**TOWN OF ORANGE, CONNECTICUT**

**MINIMUM SPECIFICATIONS**

**NEW 3.0 CUBIC YARD CLASS FOUR WHEEL DRIVE LOADER**

**General**

 The intent of these specifications is to describe the minimum requirements for the above machine. The bidder must note in writing any deviations or exceptions to these requirements. The bidder must fully complete the check list. Manufacturers specification sheets alone are not acceptable as proof of qualification.  **Failure to note specific exceptions will be grounds for rejection. Failure to complete the checklist accurately will be grounds for rejection.**

**COMPLIANCE**

**ENGINE**

Yes\_\_ No\_\_ Engine shall meet the EPA non-road emission standard: Interim Tier 4/EU Stage IIIB

Yes\_\_ No\_\_ Six Cylinder, turbocharged, charge air cooled diesel engine and shall be designed and built by the manufacturer

Yes\_\_ No\_\_ Engine shall have a wet-sleeve cylinder liner designed for improved cylinder cooling over dry sleeve and cast-in-bore design for improved cylinder and piston ring durability.

Yes\_\_ No\_\_ Engine displacement shall be no less than 5 liters

Yes\_\_ No\_\_ Engine net peak power shall be no less than 163 hp @ 1900 rpm

Yes\_\_ No\_\_ Engine shall develop at least 38% torque rise and should have at least 496 lb ft @ 1600 rpm net peak torque

Yes\_\_ No\_\_ Fuel system shall be high-pressure, common rail

Yes\_\_ No\_\_ Daily check points shall be accessible from one side of the engine and shall be done from ground level

Yes\_\_ No\_\_ Under-hood engine air cleaner shall be dry type, duel element with restriction sensor and in cab restriction warning light

Yes\_\_ No\_\_ Access to engine will be open from both sides with side opening , full access service doors

Yes\_\_ No\_\_ Engine shall have no less than 30-micron rated primary fuel filter with water separator

Yes\_\_ No\_\_ Loader shall be equipped with heavy-duty steel fuel tank guard

Yes\_\_ No\_\_ Service interval for the engine oil and filter shall be 500 hours

Yes\_\_ No\_\_ The unit shall have an auto-idle, auto-shutdown feature for the engine as standard equipment

Yes\_\_ No\_\_ The electrical system shall be 24 volt with 80 amp alternator

**COOLING SYSTEM**

Yes\_\_ No\_\_ Unit shall have a proportionally controlled, hydraulically driven, 90 degree-swing-out fan, standard equipment

Yes\_\_ No\_\_ The unit will have two sided access to all coolers

Yes\_\_ No\_\_ Air intake shall be pre-screened (3mm perforations) for each cooling component

Yes\_\_ No\_\_ Cooling system shall be isolated from the engine compartment

Yes\_\_ No\_\_ Unit shall have a coolant recovery tank provided

Yes\_\_ No\_\_ Unit shall have a fan-guard

Yes\_\_ No\_\_ Fluid levels should be easily checked by sight gauges or overflow tank

**POWER TRAIN**

Yes\_\_ No\_\_ Unit shall have a torque-converter, power shift transmission – 4 forward, 3 reverse gears

 Hydrostatic drive systems will not be considered.

Yes\_\_ No\_\_ The transmission shall be electronically controlled, adaptive, with load and speed dependent shift modulation

Yes\_\_ No\_\_ Shift modes shall be manual, auto to 1st or 2nd, kick down or kick up/down

Yes\_\_ No\_\_ Service interval for the transmission oil filter shall be 2000 hours

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**POWER TRAIN CONTINUED**

Yes\_\_ No\_\_ The transmission clutch calibration shall be performed from the cab monitor and shall have three clutch cutoff settings adjustable on the switch pad

Yes\_\_ No\_\_ Unit shall have joystick mounted forward-neutral-reverse, and gear-selected lever, kick-down button on hydraulic lever. Unit shall also have a manual shit feature that allows pushbutton gear changed, one gear at a time, or automatic transmission feature

