

Pittsburg County, Oklahoma
COUNTY PURCHASING OFFICE
 Pittsburg County Court House
 McAlester, Oklahoma
 Phone: (918) 423-4934

INVITATION TO BID

PLEASE REVIEW TERMS AND CONDITIONS ON REVERSE
 SIDE RELATING TO SUBMISSION OF THIS BID.

Notarized Affidavit completions and signature required on reverse side.

DATE ISSUED	25-Aug-14
PAGE 1 OF	

BID NUMBER Bid # 3	BID CLOSING DATE AND HOUR September 8, 2014 @ 10:00AM	REQUIRED DELIVERY DATE Days after award of Purchase Order
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TERMS:	DATE OF DELIVERY:
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Item	Quantity	Unit of issue	DESCRIPTION	Unit Price	Total
			<p>Board of County Commissioners wishes to advertise for the following:</p> <p>One (1) or more New Motor Graders Lease Only with Financing Included</p> <p>SEE SPECIFICATIONS ATTACHED</p>		

TERMS AND CONDITIONS

1. Sealed bids will be opened in the Commissioner's Conference Room, Pittsburg County Courthouse, McAlester, Oklahoma, at the time and date shown on the invitation to bid form.
2. Late bids will not be considered. Bids must be received in sealed envelopes (one to an envelope) with bid number and closing date written on the outside of the envelope.
3. Unit prices will be guaranteed correct by the bidder.
4. Firm prices will be F.O.B. destination.
5. Purchases by Pittsburg County, Oklahoma, are not subject to state or federal taxes.
6. This bid is submitted as a legal offer and any bid when accepted by the County constitutes a firm contract.
7. Oklahoma laws require each bidder submitting a bid to a county for goods or services to furnish a notarized sworn statement of non-collusion. A form is supplied below.
8. Bids will be firm until delivered.

(DATE)

AFFIDAVIT: I, the undersigned, of lawful age, being first duly sworn on oath say that he (she) is the agent authorized by the bidder to submit the above bid. Affiant further states that the bidder has not been a party to any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding; or with any state official or employee as to quantity; quality or price in the prospective contract or any other terms of said prospective contract; or in any discussions between bidders and any state official concerning exchange of money or other thing of value for special consideration in the letting of a contract; that the bidder/contractor has not paid, given or donated or agreed to pay, give or donate to any officer or employee of the State of Oklahoma (or other entity) any money or other thing of value, either directly or indirectly in the procuring of the award of a contract pursuant to this bid.

Subscribed and sworn before this _____ day
of _____ 20_____ (seal)

My commission expires _____ Signed by: _____ Title: _____
Firm: _____
(MANUAL SIGNATURE OF UNDERSIGNED)

NOTARY PUBLIC (CLERK OR JUDGE) Address: _____ Phone: _____

City: _____ State _____

Zip _____

NOTE: Other terms and conditions can be added at the discretion of the county officers.

RESOLUTION #29
To Advertise

The Board of County Commissioners, Pittsburg County, met in regular session on Monday, August 25, 2014.

WHEREAS, the Board of County Commissioners wishes to advertise for the following:

One (1) or more New Motor Graders
Lease Only with Financing Included

A bid package containing complete specifications and an "Invitation to Bid" are available in the Pittsburg County Clerk's Office, 115 E. Carl Albert Parkway, Room 100, McAlester, Oklahoma 74501 or on the county website at pittsburg.okcounties.org.

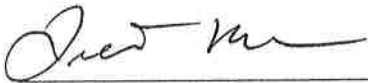
THEREFORE, each competitive bid submitted to the County must be accompanied with an affidavit for filing with the competitive bid form, as required by 61 O.S. § 138.

Sealed bids will be received and filed with the Pittsburg County Clerk and opened on Monday, September 8, 2014 at 10:00 a.m. in the conference room of the Board of County Commissioners, Pittsburg County Courthouse, 115 E. Carl Albert Pkwy., McAlester, Oklahoma. Contract will be awarded to the lowest or best bidder. The Board of County Commissioners, Pittsburg County, reserves the right to reject all bids and re-advertise.

BOARD OF COUNTY COMMISSIONERS
PITTSBURG COUNTY, OKLAHOMA



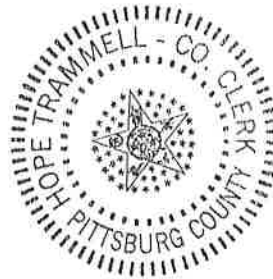
CHAIRMAN



VICE-CHAIRMAN



MEMBER



ATTEST:



COUNTY CLERK

**MOTOR GRADERS
BID SPECIFICATION FOR 140M3 OR EQUIVALENT**

Compliant?

