



INVITATION FOR BID (IFB)

Name of Good or Service Requested:

(2) New 2024 37,000 GVW Single Axle Trucks with Dump/Sander/Plow

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Exhibit A – Contract Requirements and Specifications

Exhibit B – Pricing and Addendum



A. Summary of Invitation for Bid

This bid is for the purpose of entering into a contract for (2) 2024 Single Axle Trucks with Dump/Sander/Plow for the City of Billings' Public Works Department, Streets and Traffic Division. The successful bidder agrees to provide the City of Billings with an acceptable quality of equipment/service, performance and workmanship as determined by the City.

It is the purpose of this bid to obtain the best quality of equipment/service at the most favorable price to the City of Billings. Consideration will be given for the level of service offered and ability to meet stated specifications as outlined in the contract documents.

The lowest bid need not be accepted if it is documented that a specific supplier in the past has been a poor performer or has provided poor goods.

B. Instructions to Bidders

Sealed bids entitled **(2) 2024 Single Axle Trucks with Dump/Sander/Plow** for the City of Billings' Public Works Department, Billings, Montana will be received by the City Clerk up until 2:00 PM (MST) on Tuesday April 2, 2024.

All bids may be submitted to the Billings City Clerk, via email at bids@billingsmt.gov, or via mail or delivery 210 N. 27th Street, Billings, MT 59101 (P. O. Box 1178, Billings, MT 59103). Bids will be publicly opened and read aloud via Facebook Live on the City's Facebook page: <https://www.facebook.com/Billings-MT-City-Government-74352842013/>. Bid tabulations will be posted for public viewing after the bids have been opened.

More specific additional information regarding this **(2) 2024 Single Axle Trucks with Dump/Sander/Plow** may be obtained by contacting Derick Miller via telephone at 406-657-8354, or via email at millerd@billingsmt.gov.

Each bid must be accompanied by a Certified Check, Cashier's Check, or Bid Bond payable to the City of Billings, Montana, in the amount not less than ten percent (10%) of the total amount of the bid. The bid security will be retained by the City Clerk until the successful bidder enters into a contract with the City of Billings. If no contract is entered into, by the successful bidder, within sixty (60) days the security may be forfeited to the City of Billings.

No bids may be withdrawn after the scheduled time for the public opening of bids, which is 2:00 PM (MST) on Tuesday, April 2, 2024.



The right is reserved to reject any or all bids received, to waive irregularities, to postpone the award of the contract for a period of not to exceed sixty (60) days, and to accept that bid which is in the best interests of the City of Billings, Montana.

The City of Billings is an Equal Opportunity Employer. The Contractor and subcontractor shall abide by the requirements of 41 CFR 60-300.5(a) and 41 CFR 60-741.5(a), which prohibit discrimination against qualified protected veterans and/or qualified individuals on the basis of disability, and requires affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified protected veterans and individuals with disabilities.

EXAMINATION OF DOCUMENTS

Before submitting a bid, the bidder shall:

- a. Carefully examine the Standards and Specifications as well as all other attached documents;
- b. Fully inform themselves of the existing conditions and limitations;
- c. Include with the bid sufficient information to cover all items required in the specifications.

BID COMPLIANCE

It shall be the responsibility of the bidder to see that all bids are submitted to the office of the City Clerk before 2:00 PM (MST) on Tuesday, April 2, 2024.

BID MODIFICATIONS

Bids shall be made on the forms provided herein; they shall not contain any recapitulation of the work to be done. Modifications, additions or changes to the terms and conditions of this Invitation for Bid may be cause for rejection of the bid. Bids submitted on other forms may be rejected.

INTERPRETATION PRIORITY

Should a bidder find discrepancies in, or omissions from, the specifications, or be in doubt as to their meaning, bidder shall notify Derick Miller at 406-657-8354 who will send written instructions or addenda to all bidders. The City will not be responsible for oral interpretation. All addenda issued prior to bid opening shall be incorporated into and become a portion and part of the contract/agreement upon award. Questions received less than ninety-six (96) hours before the bid opening cannot be answered.



WITHDRAWAL OF BIDS

Bidders may withdraw their bid either personally or by written request at any time prior to the time set for bid opening. No bid may be withdrawn or modified after the time set for opening, unless and until the award of the contract is delayed for a period exceeding sixty (60) days.

BID PRICE VALID

Bidders must honor their bid price for sixty (60) days from the date of sealed bid opening.

FUTURE PURCHASES

The bid price will remain in effect for the duration of the model year production and within the manufacturer's capacity to produce the units. The City may place additional orders for vehicles from the prices established as a result of this bid.

The prices established from this bid may be extended to other political subdivisions within the State of Montana solely at the vendor's discretion.

CERTIFICATION

The bidder certifies that the bid has been arrived at by the bidder independently and has been submitted without any collusion designed to limit independent bidding or competition. The bidder further certifies that the materials, products, services and/or goods offered herein meet all requirements of the stated specifications and are equal in quality, value and performance with highest quality, nationally advertised brand and/or trade names.

