

DEKALB COUNTY HIGHWAY DEPARTMENT

AWD MOTOR GRADER

Sealed proposals for the purchase of One (1) new and latest type and model manufactured AWD Motor Grader and Attachments will be received by the Highway Committee of the DeKalb County Board until 9:00AM, Wednesday, March 2, 2022 at the office of the DeKalb County Engineer, 1826 Barber Greene Road, DeKalb, Illinois, 60115 and at that time publicly opened and read.

The dealer may submit a bid for one or more models that are equal to or exceed the following specifications. A copy of the specifications or literature for each model should be included with each bid. Only bids from authorized dealers will be considered. Each bidder should state warranty coverage and estimated time of model availability. The dealer shall submit a total bid for furnishing an AWD Motor Grader and Attachments as per specifications.

The Board reserves the right to reject any and all bids and to waive any technicalities.

The bids shall not include taxes for which we are exempt.

Must provide a detailed order summary sheet with submitted bid.

Total Bid Amount for new 2022 or newer 6WD
Motor Grader: _____

Proposal submitted by:

Name _____

Address _____

Signature _____

**Bid specifications for Final Tier 4 compliant 42,000# class
Model Year 2022 6WD Motor Grader with snow equipment
minimum 230HP**

Compliance		Feb-22
Overall Machine		
yes ___	no ___	Made in the U.S.A.
yes ___	no ___	Standard Antler rack hydraulic controls
yes ___	no ___	Steering wheel included as standard equipment
Engine		
yes ___	no ___	Engine meets EPA Final Tier 4
yes ___	no ___	Engine shall have a wet-sleeve cylinder liner design for improved cylinder cooling over dry sleeve and cast-in-bore design and for improved cylinder and piston ring durability.
yes ___	no ___	Fuel system shall be high-pressure, common rail
yes ___	no ___	Engine shall be a turbo-charged, direct injection, four stroke, 6-cylinder diesel engine with 4 valves per cylinder designed and built by the manufacturer
yes ___	no ___	Engine displacement for standard engine shall be no less than 9.0 liters (548 cu. in.)
yes ___	no ___	Engine shall reach no less than the following SAE net horsepower in the gears 1-8: 1st 230hp, 2nd 235hp, 3rd 250hp, 4th 250hp, 5th 265hp, 6th 275hp, 7th 275hp, 8th 285hp
yes ___	no ___	Engine will have a minimum torque rise of 50% in all gears
yes ___	no ___	Ether starting aid shall be factory installed
yes ___	no ___	Grader will come with Electronic Throttle Control (cruise control)
yes ___	no ___	Muffler stack shall be flat black to prevent glare on the windshield
yes ___	no ___	Unit shall be equipped with engine stall prevention (ESP) as standard equipment
yes ___	no ___	Engine will have on-the-fly exhaust filter cleaning
yes ___	no ___	An optional adjustable height engine pre-cleaner will be included
yes ___	no ___	Unit shall be equipped with severe duty fuel filter with heated filter base
yes ___	no ___	Unit shall come with a 110V plug in engine block heater
Cooling		
yes ___	no ___	Engine coolant shall be good for temperatures to -34 F
yes ___	no ___	Engine fan shall automatically adjust fan speed via a variable displacement hydraulic fan pump to meet engine cooling requirements to minimize power demand from the engine, reduce vehicle noise levels, improve fuel economy, and improve vehicle performance.
yes ___	no ___	Engine power shall automatically compensate for power draw of the fan system to maintain a constant horsepower available to maintain vehicle performance independent of cooling system power draw.
yes ___	no ___	Engine fan shall be able to automatically reverse and allow the operator to choose the time interval for the reversal to occur through the vehicle monitor.
yes ___	no ___	Coolers provide access for quick cleanout of dust and debris
yes ___	no ___	Access to engine will be open from both sides with hinged engine side shields and full access service doors shall be lockable without the use of external locks.
Power Train		
yes ___	no ___	Unit shall be equipped with a auto shift transmission
yes ___	no ___	Unit shall have a transmission solenoid valve guard for protection and winter weather
yes ___	no ___	Machine shall have no drive shafts that cross over the articulation joint.
yes ___	no ___	The transmission shall have eight forward and eight reverse speeds with built-in diagnostics
yes ___	no ___	Machine shall be equipped with an electronic inching pedal