BASIC SPECIFICATIONS

- Y___ N___ Machine shall be designed and built by the manufacturer.
- Y___ N___ Base Machine Weight shall not be less than 38,191 lbs (17,323 kg). Weight shall include standard machine configuration, lubricants, coolants, full fuel tank and operator of 200 lbs (91 kg).
- Y___ N___ Machine height to top of the cab shall not exceed 130 in (3,308 mm).
- Y___ N___ Machine length from the front outside edge tire to end of tow hitch shall not be less than 351 in (8,912 mm)
- Y___ N___ Machine Wheel Base (distance from front axle to mid tandem) shall not be less than 241 in (6123 mm).
- Y___ N___ The rear frame shall have two box section channels with an integrated bumper as standard.
- Y___ N___ A toolbox shall be provided.

BASIC SPECIFICATIONS-OPTIONAL ATTACHMENTS

- Y___ N___ Machine shall have vandal protection standard including locks for cab doors, engine side shields (4), top tank radiator access door, engine coolant surge tank, hydraulic reservoir cap, fuel tank cap and tool box.
- Y___ N___ An optional rear hitch shall be provided
- Y___ N___ Machine length from counterweight to ripper shall not exceed 399 in (10,136 mm).

ENGINE

- Y___ N___ Engine shall be designed and built by the manufacturer.
- Y___ N___ Engine shall be a turbo-charged, direct injection, four stroke, 6-cylinder diesel engine.
- Y___ N___ Engine shall be certified EPA Tier 4 Final and European Union Stage IV
- Y___ N___ Engine shall be electronically controlled for more efficient fuel injection and fuel burn.
- Y___ N___ Engine shall achieve rated power requirement with engine displacement not less than 9.3L (567.5 in³) for better performance and fuel economy.
- Y___ N___ Engine shall develop as standard a rated net flywheel power of at least 200 HP (149 kW) in 1st gear, 210 HP (156 kW) in 2nd gear, 220 HP (164 kW) in 3rd gear, 231 HP (172 kW) in 4th gear, 236 HP (176 kW) in 5th gear, 241 HP (180 kW) in 6th gear, 247 HP (184 kW) in 7th gear and 252 HP (188 kW) in 8th gear.
- Y___ N___ Engine will increase its low idle speed to 1,000 rpm when the battery voltage is below 24.5 volts for more than 5 minutes to ensure adequate system voltage and battery reliability.
- Y___ N___ Altitude deration will not occur at altitudes less than 10,000 ft (3050 m). The deration rate above 10,000 ft (3050 m) shall be 1.5% per 1000 ft (305 m).
- Y___ N___ Peak engine power shall not be achieved at an engine speed greater than 1800 rpm.
- Y___ N___ Rated engine power shall not be achieved at an engine speed greater than 2000 rpm.
- Y___ N___ Engine will have an minimum torque rise of 47% from 2000 rpm to peak torque following SAE J1349 (net power with max fan).
- Y___ N___ Engine enclosure and daily service points shall be accessible from ground level and grouped on the left side of the machine.
- Y___ N___ Engine fan shall automatically adjust fan speed via a variable hydraulic fan pump to meet engine cooling requirements thus reducing demand on the engine, putting more horsepower to the ground, reducing noise, improving fuel economy, and reducing heat.
- Y___ N___ Engine shall allow for at least 500 hours of operation between oil changes.
- Y___ N___ Engine shall be isolation/resilient mounted to minimize sound and vibration.
- Y___ N___ Engine compartment doors shall be lockable without the use of external locks.
- Y___ N___ Engine shall automatically lower engine torque and alert the operator if critical conditions are detected.
- Y___ N___ Engine shall have an air-to-air after cooler for superior engine performance.
- Y___ N___ Engine oil cooler shall be a water to oil shell and tube cooler system.
- Y___ N___ Machine shall have a 12000 hour coolant interval from factory.
- Y___ N___ The cooling package air intake shall have 2.8 mm perforated inlet screen.
- Y___ N___ The charged air cooler (ATAAC) shall have 6 fins per inch.
- Y___ N___ Economy mode shall be available directly from factory to increase net efficiency.

- Y ___ N ___ Economy mode shall be able to be enabled and disabled by the operator through the onboard Message Display.
- Y ___ N ___ Economy mode shall be lockable via onboard programmable password protection.
- Y ___ N ___ DEF tank reservoir shall have a heater to thaw DEF fluid.
- Y ___ N ___ DEF lines should be heated to prevent freezing during extremely cold ambient conditions.

ENGINE-OPTIONAL ATTACHMENTS

- Y ___ N ___ An engine coolant heater shall be available to assist in cold weather starting.
- Y ___ N ___ Ether starting aid shall be available and must automatically meter ether injection to prevent engine damage.

