

## Annexure-1

### Suggested List of Equipments for Sheep Slaughter House at Cheelanahalli Village, Sira Taluk, Tumkur District.

Sl. No.	Description of items	Qty	Amount in Figures	Amount in Words.
1	<p><b>MS Ramp</b> Supply of MS ramp to facilitate unloading of animals. The ramp will be of adjustable height suitable for trucks of different heights. Light enough to be carried to the truck with minimum effort. It should have anti slippage walkway with Aluminum chequered plate and hand rails to prevent animals falling sideways. The width will be about 7 ft and the elevation at truck end will be adjustable between 3 ft – 6 ft in steps of 2 inches.</p>	02 Nos		
2	<p><b>Restrainer</b> Restrainer made of SS 304 construction suitable for sheep. It will have narrow leg space at the bottom and variable spacing at top to suit different types of animals. The Restrainer will be of Rotary type with about 35 inch SS rings solid type resting on rollers to facilitate rotary movement and with suitable holding devices to restrict the movement of the animal prior to slaughtering. The pressure on the animal just enough to hold and yet adjustable to accommodate varying animal width. At the completion of stunning there should be a provision to rotate the restrainer for a preset angle both electrically and manually, release the holding device so as to allow the stunned animal to fall on to the sticking platform in smooth manner with least human interference. This facility must be available to rotate in both direction. The control panel will be of SS 304 with a provision to set the angle of movement, Option to rotate manually as well as by a mechanism must be inbuilt the holding arrangement should take care of max and minimum space in variable length provision.</p>	02 Nos		

3	<p><b>Electrical type stunner with control box</b></p> <ul style="list-style-type: none"> <li>• Supply of Electrical type stunning tongs with control box suitable for sheep</li> <li>• The stunning set shall be of electrical type for stunning sheep prior to killing. Variable stunning voltage with minimum power supply of 1 amp to sheep for stunning</li> <li>• The Unit shall be provided with stunning tongs and spiral cable Stunner tongs made of stainless steel (SS 302)</li> <li>• Shock proof electrical control box with digital display for voltage and current</li> <li>• Electrical supply from the control box to SS tongs through electrical cable</li> <li>• Suitable protection to the operator from exposure from electrical shock</li> </ul>	02 set		
4	<p><b>Sticking platform</b></p> <ul style="list-style-type: none"> <li>• Stainless Steel construction, suitable to place the stunned animal from restrainer or un-stunned animal for bleeding and collection of blood</li> <li>• The overall size of the platform: About 5ft X 3 ft MOC SS 304 grade</li> <li>• Trough of 8 inch, 3 ft wide wherein the throat of the animals will be slit</li> <li>• The top of the platform shall be made out of minimum 2 mm thick 304 SS sheet platform with moving polymer wheels (about 6 inch diameter) underneath</li> <li>• Length of track on which the platform moves must be equivalent to the length of the restrainer</li> <li>• Must be easily washable and must be so designed without any blood splash outside the platform</li> <li>• Blood collection tank of capacity (100 lit) – 2 Nos</li> </ul>	2 Nos		

5	<p><b>Bleeding Trough</b></p> <ul style="list-style-type: none"> <li>• SS Blood collecting trough for collection of bloodbeneath the bleeding rail</li> <li>• Length: Minimum 4 meter long</li> <li>• Provision for collection of blood and has its passage to blood processing unit</li> <li>• Platform must be wide enough to prevent anyblood splash away from the trough</li> </ul>	2 Nos		
6	<p><b>Electrical hoist</b></p> <ul style="list-style-type: none"> <li>• For lifting the bled animal/ stunned animal,hoisting and transferring on to the rail</li> <li>• Hoist shall be powered and switch operated foreasy maneuver</li> <li>• Capacity: 500 Kg; Minimum 3 mts</li> </ul>	02 Nos		
7	<p><b>Overhead rail/track system</b></p> <ul style="list-style-type: none"> <li>• The Overhead track system shall be used to carry the sheep carcass in inverted position with the head end facing downwards, till all the dressing operations are complete</li> <li>• Overhead rail with provision for manual gravity operation</li> <li>• Made of about 50 mm dia “C” Class MS pipe fixed onabout 50x10mm rail hangers made of MS flats at about 700mm spacing, properly shaped and weldedproperly to the “MC 100 X 50mmsystem</li> <li>• The design of the structure and supportingbrackets shall provide gradual slope in the overhead rail for gravity movement of the roller hooks with minimum effort A stopper actuated mechanically from floor level for every 5 meter or any other required locationshall be made available</li> <li>• The vertical supports shall be fixed to the floorby expansion bolts and the overhead horizontalsupports shall be grouted to the walls whereverapplicable.</li> <li>• Provision to divert the moving animal to auxiliary conveyor or outside the conveyor should be provided required</li> <li>• Length of the rail will be about 35mt</li> <li>• Rates to be quoted on per meter basis</li> </ul>	35 meter Approx		

