFER PUMP:

The raw sewage pump installed in collection cum equalization tank transfers screened & homogeneous mixture of wastewater from the equalization tank to the aeration tank. Sewage Transfer Pump interlocked with the level sensor which Start / Stop the pump automatically.

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5. ANOXIC TANK:

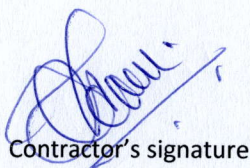
The Raw Sewage pumped from Sewage Transfer pump to Anoxic Tank. In the absence of dissolved oxygen, bacteria will degrade these nitrates to nitrogen gas in a process known as De-nitrification. Not only will the Anoxic Basin serve to convert nitrates to nitrogen gas, but they will also consume BOD, recover some lost alkalinity, and improve sludge quality. In the Anoxic Basin, a process called De-nitrification occurs, whereby heterotrophic bacteria convert nitrates (NO_3^-) to nitrogen gas (N_2) as part of cellular respiration. In short, carbon substrate (BOD) is consumed to synthesize cell mass and nitrate is used as an energy source. The consumption of BOD has the side benefit of reducing aeration requirements, thereby improving the overall energy performance of the system. As part of the de-nitrification process, some alkalinity is recovered and the pH of the system is partially stabilized. Anoxic basin is provided with mixer to keep the basin in mixed conditions.

6. MBR TANK:

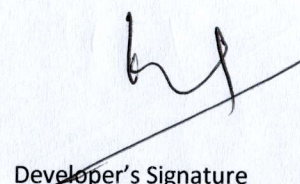
In the membrane tank the solid/liquid separation takes place by means of the water head and the treated water flow out by gravity. The permeate is stored in the permeate storage tank and partial amount of permeate shall be stored in back pulse tank as well. No suction pump of MBR permeate pump is required in our system, which saves considerable amount of maintenance & power cost. Final Treated Water is discharge to treated water tank.

7. HYPOCHLORITE DOSING SYSTEM:

Wastewater treatment with hypo dosing system helps in reducing BOD and COD; deodorizing, de-colorizing and disinfection. The treated water will be reuse for Gardening & Irrigation purpose. The wastewater shall be then subjected to pressure quartz filter and activated carbon guard filter for the removal of suspended solids and excess chlorine & organic from wastewater.



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8. SLUDGE HOULding TANK:

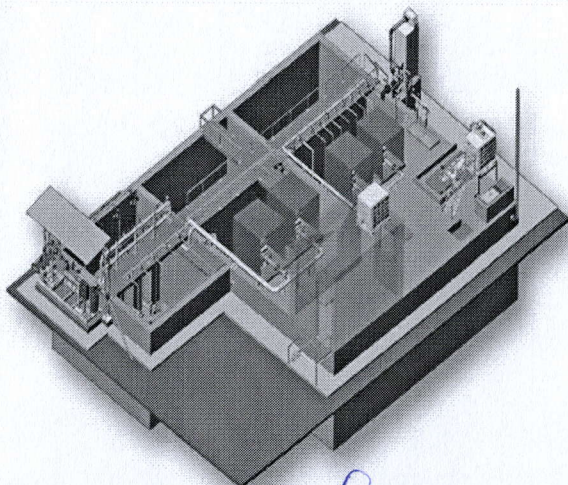
The sludge from clarifiers will be collected into the sludge tank through sludge recirculation pump. Sludge tank shall be provided to collect and increase the sludge concentration with adequate volume and surface area.

9. SLUDGE DEWATERING SYSTEM:

The sludge from the sludge tank will be pumped to sludge dewatering machine for further dewatering. A polyelectrolyte added to the slurry before feed to the machine in order to improve the solid-liquid separation. The polyelectrolyte favors the aggregation and thus the sedimentation of the solid particles. The Dry bed is used for dewatering of the biological sludge produced in the process. The sludge will be collected in top and from one end and liquid will recirculate to the equalization/Buffer tank from another end.