POWERTRAIN/TRANSMISSION

- Y ___ N ___ Transmission shall be designed and built by the machine manufacturer.
- Y ___ N ___ Transmission shall be a direct drive, power shift, countershaft type.
- Y ___ N ___ Transmission shall be equipped with built-in self-diagnostic capability.
- Y ___ N ___ Transmission shall have no less than 8 forward speeds and 6 reverse speeds(for added safety).
- Y ___ N ___ Transmission shall have 5 working gears between 0-10.6 mph (0-17.1 km/h), for dirt applications.
- Y ___ N ___ Transmission shall be isolated/resilient mounted to reduce sound and vibration.
- Y ___ N ___ A controlled throttle shifting system shall be standard to smooth directional gear changes without use of the inching pedal.
- Y ___ N ___ Electronic Throttle Control (cruise control) shall be standard and shall be controlled by a push button, located on a 3-axis joystick as standard on the right joystick control for resuming and decreasing throttle set.
- Y ___ N ___ Electronic Throttle Control modes, set and accelerate functions, shall be located on the right control column for easy access.
- Y ___ N ___ A load compensating system for the transmission shall be standard to ensure consistent shift quality in all applications.
- Y ___ N ___ Automatic Differential Lock/Unlock feature shall be standard and shall not have speed, shuttle shifting or tandem spinning restrictions for engaging/disengaging. System must be load-sensing for optimal performance. .
- Y ___ N ___ Automatic mode shall not be overridden via manual intervention for optimal performance and to prevent unintended differential engagement
- Y ___ N ___ Differential Lock/Unlock shall be electro-hydraulically controlled, as a standard feature.
- Y ___ N ___ Differential Lock/Unlock shall be a multi-disc design.
- Y ___ N ___ Final drive shall be a planetary design.
- Y ___ N ___ The rear axle shall be a bolt-on modular design offering easy access to differential components, improving serviceability and contamination control.
- Y ___ N ___ The total surface area of all the transmission clutch packs shall not be less than 1831 in² (11,812cm²).
- Y ___ N ___ Diameter at the output end of the transmission shaft shall be no less than 2.29 in (58.1 mm).
- Y ___ N ___ Machine shall be equipped with an electronic inching pedal for improved modulation and machine control.
- Y ___ N ___ Machine shall be equipped with electronic over-speed protection to prevent the engine and transmission from over speeding, as a standard feature.
- Y ___ N ___ Machine shall have no drive shafts that cross over the articulation hitch.

POWERTRAIN/TRANSMISSION-OPTIONAL ATTACHMENTS

- Y ___ N ___ An autoshift transmission option shall be available on all forward and reverse gears.

STEERING & IMPLEMENT CONTROLS

- Y ___ N ___ Steering wheel shall not be required to operate machine.
- Y ___ N ___ Joystick Steering capabilities shall be ISO 5010:1992.
- Y ___ N ___ Machine shall employ a friction pack style steering mechanism, utilizing the follow steer concept.
- Y ___ N ___ The left 3-axis joystick shall control wheel lean with individual left and right wheel lean buttons as standard.
- Y ___ N ___ Primary steering shall be achieved via a left-hand, multifunction, 3-axis joystick as standard, using an intuitive steering control system that automatically adjusts steering sensitivity as machine ground speed increases.
- Y ___ N ___ Articulation to the right or left shall be achieved by a multifunction, 3-axis left joystick with the twist of such to the right or left by the left-hand, multifunction, 3-axis joystick.

- Y ___ N ___ An articulation return-to-center button on the left-hand, multifunction, 3-axis joystick shall return the machine to a straight frame position from any articulation angle with the touch of a single button.
- Y ___ N ___ The right 3 axis joystick shall primarily control the Drawbar, Circle, and Moldboard.
- Y ___ N ___ Machine, Drawbar, Circle, and Moldboard shall be control shall be achieved via a right hand multifunction, 3-axis, joystick, including moldboard slide and tip, drawbar center shift through a 4 way hat switch and circle turn by a left or right twist intuitively.
- Y ___ N ___ Blade lift cylinders shall be individually controlled by the multifunction, 3 axis joysticks; Lift and drop of cylinders shall be achieved by the forward and back motion of the respective joystick. Forward(left joystick) lowers left lift cylinder, back(left joystick)raises the left lift cylinder, forward(right joystick) lowers the right lift cylinder, back(right joystick) raises the right lift cylinder.
- Y ___ N ___ Joystick controls shall be mounted to electronically adjustable pedestals, which are hard mounted to the cab floor, independent of the operator seat.
- Y ___ N ___ Secondary steering shall have a primary and secondary power supply in the event the primary source is lost.
- Y ___ N ___ Transmission direction control shall be a 3-position rocker switch for selecting forward, neutral, and reverse incorporated into a single, 3-axis, multi-function, left-hand joystick control.
- Y ___ N ___ Transmission gear selection shall be controlled by dual push buttons for up shifting and downshifting and shall be incorporated into a single, 3-axis, multi-function, left-hand joystick control.
- Y ___ N ___ Manual Differential Lock/Unlock shall be operator controlled, via a push-button, located on a single, 3-axis, multi-function, right-hand joystick control.
- Y ___ N ___ The machine shall have two redundant articulation sensors.
- Y ___ N ___ Two redundant sensors shall be standard in the steering cylinders (one in each).
- Y ___ N ___ Three redundant sensors shall be provided in the steering joystick for additional safety.