8	<p><b>Carcass wash</b></p> <ul style="list-style-type: none"> <li>• For water wash of the carcass to remove contaminants from the sheep carcass</li> <li>• The system will have SS barriers or tiled walls 8 ft long on both sides of conveyor</li> <li>• Each animal will be surrounded by water injection pipes in vertical direction and fitted with sprayers receiving water from a high pressure pump (discharge at about 150 lpm)</li> <li>• Sufficient gap to be available under the overhead rail for free movement of carcasses which will be held stationery during wash with clean potable water</li> <li>• An additional spraying need to be provided at the end for fine spraying in mist form of chlorinated water (200 ppm) for a short duration</li> <li>• All stainless construction for maximum hygiene. The floor at bottom will be sloping towards the gutter line beneath the overhead rail.</li> <li>• A walk way in Aluminum checquered plate 5 mm thick is to be installed for movement of operator</li> <li>• The Unit shall be used for washing of the Carcass by means of high pressure water jets</li> <li>• The Washing cabinet made of SS 304 shall be formed using two screens on both sides of the rail to completely protect splashing/spilling of wash water.</li> <li>• Capacity 3 Animals per batch</li> <li>• Measurements: Height 7 ft Length 8 ft and Width 6 ft</li> </ul>	1 No		
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9	<p><b>Dehider</b></p> <ul style="list-style-type: none"> <li>• A pneumatic powered dehider for skinning sheep</li> <li>• Motor Power: About 0.50hp</li> <li>• Operating Pressures: About 45 psi</li> <li>• Air Consumption: 12 ft<sup>3</sup> / min</li> <li>• Blade Speed (in oscillations): About 6500/min</li> </ul>	1 No		
10	<p><b>Chiller Railing</b></p> <ul style="list-style-type: none"> <li>• <b>Overhead Rails:</b>About 50 mm diameter “C” Class MSpipe fixed on about 50 X 10mm rail hangers made ofMS flats at 700 mm spacing, properly shapedand welded properly to the “C” channels 150 X 75 mm supported from the floor by ‘I’ beam secured by expansion bolts</li> <li>• Provision to bypass the in between rails by selector switches actuated from the floor area must be made available to bring out the chosen carcass for meat preparation</li> <li>• Length: About 20 meter</li> <li>• Rates to be quoted on meter basis</li> </ul>	20 mt		
11	<p><b>Chiller Change over switches</b></p> <ul style="list-style-type: none"> <li>• Made of rust free stainless steel to permit un-hindered travel of the roller trolleys at everychange of direction of the rail system</li> <li>• The switches can be lifted perpendicularly or sidewise to permit direct or directional changes of the travel of the trolleys, with manual operating chains and locks wherever necessary to facilitate changeover of the carcasses on rail</li> </ul>			

