

Specification Requirements	Check If Meet or Exceed	Describe Offered Alternatives
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**I. General:**

1. Shall have a total operating weight of not less than 15,870 lbs.
2. The operating weight shall include full cab with ROPS, all operation fluids, operator and all standard features.
3. Hydro inflation and/or wheel weights will not be acceptable in obtaining the base operating weight.

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4. **Trade-In:**

The department desires to trade-in the aged unit(s) being replaced; therefore, a trade-in offer is required for this purchase.

If WSDOT elects to accept trade-in offers, a *Best Buy* evaluation method will be used to determine the purchase; whereas both the bid price and the trade-in offer will be taken into consideration to determine the overall best purchase for the state taxpayers. If the trade-in offer is not acceptable, only the bid price will be considered.

If a trade-in offer is accepted, the successful bidder agrees to

- a. Invoice WSDOT for the full purchase amount of the new unit(s). Trade-in amounts will not be deducted.
- b. Coordinate with WSDOT headquarters to arrange for trade-in pickup. The correct phone number is 360-705-7869
- c. Pay an invoice for the agreed upon trade-in amount(s) which will be issued by WSDOT headquarters after pick up arrangements have been finalized

*Note: Payment of this invoice will be made to WSDOT headquarters, as directed by the invoice*

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<b>II. Cab &amp; Chassis:</b>		
1. Operator noise exposure is limited to 86 dB (A) per SAE J919 June 86 ( <b>enclosed cab</b> ).		
2. Located in the pedestal head shall be the engine oil pressure, coolant temperature, fuel level gauges, voltmeter, transmission monitoring, parking brake warning light, transmission gear indicator, and a three-level electronic monitoring system.		
3. Pedestal located switches shall include: differential lock/unlock, independent moldboard floats and combination turn signal, hazard lights, and high beam headlight switch.		
4. All cab gauges shall be back lighted		
5. Heater and wiper/washer controls, lighting and accessory switches shall be grouped in the operator's console. This console also contains the ignition key and access to the circuit breaker panel.		
6. All cab glass shall be tinted.		
7. Shall be a full height cab with ROPS.		
8. The cab shall be designed to allow the operator full unit operation in either the standup or sit-down position.		
9. The cab shall come equipped with front and rear wipers, windshield, windshield washers, and a 40,000 BTU fresh air and hot water heater, defroster fan front and rear, cab pressurize.		
10. Shall be equipped with a suspension seat and seat belt.		
11. Shall be equipped with inside and outside rear view mirrors to include convex mirrors on both exterior mirrors.		
12. The cab shall be equipped with vandalism protection.		

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**III. Hydraulics:**

1. The hydraulic system shall provide constant implement response at any engine speed.
2. Shall be equipped with lock valves on the wheel lean, moldboard tilt and the articulation control circuits.
3. The controls shall have the ability to be operated in either the standup or sit down operator position.
4. Shall be equipped with a moveable control console.
5. Shall be equipped with valveing and plumbing to accommodate a front mounted reversible plow. (Two hydraulic circuits at the front of the unit)
6. The system shall have the ability for more than one control without any decrease in control response and or speed.
7. The system shall be equipped with reservoir and filtration.

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**IV. Lighting:**

1. Shall be equipped with headlights mounted on the front of the grader and on the cab.
2. The headlights shall be of the high-profile type lights.
3. Shall be equipped with rear facing floodlights.
4. Shall be equipped with work lights on the moldboard.
5. Shall be equipped with a strobe warning light located on top of the cab and centered.
6. Shall be equipped with two alternating flashing amber warning lights located on each radiator support.
7. Shall be equipped with a left and right point arrow board mounted on top rear portion of the engine housing.

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<b>V. <u>Engine:</u></b>		
1. Shall be a direct injection Cummins 4BT3.9 naturally aspirated diesel engine.	_____	_____
2. Shall have a net horsepower of 110 HP 2500 RPM.	_____	_____
3. Engine equipped with a two stages, dual element, and dry-type air cleaner with a dash-mounted service indicator.	_____	_____
<i>Note: The equipment shall be equipped with a Donaldson Cyclotron pre-cleaner.</i>	_____	_____
4. Shall be equipped with a 12-volt starting and electrical system with 65-amp (780 watt) alternator with internal voltage regulator.	_____	_____
5. Shall be equipped with auto-reset circuit breakers in lieu of fuses.	_____	_____
6. The engine compartment shall come with lockable side shields and keyed alike.	_____	_____
7. Shall be equipped with a 110 volt 1500 watt block heater.	_____	_____
8. Shall be equipped; with glow plugs or either start kit.	_____	_____
<b>VI. <u>Transmission:</u></b>		
1. Shall be a hydrostatic drive transmission.		
2. Shall have one forward and one reverse speed.	_____	_____
3. Engine shall not have the ability to be started when transmission is in gear.	_____	_____
4. Shall be equipped with a Dual lever for speed and direction.	_____	_____

