

No.	Equipment Category	Equipment Supplied by Dairy Contractor	Generic Specs (Not in specific order)	Value add-ons (part of tender evaluation)
			<p>The systems and equipment to be provided as outlined in the following section(s) are to be products of established commercially available Dairy Equipment manufacturers.</p> <p>All equipment to be supplied and installed are to be purpose built, installed, connected and operated as an integrated dairy operation(s). Including but not limited to: Milking, milk storage, animal housing/handling, ventilation, and manure transfer equipment.</p> <p>All equipment to be supplied and installed is to be supported by an established equipment dealer with a permanent base of operations (within 2 hours of the installation site), maintaining an inventory of supplies and replacement components, and capable of providing technical service and support</p> <p>All systems must meet all applicable regulatory and animal welfare standards: Including but limited to DFO (Dairy Farmers of Ontario) Pro Action, OMAFRA</p> <p>All animal equipment in regular contact with livestock, including but not limited to: milking parlour(s), penning, stabling, gating to be galvanized unless otherwise specified</p> <p>Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.</p> <p>All electrical systems to meet CSA standards</p> <p>For each item of equipment and each integrated system: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts. Include manufacturer's printed operation and maintenance instructions.</p> <p>Provide operating procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.</p> <p>Any equipment specified in the following section(s), overrides the standard specified equipment in the general/mechanical/structural design. Including but not limited to Galvanized versus Stainless Steel, enclosure ratings etc.</p>	
	General			

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D1.2	Shop Drawings		Shop drawings to include: Detailed Milking equipment installation drawings (plan view) to illustrate implementation of concept approach, utilizing the equipment to be supplied and installed.	
			Shop drawings to include: Overall system schematics, including key sizing and capacity requirements for key components	
			Shop drawings to include: Detailed layout and cross-sections for the milking parlour(s) including dimensions and elevations.	
			Shop drawings to include: Detailed Animal Equipment installation drawings (including plan view and elevations), utilizing the equipment to be supplied and installed.	
			Shop drawings to indicate: Materials, thickness, finish, connections, joints, anchorage, supports, details and accessories	
			A mock-up or at minimum a tour of an existing operational dairy facility utilizing the equipment to be supplied to be provided by supplier for inspection by client	
C.01	Double 8 Parrallel Rapid Exit Parlour Stall	Double 8 Parrallel Milking Parlour	Galvanized parlour frame	
		Parlour cabinets, lower cabinets, CIP manifold	Stainless steel (SS) butt pans, Continuous SS upper cabinets, Continuous SS lower cabinets, SS curbing in parlour area, SS Clean in Place (CIP) trays	
			To include milking hose support offset from center of stall, remote start of milk claw	
			Operator controlled entrance/exit gates	
C.02	Crowd Gate	Crowd Gate	To be fabricated of black mild steel, hot dip galvanized post fabrication, on site fabrication as required, all metal surfaces are to be free of sharp edges and corners, weld splatter, burrs and blemishes	
		Master & remote control box	Control boxes located at back of holding pen & milking parlour	
			Min. 2.1m (7Ft) clearance measured from holding pen floor to structure	
C.03	Holding Pen Fencing	Vertical penning posts with horizontal rails	Components (Posts, railing, gating, one way gates as required by layout) to be galvanized	
			Horizontal railing to match holding pen floor slope	
			Vertical penning posts at 1.5m (5Ft) center on center	
<u>Dairy Contractor Supplied Mechanical Equipment</u>				
		Industrial Air Compressor	Provide three phase industrial air compressor, capable of supplying compressed air demand as required by integrated system	

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C0.4	Air Compressor	Variable speed control (VSD)	Provide automatic draining & dryer as required	
		Air dryer & automatic tank drain	Air dryer, capable of supplying compressed air demand as required by system	
		Misc. parts, fittings and piping to complete system integration		
C.05	Vacuum Equipment	Vacuum pump with silencer, stand	The system is to include all pump(s), motor(s), pipe fittings, reservoirs, controls, regulators, hardware and outlets to complete a fully functional system capable of sustaining all associated milking units.	
		Variable speed control (VSD)	Provide lobe type, oil-less vacuum pump capable of supplying the required amount of vacuum as required by the intergrated system	
		VRM/VRS Regulator	Provide variable speed transmission/control of the pump	
		Digital vacuum gauge	Performance verification on vacuum pumps to satisfy the following conditions; Flow: +/- 10%, Pressure: +20%, -5%. The maximum allowable system leakage is 10% at specified pressure/vacuum.	
		Misc. parts, fittings and piping to complete system integration	All vacuum system components to comply with DFO (Dairy Farmers of Ontario) requirements	
		Vertical penning posts with horizontal rails as required for layout	Include all penning, gates as shown on plans and schedule complete with mounting and installation hardware and brackets	
		Self locking head rail	Cattle facility to incorporate 'self locking headgates' as indicated on the plans and schedule. Headgate lock design to maximize operator safety, through specific design considerations or auxilary release mechanism	
		Water bowls	All penning, gates are to conform to standard industry practise to ensure functionality and longevity of installation. Including but not limited to; All Penning to incorporate below grade anchorage, fastening to suitable footing.	
		Swinging Cow Brush(s)	Include all waterers as shown on plans and schedule and coordinate with mechanical contractor as required	
		Misc. parts, fittings to complete system integration	Penning system to statisfy all applicable quality standards; CSA International, ASTM	