12	<p><b>Online overhead rail electronic scale</b></p> <ul style="list-style-type: none"> <li>• Electronically operated online digital weighing scale for weighing of carcass after dressing operations with digital display</li> <li>• Range: Maximum 500 Kg</li> <li>• Calibration report must be provided</li> <li>• Height adjustable</li> <li>• Environmentally protected load cells</li> <li>• Four load cells structure for rugged and durable weighing</li> <li>• Ramp ON &amp; Ramp OFF provision</li> <li>• Built-in rechargeable battery for continuous use</li> <li>• Handles for convenience of positioning and removal</li> </ul>	01 unit		
13	<p><b>SS Chutes</b></p> <ul style="list-style-type: none"> <li>• Wall mounting type chute suitable for gravity conveying of disposable parts of the animals at different stages of dressing</li> <li>• The Chute shall be of adequate size and shall be made out of 2 mm thick 304 SS sheet of various size for gravity conveying of disposable parts including supports.</li> <li>• The supply includes chutes for the following operations: <ul style="list-style-type: none"> <li>- SS Chute, 300 mm wide for Heads / Legs</li> <li>- SS Chute, 500 mm wide for Hides</li> <li>- SS Chute, 300 mm wide for offal</li> </ul> </li> </ul>	4 Nos		
14	<p><b>Offal collection tanks</b></p> <ul style="list-style-type: none"> <li>• Tank for collection of offal in byproducts room</li> <li>• Internal dimension: 600 mm X 600 mm X 600 mm</li> <li>• Thickness: Minimum 2.5 mm</li> <li>• Wheeled unit with supporting handle for easy movement</li> </ul>	6 Nos		

15	<p><b>Cut up parts preparation and Deboning table</b></p> <ul style="list-style-type: none"> <li>• SS table (Size 1200 mm X 900 mm X 700 mm)with top side Nylon plate (50 mm thick)</li> <li>• Bottom side made of MS galvanize dangles</li> <li>• Top Sheet SS sheet of minimum 3mm thickness</li> </ul>	4 Nos		
16	<p><b>SS Working Tables</b></p> <ul style="list-style-type: none"> <li>• These tables shall be used for receiving of heads&amp;legs, hides and offals from the carcasses under overhead rails</li> <li>• These tables shall be made out of 2 mm thickSS 304 sheets and of size 900 mm width x 1200mm long and 800 mm height.</li> <li>• The table shall have rim all around with a depthof minimum 50 mm and supported on SS pipelegs with ball feet.</li> <li>• The top rim shall be bent and turned down toavoid sharp edge and also to provide sufficientstiffness to the table.</li> <li>• The table shall have slope towards one end witha drain pipe and valve</li> </ul>	10 Nos		
17	<p><b>SS Apron Wash</b></p> <ul style="list-style-type: none"> <li>• The Apron wash shall be used by the butcher for washing their aprons from blood stains after slaughtering of the animal</li> <li>• The Unit shall be in 304 SS execution and self-supporting type with non-skid platform and foot operated valve and twin shower header and drain</li> <li>• The unit should have enclosure on 3 sides to avoid splashing of water</li> <li>• Measurements: 8 ft Height, Length 8 ft and Width 8 ft</li> <li>• Gap between sheets: Minimum 2 meter</li> </ul>	1 No		

18	<p><b>Differential Platforms</b></p> <ul style="list-style-type: none"> <li>• For standing of the meat handlers and undertaking dressing operations on the overhead rail</li> <li>• Made of MS angles with split level platforms made of Aluminum chequered plates</li> <li>• Measurements:10 ft Length, Width 2 ft, Height 3ft</li> <li>• One step at 1.5 ft height</li> </ul>	6 Nos		
19	<p><b>Raised Platform</b></p> <ul style="list-style-type: none"> <li>• Size: 2000 X 900 ht X 500 mm</li> <li>• SS304 frame made of 50 x 50 x 4 mm angles welded to six legged frame and fitted with minimum 5 mm thick Aluminum chequered plates on top of the working platform</li> </ul>	4 Nos		
20	<p><b>Hand Wash Basin</b></p> <ul style="list-style-type: none"> <li>• The Wash basins shall be made of 304 Stainless steel execution and wall mounting type</li> <li>• The wash basin shall be supplied with water connection and foot operated valve.</li> <li>• The wash basin shall have SS back up top plate to take care of back splash, central drain connection and a soap dispenser.</li> </ul>	5 Set		
21	<p><b>Wire mesh Gloves, scabbard and Aprons</b></p> <ul style="list-style-type: none"> <li>•Metal mesh 5 finger gloves</li> <li>• Aluminium scabbard with removable front</li> <li>• Heavy duty PVC Boning Aprons</li> </ul>	20 Sets		