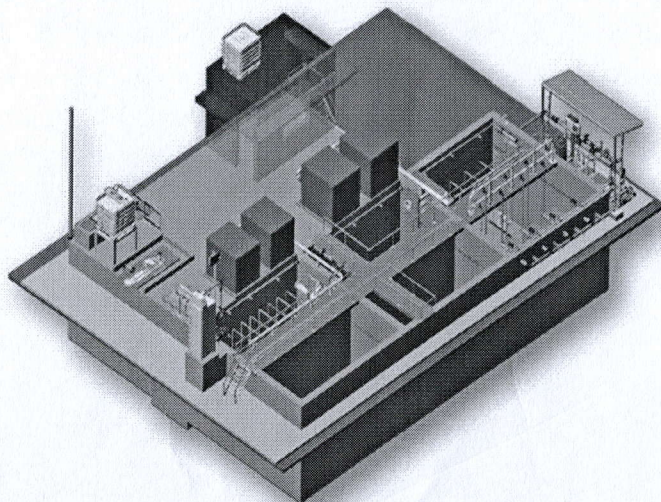
10. MEMBRANE MODULE

The MBR systems utilize "Side-Stream" cross flow membranes configuration. The membrane modules have a robust UPVC housing perfectly suited for rapid local installation using locally source hardware shop available pipes and connection joints. The Module contains large number of ultra-filtration membrane tubes designed to achieve very high permeate production under the cross-flow scouring velocity with minimum risks of any blockage.



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11. DESIGN SPECIFICATION – MEMBRANE MODULES

MBR - STP Plant		
Flow Rate	90	KLD
No Of Modules	1	Nos.
Working Hours	24	Hours
Air Required.	80	M3/Hr.
Tank Size	16.5	M3
Permit Suction Pump-Suction Head 200 Mbar + Permeate Piping Head Loss	3.75	M3/Hr.
Recirculation Pump Capacity	Suitable	M3/Hr.
(Suitable As Per Your Biological System)		
Flux	27	LMH
CIP Tank-1	1.00	M3
CIP Pump	2.00	M3/Hr.

12. MBR TANK DIMENSION

Minimum values ensuring of the installation of membrane modules are shown below.
Please note that the Air-flow rate shown below is just for the membrane operation without considering of total air demand for biological treatment.

Module		No of Tanks	Total Dimension				Total Area Rate (M3/hr.)
Total No	No./Tank		L (mm)	W (mm)	H (Water level) (mm)	Vol. Tank (m ³)	90
1	1	1	2	2.5	2.8	16.5	

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13. DETAILS OF EQUIPMENT

1.	Screen Chamber	
	Quantity	2 Nos. Manual gates
	MOC(Screen)	SS 304
	Spacing	4-10 mm
	Size	Suitable to Civil Tank
2.	Sewage Transfer Pump	
	Quantity	02 Nos. (1W+1S)
	Pump Capacity	3.75 m3/h
	Head	10-12 m
	Type	Submersible cutter /Self Priming
	Make	CNP/ Kirloskar/ Grundfos/Lubi/Equiv.
3.	Air Diffusers	
	No. of Diffuser	01 No.
	Capacity	10 m3/hr. each
	Type	Non-Retrieveable
	Make	Titan OTT/ Greenfield/ Rehau/ Equiv.
4.	Air Blower for MBR	
	Quantity	02 Nos. (1W+1S)
	Capacity	80 m3/h
	Head	0.45 kg/cm2
	Power	3 HP
	MOC	CI
	Type	Positive displacements (Twin Lobe type)
	Accessories	Pressure Gauge& Frame

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	Make	Everest/KPT/Airvak/A1/ Equiv
5.	Air Blower for Aeration, Collection, Sludge Holding	
	Quantity	02 Nos. (1W+1S)
	Capacity	60 m3/h
	Head	0.5 kg/cm2
	Power	3 Hp
	MOC	CI
	Type	Positive displacements (Twin Lobe type)
	Accessories	Pressure Gauge& Frame
	Make	Everest/KPT/Airvak/A1/ Equiv
6.	MBR Modules	
	No of Modules	1 Nos.
	Membrane Area	139 M2
	Flux	27 LMH
	Pore Size	0.06-micron
	MOC	SS304
	MBR Type	Flat Sheet
	Air Requirement	90 Nm3/h
	Make	Toray/Memtrix/Equiv
7.	MBR Permeate Pump	
	Quantity	02 Nos. (1W+1S)
	Pump Capacity	3.75 m 3/h
	MOC	CI
	Pump Type	Self-Priming Centrifugal Pump/Monoblock
	Make	CNP/ Kirloskar/Lubi/ Equiv.