BRAKES

- Y ___ N ___ Machine shall have primary and secondary service brakes.
- Y ___ N ___ Entire braking system shall meet all requirements of ISO 3450:1996.
- Y ___ N ___ Two separate left and right hydraulic brake accumulators shall be standard for safety.
- Y ___ N ___ Parking brake shall be multi-disc, oil-cooled, spring-applied, hydraulically released, sealed, adjustment-free, and integrated into the transmission. Park brake shall not be externally located.
- Y ___ N ___ Parking brake shall be serviceable without removing the transmission.
- Y ___ N ___ Service brakes shall be multi-disc, oil-cooled and completely sealed; they will also provide access to check and determine brake wear without removing or disassembling the brake assembly.
- Y ___ N ___ Service brake disc surfaces shall be grooved and carry oil between discs and plates with brakes fully applied.
- Y ___ N ___ Service brakes shall be hydraulically actuated, utilizing dual independent brake circuits.
- Y ___ N ___ Brakes shall be continuously pressurized, filtered, oil cooled.
- Y ___ N ___ Machine shall have individual brake pods for each rear wheel, located at each rear wheel inside the tandem box, independent of tandem chains.
- Y ___ N ___ Compensation components shall be required at all four tandem brake pods in addition to the brake wear indicator.
- Y ___ N ___ Brake line protection, including tandem walkways and hydraulic brake line guarding, shall be required to prevent line damage.
- Y ___ N ___ Service brakes shall provide a minimum of 891 in² (5,750 cm²) of friction material surface area at each of the four tandem wheels to eliminate braking loads on the power train.

HYDRAULIC SYSTEM

- Y ___ N ___ A standard triple-redundant hydraulic relief system shall protect machine hydraulic components.
- Y ___ N ___ Hydraulic implement pump shall produce between 0 and 55.7 gal/min (210 L/min) of oil flow at 1,800 RPM.
- Y ___ N ___ Hydraulics system shall be a closed center, load sensing type with a variable displacement, axial piston-type pump.
- Y ___ N ___ Hydraulic system shall be fully sealed, using Duo-cone and O-ring face seals to prevent leaks, contamination, and spillage.
- Y ___ N ___ The hydraulic tank shall have a baffling system to reduce potential pump cavitation.
- Y ___ N ___ The maximum hydraulic system pressure shall be no more than 3,500 psi (24,150 kPa).
- Y ___ N ___ Implement valves shall be electro-hydraulic, designed and built by the machine manufacturer.
- Y ___ N ___ Implement pump shall not be mounted under cab floor, minimizing sound and vibration.

- Y___ N___ Implement valves shall be proportional priority pressure compensating for consistent response when multi-functioning any combination of implement controls and independent of engine speed.
- Y___ N___ Implement pump shall be solely dedicated to implement controls and not shared with any other components.
- Y___ N___ Lock valves shall be integrated into the main implement valve to prevent cylinder drift.
- Y___ N___ The hydraulic stand-by pressure shall be no more than 885 psi (6100 kPa) at 1,800 RPM.
- Y___ N___ There shall be a provision to install up to 15 modulating hydraulic valves, controlled by two multifunction, 3-axis joystick controls and auxiliary controls inside the cab.
- Y___ N___ Hydraulic valves shall not be mounted under the cab floor, minimizing sound and vibration.
- Y___ N___ Left and right blade lift cylinders shall have independent float capability, actuated by two multifunction, 3-axis joystick controls inside the cab, as a standard feature.
- Y___ N___ A sight gauge will be provided for checking hydraulic reservoir fluid.
- Y___ N___ Hydraulic oil change service interval shall be no less than 6000 hours with oil sampling
- Y___ N___ Hydraulic system shall have a separate oil tank solely dedicated to the implement pump.

FRONT AXLE AND TANDEMS

- Y___ N___ Front axle oscillation shall be no less than 32 degrees total, per side 16 degrees up and 16 degrees down.
- Y___ N___ Front axle shall be an arched design for maximum ground clearance.
- Y___ N___ Wheel spindle shall be a "live" spindle design and rotate inside a sealed (with Duo-Cone seals) compartment with lightweight oil for lubrication of the bearings.
- Y___ N___ Front spindle shall be heat induction hardened.
- Y___ N___ Front wheel spindle bearings shall be a double-tapered design with the larger diameter bearing mounted closest to the centerline of the front tire.
- Y___ N___ Front wheel spindle maintenance intervals shall be no less than 2000 hrs.
- Y___ N___ Front wheel steering angle shall be no less than 50.0 degrees left or right.
- Y___ N___ Maximum front wheel lean shall be no less than 18 degrees left or right.
- Y___ N___ Machine turning radius shall not exceed 25 ft. 7 in. (7.8 m) using front steering, full articulation and unlocked differential.
- Y___ N___ Distance between center of tandem wheels shall be no greater than 60.0 in (1523 mm) for optimum clearance and mobility.
- Y___ N___ Tandem drive chain pitch shall not be less than 2.0 in (50.8 mm).
- Y___ N___ Tandems shall be capable of oscillating 15 degrees front tandem up and 25 degrees front tandem down, with full machine articulation and having no interference between tandem wheel and machine structure.
- Y___ N___ Electronic and mechanical steering stops located at each wheel and steering cylinder relief valves shall be present to prevent steering system damage during normal operation.
- Y___ N___ Steering tie rod ends shall be heat induction hardened.
- Y___ N___ Machine shall provide 2 steering cylinders for maximum steering force.
- Y___ N___ When equipped with a ripper, the machine shall have a minimum ramp angle of 15.9 degrees.