22	<p><b>Knife Sterilizer</b></p> <ul style="list-style-type: none"> <li>• The knife sterilizer shall be in 304 SS construction</li> <li>• Hot water inlet connection and a drain</li> <li>• Wall Mounting type</li> <li>• The unit shall be provided with industrial type electrical heating element of minimum 0.5 KW rating.</li> <li>• Fully 304 SS Grade</li> <li>• Minimum 4 Rows for knife holding.</li> <li>• Water inlet &amp; outlet</li> <li>• Power - 230V/50HZ</li> </ul>	4 Set		
23	<p><b>SS Gambrels with supporting hangers</b></p> <ul style="list-style-type: none"> <li>• The SS Gambrels shall be made out of SS 304 and shall be suitable for hanging the sheep on both rear legs, during the dressing operation on over-head rail system.</li> <li>• The SS gambrel shall be provided with SS hook with roller for free movement on round bar rail network.</li> <li>• The gambrels will be of telescopic type to accommodate various size of Animals</li> </ul>	250 Nos		
24	<p><b>S - Type hooks made of Stainless Steel</b></p> <ul style="list-style-type: none"> <li>• For hanging of sheep carcass</li> </ul>	250		
25	<p><b>MS Shackling chain with hooks for hanging sheep carcass</b></p> <ul style="list-style-type: none"> <li>• For chaining of the stunned animal for bleeding of the blood trough</li> <li>• Minimum length: 6 mt</li> <li>• Made of rust free steel</li> </ul>	20		

26	<p><b>Brisket Saw with blade gross tooth</b>  Stainless sturdy handle and enough power cable 18 kg 560mm 1300Watt  380v/50Hz – 3phase  Cut Speed: About 50 Hz  903 ft / min  Cutting Cycle Time: About 3 sec  Control Handle; Single Trigger; Electric  Blade Length: About 9.5 in 241 mm; 10.5 in 267 mm; 11.5 in 292 mm</p>	02		
27	<p><b>Hose reel with gun</b></p> <ul style="list-style-type: none"> <li>• The hose reel with Gun shall be used for cleaning of the floor, walls and also the equipments after slaughtering is completed</li> <li>• The Hose roll drum shall be swivel type and equipped with 20mm water hose of length Minimum 60 meter and ending with GM shut-off nozzle</li> <li>• Pressure of the ejected water shall be at least 80 psi</li> </ul>	1 Set		
28	<p><b>S.S. Knife Set</b></p> <ul style="list-style-type: none"> <li>• Butchers Knife Wide 12"</li> <li>• Butchers Knife Wide 10"</li> <li>• Butchers Knife Narrow 12"</li> <li>• Butchers Knife Narrow 10"</li> <li>• Chopper 8"</li> <li>• B. C. Chopper 8"</li> <li>• Sharpening Stone 10"</li> <li>• Sharpening Rod 12"</li> <li>• MOC : SS 410/414</li> </ul>	20 Sets		

29	<p><b>Knife Sharpner</b></p> <ul style="list-style-type: none"> <li>• Motor power: Min. 0.09 kW; Voltage: 220 V II 50 Hz</li> <li>• The knife sharpener shall be electrically operated and with grinding stone for periodic sharpening of the knives used in the slaughterhouse</li> </ul>	1 No		
30	<p><b>Air Curtain</b></p> <p>The Air curtain shall be suitable for 1.2 M width door and shall be used at the building opening to the slaughter hall.</p>	04 Nos		
31	<p><b>Fly Catchers / Insecticutors</b></p> <ul style="list-style-type: none"> <li>• This unit shall be of Industrial type and provided with ultra violet lamps to destroy flies in the slaughter hall</li> <li>• The Unit should be hanging type from the roof and complete with necessary electrical connection</li> </ul>	10 Nos		
32	<p><b>Trolleys for carrying meat</b></p> <ul style="list-style-type: none"> <li>• Three tier trolley made of SS with handle and wheels (four) for transporting the meat in tray or tubs from slaughterhouse to laboratory or to sale counter</li> <li>• Number of trays per trolley – 24 nos</li> <li>• Tray size 300 x 600 40 mm in SS 304</li> <li>• Size: Height 1200 mm X Length 950 mm X Width 750 mm</li> <li>• Tier height: 350 mm</li> <li>• Capacity: To carry 50 Kg meat</li> <li>• Suitable tubs fitting the tiers in the trolleys (20 No)</li> </ul>	10		
33	<p><b>Band /Bone cutting Saw</b></p> <ul style="list-style-type: none"> <li>• Free Standing Model</li> <li>• Fully SS Machine with Moving Carriage – 3 Kw Motor Power – 380v/50Hz –Cutting 415 x 360 mm – Blade Length – 3100mm</li> </ul>	03		