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8.	Return Sludge Pump	
	Quantity	02 Nos. (1W+1S)
	Capacity	1.00 m3/h
	Head	8-10 M
	Type	Monobloc/ Submersible
	Make	Kirloskar/ CNP/ Equiv.
9.	Dosing System	
	Tank Quantity	1 No.
	Tank Capacity	60 Liters
	Tank M.O.C	LDPE
	Pump Quantity	01 Nos. (1W)
	Pump Capacity	0-6 LPH @ 35 Meter
	Pump M.O.C	PP
	Make	Milton Roy/E-dose/Verito/Equiv
10.	Ozone System	
	No. Offered	1 No.
	Capacity	30 gm.
	Method Adopted	Recirculation
	Accessories	Ozone Unit, Skid Mount, SS Ventury and NRV, Oxygen Concentrator
	Make	AM Ozonics/ Global Ozone Corporation/equiv
11.	CIP SYSTEM FOR MBR	
	Quantity	01 No.
	Overhead CIP tank	As per customer site.
	Tank M.O.C	HDPE/RCC

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	CIP skid M.O.C	RCC
	Make	Milton Roy/E-dose/Verito/Equiv
12.	Piping and Fittings	
	Wet Piping	UPVC SCH-80- 1 Lot

	Air Piping	MSEP – 1 Lot
	Air Piping (Submerged)	GI-1 Lot

13.	Panel	
	Quantity	1 No
	Type of panel	Automatic panel with HMI based operation
	Housing	MSEP as required
	Automation Relaxation Cycle	Switch-off for 1.0 minute after every 9.0 minutes
	Mode of operation	Automatic / Manual
	Make of the panel	Greensol Tech

14.	Cable	
	Cable Make	Polycab /Finolex
	Qty	As per site requirement

15.	Cable Tray	
	Cable Tray	Elcon
	Qty	As per site requirement

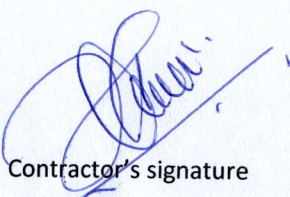
16.	Air Valve	
	Quantity	4 Nos.
	Type	Electrical type
	Body Material	Aluminum Alloy
	Make	Cair N Aira / Torque / Equivalent

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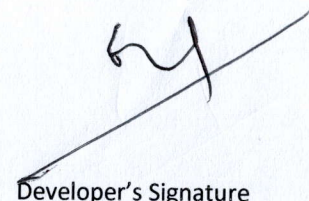
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17.	Pressure Gauge	
	Quantity	1 No
	Range:	0 - 4 kg
	Make	Suzhik / Pointer / equivalent/wika/ Equivalent
	Type	Bottom mounted
18.	Vacuum Gauge	
	Quantity	1 No
	Range	0 - 760 mm of hg
	Make	Suzhik / Pointer / equivalent
	Type	Bottom mounted
	Make of the panel	Greensol Tech
19.	Level Transmitter	
	Quantity	3 No
	Display	8 x 2 Alphanumeric Display, 7*Segment LED
	Mode	Distance OR height measurement
	Input Supply	24V DC
	Accuracy	0.5 % of FSD
	Make	Pune Techtrol / Vega / E&H /ABB/ Equivalent
20.	Flow Meter	BY GT
	Quantity	1 No.
	Type	Electro-Magnetic
	Make	KK/Krone Marshal/ Eureka / Adept/Equiv



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14. MAKE LIST

MAKE LIST		
Sr. No.	Description	Make
A.	Mechanical Equipment's	
1.	Mechanical Bar Screen	Jash / Greensol Tech / Equivalent
2.	Centrifugal Pumps	Kirloskar / CNP / CRI/Equiv
3.	Submersible Pumps	Kirloskar / CRI / CNP / Grundfos/Lubi/ Equivalent
4.	Motors	Siemens/CGL/BBL/Equiv
5.	Dosing Pumps	Milton Roy/E-dose/Verito/Equiv
6.	Air Blower- Twin Lobe Type	Everest/KPT/Airvak/A1/ Equiv
7.	MBR Membrane	Toray/Memtrix/Veolia/Mitsubishi/ Equiv
8.	Agitators	Fibre & Fibre / GREENSOL TECH / Remi / Padmatech
10.	Air Diffusers	Scogen/Rehau/Equiv
11.	HDPE Tanks	Syntax / Reno / Perfect/Equiv
12.	Centrifuge	Humboldt (India) / Alfa Laval / Hiller India / Real Centrifuge (Asia) Pvt. Ltd./Air Tech/ Equivalent
13.	Ozonator	Faraday/Am Ozonics/Equiv
14.	Pipe & Fittings	Astral / Ajay / Ashirwad/Equiv
15.	Butterfly Valves	CRI/Normax/Aira/Equiv
16.	Ball Valves	Same as UPVC Pipes/ Equivalent
17.	Multiport Valve	UKL/RM/Initiative/Equiv
B.	Instruments	
1.	Pressure Gauges	Wika/Waree/Equiv
2.	Level Switches	Powertek / Pune techtrol/Blueseas/Equiv
3.	Flow Transmitter	Danfoss / Aster/Krone Marshal/ Eureka / Adept/Equiv
C.	Electrical	
1.	MCB	Schneider/Siemens/L&T/ Equivalent
2.	Indicator	Teknic / Equivalent
3.	Selector switch	L&T / Selec / Teknic / Equivalent
4.	Contactors	Schneider/Siemens/L&T/ Equivalent
5.	Cable	Polycab/Finolex/Euivalent
6.	Cable Trays	Elcon / Sales Link/ Eqv
7.	PLC	Schneider/Siemens/ABB/ Equivalent
8.	Relay card	Trinity/Equivalent