TIRES AND RIMS

- Y___ N___ A 10 in (25.4 cm) by 24 in (60.96 cm) size 3-piece tire rim shall be standard to provide mounting for 14.00-24 tires and 14.00R24 conventional tires

TIRES AND RIMS-OPTIONAL ATTACHMENTS

- Y___ N___ A 9 in (22.86 cm) by 24 in (60.96 cm) size single-piece tire rim shall be available to provide mounting for a 14.00R24 conventional tires
- Y___ N___ A 13 in (33.0 cm) by 25 in (63.5 cm) size single-piece tire rim shall be available to provide mounting for 17.5-25 tires.
- Y___ N___ A 14 in (35.6 cm) by 25 in (63.5 cm) size 3-piece tire rim shall be available to provide mounting for 17.5-R25 tires.

OPERATORS STATION

- Y___ N___ A 42,075 BTU/h (12.3 kW) heater shall have an integral pressurizer and four-speed fan along with A/C.
- Y___ N___ Cab shall have angled floor design allowing direct visibility to moldboard.
- Y___ N___ Seat shall be a cloth-covered suspension seat with 3 in (76 mm) retractable seat belts, with adjustments for fore-aft position, seat height, seat back angle, thigh support, and lumbar support.

- Y ___ N ___ An enclosed cab with ROPS (Rollover Protective Structure) according to ISO 3471:1986-1997 shall be provided.
- Y ___ N ___ Cab doors shall have a hold-open clasp with a ground-level release in addition to a release in the cab.
- Y ___ N ___ Cab shall be isolation-mounted to the front frame section of the machine.
- Y ___ N ___ Cab shall have fixed front window of laminated glass with intermittent wiper.
- Y ___ N ___ FOPS (Falling Object Protective Structure) shall be provided according to ISO 3449.
- Y ___ N ___ Machine shall have no less than 17 adjustable vents, positioned to direct air to front windows and operator.
- Y ___ N ___ Radio ready arrangement will include 24V to 12V converter, two speakers, antenna and wiring.
- Y ___ N ___ An instrument cluster shall be provided that includes a speedometer, tachometer, coolant temperature, fuel and articulation angle gauge.
- Y ___ N ___ Operator cab fresh air-filter shall be accessible for clean out and replacement, from outside of the cab at ground level.
- Y ___ N ___ Machine shall have the AccuGrade™ system fully integrated into the machine design with integral hydraulic and electrical components.
- Y ___ N ___ A real-time information system shall monitor all system data and alert the operator of any faults through a digital text display. This performance and diagnostic information system shall be programmable for multiple languages .
- Y ___ N ___ Left and right side cab doors shall be provided.
- Y ___ N ___ Wipers shall be provided on side and rear windows.
- Y ___ N ___ Digital machine hour meter shall be provided.
- Y ___ N ___ An electronic message system shall provide real-time machine performance and diagnostic data.
- Y ___ N ___ The forward visibility shall be continuous and unobstructed glass from roofline to floor providing visibility of the blade, heel and toe, back of the cutting edge, and front tires.
- Y ___ N ___ Access to cab shall be three anti-skid steps.
- Y ___ N ___ Cab shall have cup holder, personal cooler holder/storage compartment for operator's manual, with a molded floor mat.
- Y ___ N ___ Window washer fluid bottle refill spout shall be located external of the cab.
- Y ___ N ___ DEF gauge must be visible to the operator at all times.