Yes\_\_ No\_\_ Sight gauge showing transmission fluid shall be at ground-level

Yes\_\_ No\_\_ Transmission filter restriction shall be displayed in the cab

Yes\_\_ No\_\_ The transmission shall be able to reach 22mph in 4th gear

**AXLES/BRAKES**

Yes\_\_ No\_\_ The final drives shall be heavy-duty outboard planetary

Yes\_\_ No\_\_ The loader shall have two brake pedals with an activation switch to allow left brake pedal to switch between a brake neutralizer or brake only function

Yes\_\_ No\_\_ The service brake shall be hydraulically actuated, inboard, sun shaft mounted, pressure oil

 Cooled, self-adjusting, single disc sealed from water, mud and dust contamination

Yes\_\_ No\_\_ Rear axle shall not have less than 24 degree total oscillation, stop to stop, when equipped with

 20.5R25 tires

Yes\_\_ No\_\_ The dipstick port and housing fill shall be at the top of the axle

Yes\_\_ No\_\_ The front axle shall be a hydraulically actuated, dog clutch style, locking differential for maximum traction. Engagement if the locking axle may be done under load. ***No Exceptions***.

 ***Limited slip and/or torque proportioning axles are not acceptable***

**HYDRAULIC SYSTEM**

Yes\_\_ No\_\_ Hydraulic filter shall be in the hydraulic tank with service interval of 4000 hours

Yes\_\_ No\_\_ The hydraulic fluid shall have a rated life of 4000 hours

Yes\_\_ No\_\_ The hydraulic system shall be pressure-compensating load-sensing for reduced fuel consumption and better fluid heating compared to open center hydraulic systems

Yes\_\_ No\_\_ Unit will be provided with an automatic return to dig level attachment

Yes\_\_ No\_\_ Unit will be provided with in-cab adjustable automatic boom height kick our control

Yes\_\_ No\_\_ Unit will be provided with in-cab adjustable automatic boom return-to-carry control

Yes\_\_ No\_\_ Unit shall be equipped with single-lever pilot operated joystick control for boom and bucket

 Functions

Yes\_\_ No\_\_ Unit shall be equipped with a 3rd function loader valve and auxiliary lever

Yes\_\_ No\_\_ A sight gauge will be provided for checking hydraulic reservoir fluid

Yes\_\_ No\_\_ Hydraulic pump shall be variable-displacement, axial-piston pump; closed-center, pressure-

 Compensating system

Yes\_\_ No\_\_ Loader steering articulation angle shall be no less than 80 degrees, 40 degrees in each direction

**ELECTRICAL**

Yes\_\_ No\_\_ Two batteries shall be included, 24 volt, 950 CCA, 200-min. rated reserve

Yes\_\_ No\_\_ The unit shall have a solid-state electrical power distribution system using circuit board technology and solid-state switches

Yes\_\_ No\_\_ The unit shall be provided with a master electrical disconnect switch

Yes\_\_ No\_\_ Unit shall have (2) front facing and (2) rear facing LED amber strobe lights mounted below the roof drip edge for ground/vehicle visibility. Highway Dept request this mounting configuration

Yes\_\_ No\_\_ Unit shall include (4) front facing cab mounted work lights and (2) rear facing cab mounted work lights

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**ELECTRICAL CONTINUED**

Yes\_\_ No\_\_ The in-cab switch module shall be sealed to keep out dirt, dust and airborne debris

Yes\_\_ No\_\_ Unit shall be equipped with driving lights with guards, turn signals and flashers, stop and tail lights. The tail lights shall be LED type mounted high up in the rear grille for protection from damage and better sight visibility and shall have a normal service life equal to the machine.

Yes\_\_ No\_\_ Unit shall be equipped with gauges for: engine coolant temperature, transmission oil temperature, hydraulic oil temperature, and engine oil pressure

Yes\_\_ No\_\_ Unit shall have digital read out for: engine rpm, odometer, transmission gear direction indicator, speedometer, hour meter, fuel level and outside temperature

Yes\_\_ No\_\_ Unit shall have operator warning lights for: check engine, engine oil pressure, engine air restriction, batter voltage, transmission filter restriction, break pressure, hydraulic oil filter, transmission fault, hydraulic oil temperature

**OPERATOR STATION**

Yes\_\_ No\_\_ Unit shall be equipped with a full ROPS/FOPS cab with heater and air conditioner