34	<p><b>Weighing balance</b></p> <ul style="list-style-type: none"> <li>• Capacity : 20kg</li> <li>• High resolution up to 30,000 counts</li> <li>• LCD Display</li> <li>• Advanced Microprocessor based design</li> <li>• Power 230v/50Hz</li> <li>• Built-in rechargeable battery backup</li> <li>• Environmentally protected load cell</li> <li>• Rust proof stainless steel platter</li> <li>• Auto power off and auto calibration</li> <li>• RS 232 C Interface</li> <li>• Pan size : 290 x 240 mm</li> <li>• Readability : 0.5kg</li> </ul>	04		
35	<p><b>Tray packing machine</b></p> <ul style="list-style-type: none"> <li>• Size: For packaging 250 g, 500 g, 1000 gmeat</li> <li>• Moulded heater elements</li> <li>• Full SS construction</li> <li>• Pre-heating of approximately 3-4 min</li> <li>• PID controller with digital display</li> </ul>	05		
36	<p><b>Hand Wash Sinkwith Leg operated Faucet</b></p> <ul style="list-style-type: none"> <li>• Made of rust free SS</li> <li>• Size: 450 x 350 x 300 mm with footoperated faucet</li> <li>• Valve and basin made of SS</li> <li>• 1mm thick plate, waste connector etc</li> <li>• Provision for hot and cold water mixing</li> </ul>	10		

37	<p><b>Boiler for generation of hot water:</b></p> <ul style="list-style-type: none"> <li>• Hot water for cleaning of the slaughter premises</li> <li>• Non IBR Boiler 400 kg per hr with feed water tank which supports diesel tank chimney and steam line upto hot water storage tank</li> <li>• Water heating temperature up to 85° C</li> <li>• Hot water storage tank 1000 litre capacity SS 304 2 mm thick with piping to reach every part of the slaughter hall</li> </ul>	01		
38	<p><b>Chlorinated water storage tank</b></p> <ul style="list-style-type: none"> <li>• For supply of 200 ppm chlorinated water for disinfection of carcass</li> <li>• 1000 litre capacity with piping upto carcass wash in slaughter hall</li> </ul>			
<b>Laboratory Equipments</b>				
39	<p><b>Incubators</b></p> <ul style="list-style-type: none"> <li>• Outer Shell MS with Powder coating, inner chamber SS 404 grade</li> <li>• Trays SS 304 grade Mesh Tray, Air Circulation Forced Air Circulation with impeller</li> <li>• Heater Air Heater (watts may varied by actual size)</li> <li>• Control PID Digital Controller, Door Gasket Silicon Gasket</li> <li>• L Handle ABS handle, Leg Height adjustable bush</li> <li>• Temperature : Range Ambient to 60 °C</li> <li>• Control : PID Digital Controller</li> <li>• Power : 230 Volts 50 Hz</li> <li>• Dimensions: : About 18 x 18 x 18 inch</li> </ul>	02		