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- yes___ no___ The transmission system shall have an independent oil reservoir, filtration and cooling system with 31 GPM hydraulic gear pump
- yes___ no___ Transmission shall be event based shifting (EBS) or use load sensing electronic shift modulation with over speed protection
- yes___ no___ Transmission shall have clutch overheating protection to prevent clutch failures due to excessive and overuse of the inching pedal.
- yes___ no___ Transmission shall be equipped with built-in self-diagnostic capability.
- yes___ no___ Transmission shall be a direct drive, power shift, countershaft type.
- yes___ no___ 6WD: Automatic dual-path hydrostatic drive with separate left and right systems
- yes___ no___ 6WD: Operator-selectable 15-position rotary aggressiveness control
- yes___ no___ 6WD: Inching capability down to 0 mph
- yes___ no___ 6WD: Precision mode that pulls the grader with front wheel drive only and allows for seamless shifting to 6wd on-the-fly without stopping the machine.
- yes___ no___ 6WD: Effective Gears 1 - 7 forward and reverse

Axles/Brakes/Tandems

- yes___ no___ Parking brake shall be multi-disc, oil-cooled, spring-applied, hydraulically released, sealed, adjustment-free, and integrated into the transmission.
- yes___ no___ The unit shall have primary and secondary service brakes
- yes___ no___ Entire braking system shall meet all requirements of ISO 3450.
- yes___ no___ Differential Lock/Unlock shall be electro-hydraulically controlled, as a standard feature.
Differential Lock/Unlock shall be capable of being engaged or disengaged at any time during vehicle operation without incurring damage to the differential and differential lock system. Engagement shall not be restricted or determined by vehicle speed, vehicle shifts, or tandem tractive conditions (tandems slipping).
- yes___ no___ Unit shall be equipped with system capable of automatically engaging and disengaging differential lock to optimize tractive capability, while at the same time providing the operator with the ability to manually engage differential lock during any vehicle operation
- yes___ no___ Final drive shall be a planetary design.

Hydraulic System

- yes___ no___ Motor grader shall have an option of up to six auxiliary control valves and control levers integrated into the main control rack and valve stack, 14 possible control levers on main control rack. (For snow wing)
- yes___ no___ Unit shall be equipped with RH one hand blade lift control
- yes___ no___ Hydraulics system shall be a closed center, pressure compensated, load sensing type, with a variable displacement, axial piston-type pump.
- yes___ no___ The maximum hydraulic system pressure shall be no less than 2,750 psi and the hydraulic system shall have a 56.0 gpm main hydraulic axial piston pump.
- yes___ no___ The hydraulic oil shall have a protection range from -40F degrees to 104F degrees
- yes___ no___ Unit shall be equipped with a hydraulic pump disconnect for cold weather starting

Electrical

- yes___ no___ Dual 100 amp alternators shall be installed for 200 amps total
- yes___ no___ Machine shall have 1400 CCA extra heavy-duty batteries with 440 minute reserve capacity

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- yes___ no___ A 24V to 12V converter with 25-amp continuous, 30-amp peak capacity shall be factory installed
- yes___ no___ LED turn signal, marker and brake lights shall be provided.
- yes___ no___ Unit shall be equipped with all Premium LED (high intensity) light grading package. Includes (in addition to those listed above) 14 additional work lights all LED (2 – bottom cab, 2 – mid-frame, 2 – reversing lights on rear grill), 4 – corner cab, 2 front cab and 2 – right side cab roof)
- yes___ no___ Unit shall have a Tall front light bar for winter use applications
- yes___ no___ Unit shall have indicator or warning for: high beams, seat belt, turn signals, cruise control, low alternator voltage, engine air filter restriction, engine oil pressure, engine coolant temperature, wait to start, hydraulic filter restriction
- yes___ no___ Machine shall have back-up lights and sounding alarm as standard when reverse gears are selected.
- yes___ no___ Cab will have Left Hand side of Cab a beacon
- yes___ no___ Unit shall have factory installed rear camera
- yes___ no___ The unit shall have a LH engine compartment light as standard equipment
- yes___ no___ Unit shall be equipped with factory heated outside mirrors