Any manufacturer's trade names, if used in specifications, are for the express purpose of establishing a standard of quality and coordination of design, not for the purpose of limiting competition.

ELIGIBILITY

The successful bidder may be required to provide copies of the following, or the ability to obtain the following within 15 days of notification of contract award:

- Completed and signed new vendor forms, if necessary (to be eligible for payment): <http://mtbillings3.civicplus.com/DocumentCenter/View/26004>
- City of Billings Business License: <http://www.billingsmt.gov/981/Business-Licenses>



- Montana Contractor's License: <http://erd.dli.mt.gov/work-comp-regulations/montana-contractor/construction-contractor-registration>
- Certificate of Workman's Compensation or Certificate of Exemption from Workman's Compensation: <http://erd.dli.mt.gov/work-comp-regulations>

EVIDENCE OF QUALIFICATION

Upon request of the City of Billings, a bidder whose bid is under consideration for award may be required to manifest satisfactory evidence of his financial resources, experience, the organization and equipment as well as service provisions bidder has available or will make available. In determining the lowest responsible bidder, in addition to price, the following considerations may be addressed:

- a) The ability, capacity and skill of the bidder to perform the contract or provide the service required.
- b) The character, integrity, reputation, judgment, experience and efficiency of the bidder.
- c) Whether the bidder can perform the contract within time specified.
- d) The quality of performance of previous contracts, agreements and/or performance.
- e) Previous and/or existing compliance by the bidder with laws relating to the contract or services.
- f) Such other information which may be secured having a bearing on the decision to award the contract.

C. Contract Requirements and Specifications

See Exhibit A.

D. Pricing and Addendum

See Exhibit B.

E. Standard Terms and Conditions

In case of default by the successful bidder or failure to deliver the goods or services within the time specified, the City Purchasing Agent, after written notice, may procure them from other sources and hold contractor responsible for excess costs occasioned thereby.

The specifications attached to the instructions to bidders establish a standard of quality desired by the City of Billings. Any bidder may submit quotations on any article which substantially complies with these specifications as to quality, workmanship and service. The City of Billings reserves the right to make its



selections of materials or services purchased, based on its best judgment as to which articles substantially comply with the requirements of the specifications.

No alteration in any of the terms, conditions, delivery, quality, or specifications will be effective without prior written consent of the City of Billings.

No exception to delivery or service dates shall be allowed unless prior written approval is first obtained from the City of Billings.

The contractor warrants all articles supplied under this contract to conform to specifications, herein. The contractor will deliver a warranty stating that all articles supplied under the contract are fit and sufficient for the purpose manufactured, merchantable, and free from defects.

In the event the City is entitled to a prompt payment or cash discount, the period of computation shall commence on the date of delivery, or receipt of correctly completed invoices, whichever is later. If an adjustment of payment is necessary, the discount period shall commence on the date final approval for payment is authorized.

The contractor agrees not to discriminate against any client, employee or applicant for employment or for services, because of race, creed, color, national origin, sex or age with regard to, but not limited to, the following: employment upgrading; demotion or transfer; recruitment or recruitment advertising; layoffs and termination; rates of pay or other forms of compensation; selection for training; rendition of services. It is further understood that any contractor who is in violation of this shall be barred forthwith from receiving awards of any purchase order for the City unless a satisfactory showing is made that discriminatory practices have terminated and that a reoccurrence of such acts are unlikely.

The City reserves the right to cancel and terminate this contract forthwith upon giving 30 days written notice to the contractor. (This provision does not apply to the purchase of materials and equipment. A purchase order for materials and equipment is a binding contract.)

Should either party employ an attorney or attorneys or utilize the services of in-house attorneys to enforce any of the provisions hereof or to protect its interest in any manner arising under this contract, the non-prevailing party in any action pursued in a court of competent jurisdiction agrees to pay to the prevailing party all reasonable costs, damages, expenses, and attorneys' fees, including fees for in-house attorneys, expended or incurred in connection therewith.

Where applicable, possible or required, bidder is required to submit descriptive literature, sample material, design sketches and detailed shop drawings. Failure to



submit required items may result in rejection of the bid or termination of contract.

The successful bidder may not make any advertising or sale use of the fact that contract items are being used by purchaser and other approved agencies, under penalty of contract termination.

This Agreement shall be construed and enforced in accordance with the laws of the State of Montana. Venue for any suit between the parties arising out of this Agreement shall be the State of Montana Thirteenth Judicial District Court, Yellowstone County.

The contractor may not assign or subcontract the agreement, or the right to receive reasonable performance of any act called for by the contract, shall be deemed waived by a waiver by City of a breach thereof as to any particular transaction or occurrence.

Regardless of FOB point, contractor agrees to bear all risks of loss, injury, or destruction of goods and materials ordered herein and such loss, injury, or destruction shall not release contractor from any obligation hereunder.

All materials submitted in response to this IFB become public records under Article II, Section 9 of the Montana Constitution and §§ 2-6-102 and 7-1-4144, MCA and may be distributed by written request pursuant to Montana's Constitutional Right to Know or Public Records Acts.