OPERATORS STATION-OPTIONAL ATTACHMENTS

- Y ___ N ___ An auxiliary control pod, with implement float control capability, shall be available.
- Y ___ N ___ Auxiliary controls shall be available for control of attachment implements and/or work tools and shall be programmable via computer software.
- Y ___ N ___ Auxiliary controls shall be a finger-tip control type and located beside the right-hand joystick control.
- Y ___ N ___ An auxiliary, 2-axis joystick shall be available for control of a snow wing.
- Y ___ N ___ Integrated Cross Slope System shall be available from the factory in order to ensure proper calibration and installation for improved accuracy and performance.
- Y ___ N ___ Integrated display and wiring for a rear vision camera shall be available with capability to view at all times without interfering with the gauge and diagnostic display.
- Y ___ N ___ A rear sun shade shall be available.
- Y ___ N ___ A rear defroster fan shall be available.
- Y ___ N ___ A machine security system shall be available to electronically code keys selected by the user to limit usage by individuals or by time parameters.
- Y ___ N ___ AccuGrade™ automatic blade control system attachment ready option shall be available from the factory. This option shall include additional mounting brackets and electrical harnesses for easy installation of the electronics kit.
- Y ___ N ___ An air suspension seat shall be available.
- Y ___ N ___ Anti-icing glass shall be available for front windshield and RH door.
- Y ___ N ___ A heated or both heated/ventilated seat shall be available.
- Y ___ N ___ Machine shall have integrated Cat Grade Control Cross Slope available from the factory.
- Y ___ N ___ Machine shall have an integrated cross slope system with cross coupling software to prevent automatic response lag (or saw-toothing) in order to maintain consistency and ensure accuracy.
- Y ___ N ___ Machine shall have an integrated cross slope system that is fully upgradeable to other 2D/3D blade control systems, to increase machine resale value.
- Y ___ N ___ Machine shall have a display for cross slope information that is separate from critical machine information such as engine RPM, ground speed and fluid temperature monitoring to ensure safe operation.

CIRCLE & MOLDBOARD

- Y ___ N ___ Drawbar, circle, and moldboard shall be controlled with a maximum of two multifunction, 3-axis joysticks, as standard.
- Y ___ N ___ Drawbar wear strips shall be replaceable drop-in inserts made from nylon composite material, replaceable and adjustable from the top of the drawbar plate via removable cover plates.
- Y ___ N ___ The drawbar shall feature welded protective wear plates to prevent lift group contact with the primary drawbar structure.
- Y ___ N ___ The standard moldboard shall be at least 12 ft (3657 mm) long, 24 in (610 mm) high and no less than 7/8 in (22 mm) thick.
- Y ___ N ___ Moldboard shall have a bank slope angle capability of at least 90 degrees to both sides.
- Y ___ N ___ Moldboard side-shift cylinder shall be installed on the left-hand side to prevent snow wing interference with the cylinder rod.
- Y ___ N ___ Moldboard shall have no less than 16.3 in (413 mm) arc radius (blade curvature) for optimum productivity.
- Y ___ N ___ The moldboard retention system shall have no more than two retention points located on the left and right side of the moldboard. The surface area shall not be less than 50408 mm² (78.13 in²).
- Y ___ N ___ Moldboard shall have a hydraulic tip control through a range of 40 degrees fore and 5 degrees aft.
- Y ___ N ___ Moldboard wear strips shall be adjusted with lock screws, providing shim-less adjustment capability both vertical & horizontal.
- Y ___ N ___ The moldboard shall be pre-stressed during manufacturing for superior strength and durability.
- Y ___ N ___ Moldboard slide rails shall be constructed of a heat-treated, high carbon steel and have replaceable bronze alloy wear inserts on top and bottom.
- Y ___ N ___ Circle shall be a single piece, rolled-ring forging with raised wear surfaces on the top and bottom.
- Y ___ N ___ Circle shall be rotated by a hydraulically driven motor (pinion gear) with a minimum circle pinion torque capability of 44253 ft-lb (60,000 N-m).
- Y ___ N ___ Circle teeth contact surfaces shall be induction-hardened on the front 240 degrees of the circle.
- Y ___ N ___ Blade lift and center shift cylinders shall have replaceable bronze-alloy wear inserts in the ball sockets with removable shims to insure the ability to remove free play throughout the useful wear insert life.
- Y ___ N ___ The lift cylinder casting shall be welded to the front frame for added strength and structural integrity.
- Y ___ N ___ The standard mounting hardware for cutting edges and end bits shall be 3/4 in (19 mm)
- Y ___ N ___ All 7 Link Bar positions have replaceable bushings.
- Y ___ N ___ Link bar pin shall be separate from pin pulling mechanism for easier service and lower O&O costs.
- Y ___ N ___ The draft frame pivot connection shall have a single ball stud with grease zerk. Ball stud shall be bolt-on, shimable and adjustable to allow for quick and easy field serviceable design.
- Y ___ N ___ There shall be 3 sideshift anchor positions shall be provided for extended reach capability as standard.
- Y ___ N ___ Pinion Gear shall be separate from the Pinion Shaft to allow for a quick and easy serviceable design.
- Y ___ N ___ Circle outside diameter shall be no less than 60.2 in (1530 mm).
- Y ___ N ___ Throat clearance with standard moldboard shall be at least 153 mm.
- Y ___ N ___ There will be no more than 6 replaceable wear inserts between the circle and drawbar providing at least 163 in² (1051 cm²) of wear surface area.