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CO.6	Penning Equipment		Include all swinging cow brushes as shown on plans and schedule. Coordinate with mechanical contractor as required	
			All penning, gates are to be fabricated of black mild steel, hot dip galvanized post fabrication	
			All metal surfaces are to be free of sharp edges and corners, weld splatter, burrs and blemishes	
CO.7	Animal Equipment		The animal comfort/traffic mats to be provided are to be products of established commercially available manufacturers, designed to suit the intended installation application as outlined on the plans and schedule . Alley Mats: Animal friendly slip resistant mats. Mats are designed specifically for floor covering applications in the agricultural industry.	
		Cow Comfort/Traffic Mats	All animal comfort/traffic mats to be a minimum of 19mm thick.	
			Include all cow comfort/traffic mats as indicated on plans and schedule	
CO.8	Manure Equipment	Manure Transfer Pump with Agitation	System to be sized by supplier to suit site conditions and operating parameters. Spec'd motor must be three phase.	
		Manure Scrapers with drive unit, electronic control	Include all components to complete an integrated manure handling system as shown on plans and schedule. Including, alley scrapers, cross gutter, manure transfer pump(s), agitation pump(s).	
		Cross Gutter Cleaner with drive unit, electronic control	Provide all floor inserts, accessories and fastening components necessary to complete a fully functioning integrated system. Coordinate with concrete, mechanical, electrical contractor as required	
			Include all required exterior manure transfer pipe as necessary to transfer manure to concrete storage pit. Coordinate with concrete, civil contractor as required	
		Basket Fans (Parlour)	Controller(s) to be capable for ventilation requirements for all animal housing areas as outline on the plans and schedule	
		Insulated Curtains (Assembly)	Controller to be purpose built, microprocessor based controls capable of required functions	
		Curtain Blowers	Controller to be field programmable, complete with all necessary hardware to complete a fully functional system.	
		VHV (Mechanical Ventilation)	Controller to support remote login/system monitoring	
		Air Inlet Transmission Kit (Chimneys)	Controller to incorporate transient protection, permanent memory, remote control and to be enclosed in a non-corrosive PVC enclosure	

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C0.9	Ventilation Equipment	Ventilation Controller	VHV fans as shown on plans and schedule to incorporate variable speed functionality through ventilation controller and manual remote control	
		Exhaust Fans	Controller to allow for variable speed operation and manual remote control of VHV fans	
			Insulated sidewall curtains as shown on plans and schedule	
			Insulated sidewall curtains to provide a minimum of R3.0 rating	
			Exhaust chimneys as shown on plans and schedule. To be constructed of non-corrosive materials	
			Exhaust chimneys actuation to be incorporated into automatic ventilation controller. Through the use of inlet damper or guillotine shut-off panel	
			Exhaust chimney shaft to be insulated to prevent condensation and freezing	

Dairy Supplied Milking & Cooling Systems

		Milking claws (QTY: 16)	System in the corresponding section must be installed, connected and operated as an integrated milking system. The system must meet all CQM requirements. Milk meters to be ICAR & DHIA approved	
		Identification system; controller, stall antennas (Qty: 16), identification tags (QTY: 100), software, computer.	Stainless Steel receiving jar, low line sized to handle milk flow from 16 units	
		Milk Meters, displays, take-offs, power supplies (QTY:16)	The system is to include all pump(s), motor(s), pipe fittings, valving, filter(s), pre-cooling to complete a fully functional system	
		SS receiving jar complete with milk pump	The system is to include all components and controls necessary to automate the Clean in Place (CIP) process including an air purge	
		VSD liquid level control	Milker units displays to be complete with milk flow indicator, pulsation off switch and stimulation pulsation sequence.	
		SS Cabinet for clean filters	Pulsation to utilize fresh air from a clean source	
		SS low lines, milk & wash	Provide precision electronic milk flow metering devices. +/- 2% accuracy or better, along with automated take-off integrated into a single per stall controller.	
		Automatic wash control	Milk data to be transferred automatically to office PC. System to record milk production and milk time	

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C1.0	Milking Equipment	Wash System, 250L Wash Vat	Corresponding cow identification system with leg or neck transponders.	
		Misc. parts, fittings and piping to complete system integration	Milking equipment system to include all associated brackets, hardware, controls, control panels, safeties, pneumatic connections to complete a fully functional system consistent with current commercial practises	
		Parlour Mats:	Operator (Human) friendly slip resistant cushioning mats. Mats are designed specifically to offer seamless transitions such to not trap dirt & debris during cleaning.	
C1.1	Cooling Equipment	Condensing Unit	Supply and install all equipment, materials to provide milk pre-cooling and refrigerated holding system as outlined on the plans and schedule.	
		Motorized Shutter	Provide an automatic control panel with display. Panel to control compressor cycling, agitation, wash and chemical dispensers	
		Rheostat, Single Speed Temp Controller for Shutters	Provide an automatic data logger capable of multiple recording points with one central controller, as required by DFO (Dairy Farmers of Ontario). Data logger to allow for remote login/monitoring of system	
		Plate cooler, 51 Plate dual pass	Milk cooling system to include all associated brackets, hardware, controls, control panels, safeties to complete a fully functional system consistent with current commercial practises	
		Freheater		