40	<p><b>Hot air ovens</b></p> <ul style="list-style-type: none"> <li>• Outer Shell MS with Powder coating,</li> <li>• Inner Chamber SS 404 Grade</li> <li>• Trays SS 304 Grade</li> <li>• Forced Air Circulation with impeller</li> <li>• Air Heater</li> <li>• Insulation Fiber Blanket with Fire clay and Brick</li> <li>• Temperature : Ambient to 200.DEG C Regular working</li> <li>• Control : PID Digital Controller/Thermostat</li> <li>• Power : 220 Volts 50 Hz</li> <li>• Dimensions: : 18 X 18X 18 Inch</li> </ul>	02		
41	<p><b>B.O.D Incubator</b></p> <ul style="list-style-type: none"> <li>• Outer Shell MS with Powder coating,</li> <li>• Inner Chamber SS 404 Grade</li> <li>• Trays SS 304 Mesh Tray</li> <li>• Forced Air Circulation with impeller</li> <li>• Air Heater</li> <li>• Insulation Fiber Blanket with Fire clay and Brick</li> <li>• Temperature : 4° C to ambient</li> <li>• Control : PID Digital Controller/Thermostat</li> <li>• Power : 220 Volts 50 Hz</li> <li>• Dimensions: : 4 CUBIC FEET</li> </ul>	02		

42	<p><b>WaterBath</b></p> <ul style="list-style-type: none"> <li>• Outer Shell SS 404 /MS with Powder coating,</li> <li>• Top Plate S.S. 304/MS Grade</li> <li>• Heater coil Heater</li> <li>• Temperature : Ambient to 100 DEG .C Regular working</li> <li>• Control : PID Digital Controller/Thermostat</li> <li>• Power : 220 Volts 50 Hz</li> <li>• Dimensions: : 6 Holes</li> </ul>	02		
43	<p><b>Laminar Airflow</b></p> <ul style="list-style-type: none"> <li>• MS Powder Coated with SS 304</li> <li>• Mattle Mesh</li> <li>• Power : 220 Volts 50 Hz</li> <li>• Dimensions: : 4 x 2 x 2 FEET</li> </ul>	01		
44	<p><b>Autoclave Vertical</b></p> <ul style="list-style-type: none"> <li>• Full Stainless with including lid</li> <li>• Fitted with MS Legs</li> <li>• With analog temperature display</li> <li>• Water Inlet and Drain connections</li> <li>• 145 X 22 Inch with controller</li> </ul>	02		
45	<p><b>Microcentrifuge</b></p> <ul style="list-style-type: none"> <li>• A Quiet and Efficient unit, with a small footprint</li> <li>• RPM and run-time can be set on the digital display, using the membrane key pad</li> <li>• Pulse option also provided</li> <li>• Standard fixed angle rotor for 6x1.5ml micro tubes</li> <li>• Speed upto 10,000 RPM</li> </ul>	01		

46	<b>Analytical Balance Imported</b> <ul style="list-style-type: none"> <li>Weighing Range : 120 Gram Accuracy : 0.1 mg</li> </ul>	02		
47	<b>Microscope</b> <ul style="list-style-type: none"> <li>Microscope with Siedentopf head</li> <li>Reverse nosepiece, E-Infinity,</li> <li>S- Plan Imported achromatic objectives 4x,10x 40x, 100x &amp; WF 10x Fov</li> <li>18mm Eye piece</li> <li>LED illumination</li> </ul>	02		
48	<b>pH Meter</b> <ul style="list-style-type: none"> <li>Meter for measuring pH of meat</li> <li>0-14 pH</li> <li>Resolution : 0.01 pH</li> <li>Temperature Range : 0.0 to 100°C</li> <li>Display: Digital LED Display</li> <li>Power Supply : 230VAC <math>\pm</math>10%;50 Hz</li> <li>Calibration check facility &amp; Calibration Error indication for 7.00 &amp; 4.00 pH</li> <li><b>Accessories:</b> Glass pH Electrode (0-70°C), Standard Buffer Tablets, Electrode Stand with Clamp, Dust Cover, Power Cord, Operational &amp; Instruction Manual</li> </ul>	01		
	<b>General Instructions</b> <ul style="list-style-type: none"> <li>All equipments must be covered with Comprehensive warranty for three years</li> <li>Post Warranty AMC to be quoted</li> <li>Manufacturer Test Certificate should be added for all laboratory equipments</li> </ul>			