CIRCLE & MOLDBOARD-OPTIONAL ATTACHMENTS

- Y ___ N ___ A 14 ft (4267 mm) long, 24 in (610 mm) high and no less than 7/8 in (22 mm) thick moldboard shall be available.
- Y ___ N ___ Blade lift accumulators shall be provided, protecting cutting edge and other components from damage from shock loads as an option.

ELECTRICAL

- Y ___ N ___ Machine shall have a 145 amp-hour, 1125 CCA heavy-duty battery.
- Y ___ N ___ Machine shall have a minimum 150-amp alternator at 24 volts provided which is brushless for increased life and durability.
- Y ___ N ___ Six 3 x 3 in (76 x 76 mm) halogen mounted cab lights shall be provided.
- Y ___ N ___ A 24 V to 12 V converter with 10-amp capacity shall be provided.
- Y ___ N ___ Starting system shall be a 24V direct electric type.
- Y ___ N ___ LED white reversing lamps and LED stop lamps shall be provided.
- Y ___ N ___ Electrical system shall have a master disconnect switch with a removable key (in addition to the ignition switch), accessible from the ground level.

- Y ___ N ___ All core machine systems shall be electronically connected, optimizing performance and preventing machine damage.
- Y ___ N ___ All wiring shall be arranged and located so as to facilitate regular visual inspections, not be in contact with hot surfaces and not routed with other services lines (e.g. fuel, oil, etc.).
- Y ___ N ___ All harnesses / cabling are secured with clipping clamps providing a gap between the conduit/harness and the mounting surface preventing material build-up.
- Y ___ N ___ Power must remain available upon key off to purge DEF system lines and protect components.

ELECTRICAL-OPTIONAL ATTACHMENTS

- Y ___ N ___ Machine shall have 200 amp-hour, 1400 CCA extra heavy-duty batteries available.
- Y ___ N ___ Machine shall have a 280-amp alternator at 24 volts available which is brushless for increased life and durability.
- Y ___ N ___ There will be 2 (3 x 3 in) (76 x 76 mm) halogen mounted on the right-hand side of car roof bar to illuminate a snow wing shall be available.
- Y ___ N ___ There will be 2 (3 x 3 in) (76 x 76 mm) halogen heel work lamps mounted underneath the cab shall be available as an option.
- Y ___ N ___ There will be 2 (3 x 3 in) (76 x 76 mm) halogen mid-frame toe lamps shall be available to illuminate moldboard and surrounding area as an option.
- Y ___ N ___ There will be 2 (3 x 3 in) (76 x 76 mm) halogen ripper work lamps shall be available as an option.
- Y ___ N ___ High and low bar headlights with front turn signals shall be available.
- Y ___ N ___ An amber LED high-speed strobe beacon shall be available.
- Y ___ N ___ 24V to 12V converter with 25-amp capacity shall be available.

SERVICEABILITY

- Y ___ N ___ Machine shall have a lockable swing-out cooling fan housing featuring a latch-style mechanism (shall not be of a bolted design), allowing easy access to cores. Ability to open/close shall be ground level accessible, eliminating need to climb on machine.
- Y ___ N ___ The dip stick for checking transmission fluid shall be at ground level.
- Y ___ N ___ Hydraulic tank site gauge shall be readable from the ground.
- Y ___ N ___ Hydraulic tank filter shall be a cartridge style filter providing a separate filter element, housing, and drain valve for quick and clean servicing.
- Y ___ N ___ Ability for ground level fueling shall be provided.
- Y ___ N ___ Sampling ports shall be accessible from the tandem level and provide access to the engine, hydraulic, coolant, and fuel ports.
- Y ___ N ___ A two-way communication tool shall give service technicians easy access to stored diagnostic data and allow configuration of machine parameters.
- Y ___ N ___ Machine shall provide 3 points of contact on all areas of the machine, for mounting and dismounting.
- Y ___ N ___ The articulation joint shall have mechanical locking device to prevent frame articulation while servicing or transporting machine.
- Y ___ N ___ Left and right side tandem case assemblies shall be covered with punched steel plate to provide an adequate platform for standing and walking.
- Y ___ N ___ Engine oil filter shall be a 500 hour, vertical spin-on
- Y ___ N ___ Engine primary and final fuel filters shall have 500 hour service replacement interval.
- Y ___ N ___ Engine shall have primary fuel filter with fuel water separator and electronic sensor, quick release dual stage filter and primer pump.
- Y ___ N ___ The centralized lube bank shall be at the articulation joint to give access to difficult zerks.
- Y ___ N ___ Transmission filter restriction indicator shall be displayed in the cab.
- Y ___ N ___ Lockout Tagout capabilities shall be provided standard. Lockout Tagout renders the machine inoperative making it safe to work on.
- Y ___ N ___ DEF tank fill shall be located on the same side of the fuel tank fill, and be easily accessible from ground level.

SERVICEABILITY-OPTIONAL ATTACHMENTS

- Y ___ N ___ A guard shall be available to protect the machine's transmission from debris.
- Y ___ N ___ A guard shall be available to suppress sound from the engine.