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<b>VII. <u>Differential/Final Drive:</u></b>		
1. Shall be equipped with a positive traction differential with automatic Lock/Unlock	_____	_____
2. Unit shall have all wheel drive.	_____	_____
3. Shall be quipped with a two-speed gearbox.	_____	_____
<i>Note: The lock/unlock feature shall be usable in all gears both forward and reverse.</i>	_____	_____
4. The final drives shall be constructed to allow the use of tire chains on all tires.	_____	_____
<b>VIII. <u>Brakes:</u></b>		
1. Service Brakes shall be foot operated.	_____	_____
2. Shall be equipped with fade resistant, hydraulically actuated, oil disc service brakes located at the four (4) tandem drive wheels.	_____	_____
3. The brakes shall be self-adjusting, fully sealed and maintenance-free.	_____	_____
4. The brake system shall have crossover dual braking circuits for even braking on both sides of the grader.	_____	_____
5. Shall be equipped with reserve power assist braking and operator warning system (visual and audible) for dead engine braking.	_____	_____
6. The parking brake shall be hand operated.	_____	_____
<i>Note: The parking brake shall hold the entire unit on a 15 percent grade.</i>	_____	_____
7. Shall be equipped with visual and audible operator warning system for parking brake on, transmission in gear condition.	_____	_____

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<b>IX. <u>Wheels &amp; Tires:</u></b>		
1. Shall be equipped with Michelin Snow Plus Radial 15 X 19.5 with a one star rating tubeless traction tires mounted on 12.25-inch rims.	<hr/>	<hr/>
2. Shall have a total of seven (7) complete tire and rim assemblies that are interchangeable from front to rear.	<hr/>	<hr/>
<b>X. <u>Front Axle:</u></b>		
Shall be equipped with twin wheel lean a single oscillation pin with replaceable pin supports.	<hr/>	<hr/>
<b>XI. <u>Steering:</u></b>		
1. Shall be a full hydraulic system.	<hr/>	<hr/>
2. The turning radius shall be not more than 17 feet with an articulation angle of 37 Degrees.	<hr/>	<hr/>
3. Shall be equipped with dead engine steering.	<hr/>	<hr/>
<b>XII. <u>Frame:</u></b>		
1. The frame shall be an articulated design.	<hr/>	<hr/>
2. Shall have in cab indicator to indicate the degrees of articulation.	<hr/>	<hr/>
3. Shall be equipped with factory-installed tie down brackets for transportation on a lowboy trailer.	<hr/>	<hr/>
4. The unit shall have a manufacturers lifetime warranty on the frame.	<hr/>	<hr/>
5. Shall be equipped with a front and rear tow hooks.	<hr/>	<hr/>
6. Shall be equipped with a toolbox as per vendor's location.	<hr/>	<hr/>
7. The painting of the unit shall be Sikkens 4039 National Safety Yellow.	<hr/>	<hr/>

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8. The paint shall be warranted for a period of 5 years.	<hr/>	<hr/>
<b>XIII. <u>Circle Drive:</u></b>		
1. Shall be a dual cylinder circle drive system using direct-acting hydraulic power.	<hr/>	<hr/>
2. The circle drive system shall be fully protected against impact damage by an overload cushion valve.	<hr/>	<hr/>
3. Shall be equipped with overload protection.	<hr/>	<hr/>
4. Shall be capable of rotating 120 degrees.	<hr/>	<hr/>
<b>XIV. <u>Moldboard:</u></b>		
1. Shall be equipped with a standard moldboard with replaceable end bits measuring 11 ' x 19" x 5/8"	<hr/>	<hr/>
2. Edge shall be through-hardened 1/2" X 6" boron steel.	<hr/>	<hr/>
<i>Note: The cutting edge shall be guaranteed against breakage for the life of the unit.</i>	<hr/>	<hr/>
3. The edge shall be in two sections, one measuring 6 inches X 6 feet X 1/2 inch and one measuring 6 inches X 5 feet X 1/2 inch.	<hr/>	<hr/>
4. Shall be equipped with hydraulic power tilt, power shift and moldboard float.	<hr/>	<hr/>
5. Shall be equipped with replaceable side shift rails.	<hr/>	<hr/>

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**XV. Exterior Finish:**

WSDOT expects professional workmanship on all products purchased. With this in mind, the following finishing requirements will be closely scrutinized during the specification compliance inspection.

1. There shall be no welding scale, roughness, sharp corners; or rust stains on the unit.
2. The unit shall be coated with 2 mils dry automotive quality primers, with an additional 2 mils dry of the manufacturers standard color.
3. The body paint shall be warranted against rust and corrosion for five years.
4. Each side of the unit shall be equipped with the WSDOT decals prior to the compliance inspection. The successful bidder will notify **Billboard Signs at 206-300-7300** for installation. The decaling will be invoiced to WSDOT by the installer.

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**XVI. Publications:**

1. Each unit shall be delivered with an operator's manual.
2. Bidders shall provide the Service, and Parts Manuals as annotated below.
  - 1 Parts Manual (Per Unit)
  - 1 Service Manual (Per Unit)

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