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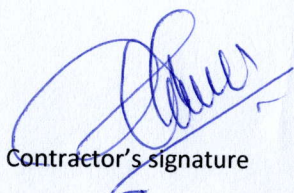
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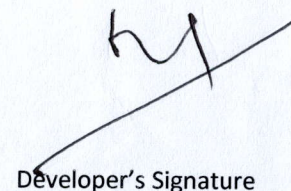
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15. EXCLUSION FROM CONTRACTOR'S SCOPE

- Design & construction of civil tanks & preparation of RCC structural drawings, civil BOQ etc.
- Incoming supply cables & laying of the same up to MCC, including termination.
- All civil works including grading / levelling of site foundations, pipe and underground cable trenches, grouting, platforms, pipe supports, inserts, puddle pipes, structural supports for air grids & pipes.
- Safe storage of equipment supplied by us, at Developer's site.
- Construction of approach roads with fencing & weather protection shed for Distribution board, blowers, pumps, electrical motors etc., etc.
- Utilities at site. e. g. Water, Chemicals, Electricity etc.
- Pump & blower capacities and ratings are as per typical STP setup. If the site demands a different rating of blower, pump, piping, pipe-fitting, electrical or instrumentation then the additional expense would fall under Developer's scope.
- Supply of all types of laboratory equipment or its test reports from any 3rd party, during & after commissioning.
- Emergency power supply and plant illumination system.
- All piping, cabling etc. beyond the termination points as mentioned in our offer.
- Firefighting system including appliances.
- Lightning protection.
- Manpower for operation & maintenance of the plant.
- Initial commissioning consumables, chemicals, lubricants etc.
- NOC / Approval from Pollution Control Board.
- Any other item not specifically mentioned in our scope.
- Chemical storage rooms, Operator Room & Facility inside
- Sludge Handling Storage Room / Sludge Disposable & Transfer
- Transfer Pipeline from Storage to Use / Drain / Garden.



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Developer's Signature

Office: Road No.8, Vishrantwadi Airport Road, Adarsh Colony, Tingre Nagar, Pune- 411032
Phone No: +91 96238 78731 | Email id: estimation@choicegoodwill.com

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16. WARRANTY OF EQUIPMENT

All our equipment is thoroughly inspected before dispatch and therefore can be depended upon for long and trouble-free service. Our liability in respect of any defect or failure in the equipment supplied and commissioned by us or any loss, injury or damage attributable therefore shall be limited to making good by replacement or repairs, provided the equipment is operated and maintained in accordance with our instructions and arise totally from proven faulty design, materials or workmanship. This warranty shall be valid for a period of 12 months from the date of commissioning of the equipment or 12 months from the date of last invoiced dispatch, whichever is earlier. Our liability in no case shall exceed the invoiced value of the equipment supplied by us and we shall not be liable for any consequential damage or loss such as loss of profits, loss of business opportunities, damage to good will or business reputation or any other contractual liability or loss suffered by the Purchaser to third parties. All warranties other than title either express or implied whether arising under law or equity including warranties of merchantability and fitness for a particular purpose are excluded from the contract. This is the essence of the contract.

A. MODE OF MEASUREMENT & RATES:

1. 30 % + GST Advance along with Technically & Commercially clear purchase order.
2. 50 % + GST on pro-rata basis against on supply of equipment's at site.
3. 10% + GST on Installation.
4. 10% + GST on Testing.

B. BILLING DETAILS:

Firm Name: Choice Lifestyle

Firm GST No.: 27AAOFC1825B1ZR

Firm Address: Road No.8, Vishrantwadi-airport road, Adarsh Colony, Tingre Nagar,
Pune- 411032

Site Name: Goodwill Verve



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