MINIMUM SERVICE FILL CAPACITIES

- Y ___ N ___ Standard fuel tank capacity shall not be less than 104 gallons (394 L).
- Y ___ N ___ Standard cooling system capacity shall not be less than 15.0 gallons (57.0 L).
- Y ___ N ___ Standard hydraulic tank capacity shall not be less than 16.9 gallons (64.0 L).
- Y ___ N ___ Standard engine oil capacity shall not be less than 7.9 gallons (30.0 L).
- Y ___ N ___ Standard tandem housing capacity shall not be less than 20.0 gallons (76.0 L) each.
- Y ___ N ___ Standard front wheel spindle bearing housing capacity shall not be less than 0.13 gallons (0.5 L).
- Y ___ N ___ Standard circle drive housing capacity shall not be less than 1.8 gallons (7 L).
- Y ___ N ___ Standard DEF tank capacity shall not be less than 5.8 gallons (22 L).

SAFETY AND ENVIRONMENTAL

- Y ___ N ___ A circle drive slip clutch shall be provided to reduce horizontal moldboard impact damage.
- Y ___ N ___ Black glare-reducing paint shall be used on the front frame and engine enclosure to decrease glare from other equipment lights and reflection from the sun and snow.
- Y ___ N ___ Operator not present monitoring system will lockout implements, shall not allow gear shift out of neutral, and lock parking brake if system detects operator not present for increased safety.
- Y ___ N ___ Hydraulic implement lockout shall be achieved by actuating a single electrical switch within the operator station.
- Y ___ N ___ An external emergency kill switch shall be available for ground level engine shut down.
- Y ___ N ___ Secondary, electric steering pump with redundant wiring shall be provided as a backup to the primary implement hydraulic pump.
- Y ___ N ___ Machine shall have laminated glass for the front windows and doors, to protect the operator from shattered glass.
- Y ___ N ___ Machine shall provide dual exits allowing for emergency egress should one side become obstructed.
- Y ___ N ___ Electrical system shall have a master disconnect switch with a removable key and lock for added safety.(in addition to the ignition switch).
- Y ___ N ___ Machine shall have a steering software system shall automatically reduce steering sensitivity as the ground speed increases.
- Y ___ N ___ Machine shall have back-up lights and sounding alarm when reverse gears are selected.
- Y ___ N ___ Environmentally friendly drain valves shall be provided for the hydraulic oil, engine oil, engine coolant, transmission, differential and fuel tank.
- Y ___ N ___ Cooling fan shall have both a shroud and rear grill for protection during service.
- Y ___ N ___ Machine shall allow cab interior and exterior lights to remain on separate from ignition switch, for safe exit of the machine during night operation.
- Y ___ N ___ Engine and transmission shall be rubber isolation mounted to reduce noise and vibration.

SAFETY AND ENVIRONMENTAL-OPTIONAL ATTACHMENTS

- Y ___ N ___ A guard shall be available to protect the machine's transmission from debris.
- Y ___ N ___ Rear vision camera with integrated display and wiring shall be available.
- Y ___ N ___ Blade lift accumulators shall be available as an option, to reduce vertical impact damage.
- Y ___ N ___ Drop down rear lights (stop/turn signal lights) shall be available to span the profile of the machine for increased safety
- Y ___ N ___ Outside mounted mirrors (optional heated) shall be available.
- Y ___ N ___ A engine compartment light shall be available
- Y ___ N ___ A seatbelt indicator sensor and light shall be available

ADDITIONAL FEATURES

- Y ___ N ___ Rear ripper shall have 5 ripper shank holders and 9 scarifier shank holders.
- Y ___ N ___ Rear ripper shall have a working penetration of maximum 16.8 in (428 mm) and a penetration force of at least 20,812 lb (9440 kg).
- Y ___ N ___ Rear fenders shall meet ISO 3457 requirements and shall not interfere with the ability to fully open any cab/engine enclosure or service access doors.
- Y ___ N ___ All core machine systems shall be electronically connected optimizing performance and preventing machine damage.
- Y ___ N ___ Machine shall have no drive shafts that cross over the articulation hitch.

OPTIONAL ATTACHMENTS

- Y___ N___ An integrated communication tool providing flow of vital machine data and location shall be available. This system shall give automatic updates on machine parameters such as machine hours, machine condition, location, fault codes and alarms.
- Y___ N___ Machine shall have a engine coolant circulating heater available.
- Y___ N___ Machine shall have a transmission solenoid valve guard available.
- Y___ N___ A front scarifier and mid-mount scarifier shall be available.
- Y___ N___ A front lift group shall be available .
- Y___ N___ A rear ripper/scarifier shall be available.
- Y___ N___ A snow wing frame ready option shall be available.

Bid specs are intended for use by North American buyers only and are subject to change. Model configuration may change depending on country of use. Please contact your local Caterpillar dealer for the most up-to-date specifications for your area.