Yes\_\_ No\_\_ 3’ retractable seat belt shall be provided

Yes\_\_ No\_\_ Steering wheel shall be tillable

Yes\_\_ No\_\_ The cab shall have continuous and unobstructed glass from roofline to floor for visibility in tight quarters

Yes\_\_ No\_\_ Cab shall have 2 cup holders, personal cooler holder/storage compartment for operator’s manual, and rubber floor mat

**GENERAL SPECIFICATIONS**

Yes\_\_ No\_\_ Unit shall be equipped with 20.5 R 25 L-3 radial tires mounted on multi-piece rims

Yes\_\_ No\_\_ Unit shall have full front fenders, and full rear fenders

Yes\_\_ No\_\_ The counterweight shall be built-in cast

Yes\_\_ No\_\_ Unit will be provided with a hitch with locking pin

Yes\_\_ No\_\_ Unit shall have an articulation locking bar

Yes\_\_ No\_\_ Unit shall have vandal protection with lockable engine enclosures, right counterweight storage, battery box, filter access for radiator/fuel/hydraulic/transmission

Yes\_\_ No\_\_ The unit shall be provided with a loader boom service locking bar

Yes\_\_ No\_\_ Loader shall have reinforced articulation joints with double tapered roller bearings

Yes\_\_ No\_\_ Operating weight with standard equipment , 100’ wide MP 2.5 cy yd. bucket, 20.5R25 tires, ROPS cab, 175 lb. operator and full fuel tank shall be no less than 28,660 lbs.

Yes\_\_ No\_\_ Bucket breakout force shall be no less than 22,289 lbs. before coupler installation

Yes\_\_ No\_\_ Ground clearance under the loader shall be no less than 15 inches

Yes\_\_ No\_\_ Loader shall have height to hinge pin no less than 150 inches

Yes\_\_ No\_\_ Machine full turn tipping load before coupler shall be no less than 20,000 lbs.

Yes\_\_ No\_\_ Dump clearance at 45 degrees at full height shall be no less than 109 inches

Yes\_\_ No\_\_ Reach at 45 degree dump, 7ft clearance shall be no less than 4ft 10 inches

**FRAME AND STRUCTURES**

Yes\_\_ No\_\_ Machine shall be equipped with an exterior mounted, ground level storage compartment

Yes\_\_ No\_\_ Loader shall include a 110 volt 1000 watt block heater

Yes\_\_ No\_\_ Loader shall include a glow plug cold weather start system

Yes\_\_ No\_\_ Loader shall include ride control, with an/off/and automatic setting with monitor adjustable speed settings

Yes\_\_ No\_\_ Loader shall include an Am/Fm/Weather band radio

Yes\_\_ No\_\_ Loader shall include heated exterior mirrors

Yes\_\_ No\_\_ Loader shall include environmental drains and oil sampling for the engine oil, transmission oil, hydraulic oil, and engine coolant

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**MINIMUM SPECIFICATIONS**

**ADDITIONAL SPECIFICATIONS**

Yes\_\_ No\_\_ Loader shall include a heated air ride seat with headrest and independent height and weight adjustment

Yes\_\_ No\_\_ Loader shall include a cab mounted fire extinguisher

Yes\_\_ No\_\_ Loader shall include a sound suppression package

Yes\_\_ No\_\_ Loader shall include a license plate bracket with light

Yes\_\_ No\_\_ Loader shall include a rear mounted SMV emblem

Yes\_\_ No\_\_ Loader shall include a O.E.M. 416 hydraulic front attachment coupler with in-cab attach/detach switch. ***No Exceptions***

Yes\_\_ No\_\_ Loader shall include 3rd valve

Yes\_\_ No\_\_ Loader shall include JRB quick attach

Yes\_\_ No\_\_ Vendor shall include an operator, parts, and repair manual

Yes\_\_ No\_\_ Loader shall include a one year full machine warranty with unlimited hours

Yes\_\_ No\_\_ Vendor shall provide a telematics machine monitoring system at no charge for 3 years

Yes\_\_ No\_\_ Loader shall include be delivered to the Orange Town Garage fully operational and ready to work with a full tank of fuel

Yes\_\_ No\_\_ Vendor shall provide operator and maintenance training on the day of machine delivery

Yes\_\_ No\_\_ Vendor shall provide and approximate delivery date from time of purchase order