Operator Station (G)

- yes___ no___ Steering wheel and control console shall be tiltable
- yes___ no___ Left and right side cab doors are standard
- yes___ no___ Machine shall provide dual exits allowing for emergency egress should one side become obstructed
- yes___ no___ Three rearview mirrors shall be provided, one interior and two breakaway exterior mounted
- yes___ no___ AM/FM/WB Radio/XM Satellite Radio and Bluetooth, two speakers, antenna and wiring shall be available.
- yes___ no___ A front window sun visor and a rear sun shade shall be factory installed.
- yes___ no___ The motor grader shall be equipped with low cab and ROPS/FOPS, enclosed air conditioned cab, isolation frame mounted for noise and vibration reduction
- yes___ no___ Optional side opening window shall be included
- yes___ no___ A premium heated, leather/fabric, high wide back, air-suspension seat with armrests. Left and right side tandem case assemblies shall be covered with adequate platform for standing and walking.
- yes___ no___ Unit shall be equipped with both front and rear fenders for protection
- yes___ no___ The front glass shall be continuous and unobstructed glass from roofline to floor for visibility of the blade, heel and toe, back of the cutting edge and front tires. If choosing lower opening windows, the configuration changes slightly.
- yes___ no___ Unit shall be equipped with a lower front intermittent washer and wiper for snow conditions
- yes___ no___ The unit will come with a rear window electric defroster and retractable sun shade
- yes___ no___ Unit shall come with 5lb multi purpose ABC fire extinguisher
- yes___ no___ Unit shall come with a decelerator pedal
- yes___ no___ The upper front and rear windshield washers with intermittent wipers shall be standard

General Specifications

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- Machine Wheel Base (distance from front axle to mid tandem) shall not be less than 243.0 in .
yes___ no___
- Machine shall be designed and built by the manufacturer.
yes___ no___
- Transmission shall be designed and built by the machine manufacturer.
yes___ no___
- Max operating weight of the machine shall be 55,000 lbs. . Weight shall be the heaviest possible combination of compatible attachments, also including lubricants, full fuel tank and operator of 175 lbs. . Snow attachments excluded
yes___ no___
- Typical operating weight of the machine shall be 44,570 lbs. Weight shall include the base machine weight as well as the front push block, rear ripper/scarifier and other equipment
yes___ no___
- Base Machine Weight shall not be less than 38,320 lbs. Weight shall include: standard machine configuration, lubricants, coolants, full fuel tank and operator of 175 lbs. .
yes___ no___
- Six Cylinder, turbocharged with air-to-air after cooler diesel engine and shall be designed and built by the manufacturer
yes___ no___
- Hydraulic disconnect (soft start) and transmission valve solenoid guards shall be standard equipment
yes___ no___
- Ground level fueling and filling for diesel and diesel exhaust fluid shall be standard equipment
yes___ no___
- The frame shall be ready for snow wing attachment
yes___ no___

Frames and Structures

- The articulation joint shall have mechanical locking device to prevent frame articulation while servicing or transporting machine.
yes___ no___
- Unit will be provided with seven-position pin-locking saddle
yes___ no___

Circle and Mold Board

- There will be no less than 6 replaceable wear inserts between the circle and drawbar providing at least 163 in² of wear surface area.
yes___ no___
- Optional heavy duty dual input circle drive gearbox is included
yes___ no___
- The standard mounting hardware for cutting edges and end bits shall be 5/8 in (16 mm)
yes___ no___
- The draft frame pivot connection shall have a double Ball-in-Socket design with a minimum ball diameter of 6.0 in
yes___ no___
- The standard moldboard shall be at least 12 ft. (3657 mm) long, 24 in high and no less than 7/8 in thick with 5/8 in hardware
yes___ no___
- Moldboard will have reversible overlay end bits
yes___ no___
- The mold board will have quick change circle wear and side shift wear inserts, capable of being replaced in approximately 2 hours using only a 9/16" wrench.
yes___ no___
- Moldboard shall have a bank slope angle capability of at least 90 degrees to both sides.
yes___ no___
- Circle radial wear insert shall be replaced without removing the circle support castings for quick easy maintenance.
yes___ no___
- Moldboard wear strips shall be adjusted with lock screws, providing shim-less adjustment capability both vertical & horizontal.
yes___ no___

Serviceability

- Daily check points shall be accessible from the left side of the engine behind one service door and shall be done from ground level
yes___ no___
- Access to engine will be open from both sides with hinged engine side shields and full access service doors
yes___ no___

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- yes___ no___ Engine shall have environmentally friendly fuel drain valves
- yes___ no___ Fuel tank capacity shall not be less than 110 gallons .
- yes___ no___ Diesel exhaust fluid (DEF) tank capacity shall not be less than 6 gallons
- yes___ no___ Engine primary and final fuel filters shall have 500-hour service replacement interval.
Hydraulic, transmission, and differential filters shall be banked and easily assessable
through the engine compartment doors.
- yes___ no___ Engine oil filter shall be a 500-hour, vertical spin-on
- yes___ no___ Engine oil shall have a service interval of no less than 500 hours
- yes___ no___ Hydraulic oil filter shall have a service interval of no less than 2000 hours
- yes___ no___ Hydraulic oil change service interval shall be no less than 4000 hours
- yes___ no___ Transmission oil change service interval shall be no less than 2000 hours
- yes___ no___ Transmission oil filter service replacement interval shall be 2000 hours
- yes___ no___ Tandem oil shall have a service interval of no less than 4000 hours
- yes___ no___ Engine coolant shall have a service interval of no less than 6000 hours
The centralized lube bank shall be at the articulation joint to give access to difficult to reach
zerks
- yes___ no___ Sampling ports shall be accessible from the tandem level and provide access to the engine,
hydraulic, coolant, and fuel ports.
- yes___ no___ A two-way communication tool shall give service technicians easy access to stored
diagnostic data and allow configuration of machine parameters.
Unit shall be equipped with OEM provided wireless communication system capable of
monitoring and communicating machine location, fuel burn, as well as multiple other vehicle
performance data. In addition, the system shall be capable of updating system control
software wirelessly.
- yes___ no___ OEM wireless communication system will be available with machine purchase a minimum
of 5 years
- yes___ no___ Diesel particulate filter (DPF) ash service interval as needed (can go up to 15,000 hours
between diesel particulate filter ash removal)

Tires / Rims

- yes___ no___ Tires required: Michelin SnoPlus 17.5R25G3/L3 Single Star Radials with 3 piece rims

Safety

- yes___ no___ Machine shall provide 3 points of contact on all areas of the machine, for mounting and
dismounting.
- yes___ no___ Standard grey 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.
- yes___ no___ The unit shall have a fan finger guard
- yes___ no___ Standard high-resolution rearview camera with dedicated display shall be provided

Optional Equipment

- yes___ no___ A front scarifier will be included to match existing attachments
- yes___ no___ Front fenders will move with the front wheels and will be easily removable
- yes___ no___ Unit shall be equipped with a Decelerator pedal
- yes___ no___ Unit shall be equipped with a Henke 14' all hydraulic including rear lift snow wing with a 66"
frame post. Quick disconnect ball valves at exterior mount will be included
- yes___ no___ Warranty-Comprehensive 4 years or 1500 Hrs. which ever comes first