Information provided in response to this IFB will be held in confidence and will not be revealed or discussed with competitors prior to award of Contract by Council. However, one copy of each bid submitted shall be retained for the official files of the Department and will become public record after award of the Contract.

Records and materials that are constitutionally protected from disclosure are not subject to the provisions of this section.



G. Questions

Questions regarding this Invitation for Bids must be sent to the contact person listed in Section B no later than 5 business days prior to due date. The City will make every effort to provide a written response within 2 business days. Whenever responses to inquiries would constitute a modification or addition to the original IFB, the reply will be made in the form of an addendum to the IFB, a copy of which will be posted on the City's website and forwarded to all Suppliers who have submitted an "Intent to Respond" form (Section G).

Supplier must submit their questions via email using the "Master Q & A" form found below (Attachment A), and provide, at a minimum, the following:

- Supplier's name, requester, and appropriate contact information.
- The question, clearly stated.
- Specific reference to the applicable IFB section(s).

H. Protests

Any Bidder protest of award recommendations and/or bid specifications must be filed with the Purchasing Agent within seven (7) days of bid opening.

Upon receiving a written protest, the Purchasing Agent, with assistance from the Legal Department, determines if the protest has sufficient merit and if so, schedules an informal hearing with the protesting bidder and the user Department.

At this hearing, all parties discuss the basis of the protest and attempt to resolve the dispute based on fact. If the protesting party is not in agreement with the results of the informal hearing, they may appeal to the City Administrator.



ATTACHMENT A

MASTER Q & A FORM

IFB: (2) 2024 Single Axle Trucks with Dump/Sander/Plow

Master Q&A	Any questions regarding this IFB should be submitted according to the process outlined below. The City will make every effort to answer within two (2) days of receiving the questions.
Q&A Process	<ol style="list-style-type: none"> 1. Prepare questions or concerns on the template provided. 2. Complete the table in full, providing a date for each question and a section of the IFB to reference (if applicable). 3. Submit the completed form via email to millerd@billingsmt.gov. Attach associated documents as necessary. <p>Please contact Derick Miller with any questions regarding this process.</p>

Questions from: _____ Company: _____

#	Date	Reference Section	Question or Comment	City Response
1				
2				
3				
4				

Email Address: _____



Exhibit A

CONTRACT SPECIFICATIONS

TWO (2) NEW CURRENT MODEL 2024 37,000 G.V.W. SINGLE AXLE TRUCKS WITH DUMP/ SANDER/PLOW

<u>DESCRIPTION</u>	<u>MINIMUM REQUIRED</u>	<u>SPECIFICATION BID</u>
INTENT	The single axle dump/sander/plow truck will play a major role in winter operations for the City of Billings. The main function of the unit will be plowing snow and sanding streets. This unit must be capable of both of these operations simultaneously under severe weather conditions. This truck may also be used for transporting materials and debris during the off-season when it is not being used in winter operations.	
ENGINE	9 Liter Minimum 330 HP @ 2200 RPM 1000 lb ft torque @ 1200 RPM list engine and horsepower	_____
	Re-Gen engine active factory Set for 0 Mph	_____
ENGINE EQUIPMENT	Exhaust Brake	_____
	Fuel/water separator, Racor or equal with warning light	_____
	DEF tank will come with factory installed insulating blanket	_____
	Electronic engine integral shutdown protection system Low coolant, High Temp Low oil pressure	_____
	2 - 12 volt maintenance free 2000 CCA (Total), (mounted drivers side Under cab)	_____
	Battery disconnect: Cole Hersee Co. #2484 or equal	_____



	(mounted on cab driver side)	_____
	All outside electrical components will be sealed from elements by means of box covering/coverings	_____
	160 amp alternator	_____
	Longlife antifreeze to -34F	_____
	120V Block Heater	_____
	Spin-on Filter with “Need Release” element	_____
TRANSMISSION	Allison 3500 RDS automatic Transmission with PTO provision	_____
	Push button, electronic shift control, dash mounted	_____
	Water to oil transmission cooler – in radiator end tank	_____
	Synthetic automatic transmission oil (TES 295 Compliant)	_____
GROSS VEHICLE WEIGHT	37,000 lb	_____
FRONT AXLE	16,000 lb single front axle and springs, front shock absorbers, power steering	_____
REAR AXLE	21,000 lb single rear axle 6.14 rear axle ratio	_____
	30,000 lb flat leaf rear Suspension with helper radius Rod and helper overload spring	_____
	Cab to axle length shall be Box manufacturers Specification (list length)	_____



Synthetic 75W-90W all axles _____

BRAKES

Air Dual System:

Dust Shields (Front & Rear) _____

Parking brake valve (Instrument
Panel) _____

Air dryer w/heater (Bendix
AD-9) or equal _____

FRAME

120 KSI _____

24" Front integral frame
Extension _____

TRAILER CONNECTION

7 Way RV trailer wiring package
With plastic 7 way plug _____

Wire prep chassis for brake
Controller with brake controller _____
45 Ton pintle hitch _____

FUEL TANK

One 50-gallon LH step tank
(mounted on driver side) _____

TIRES

Four (4) 11R 22.5, 14 ply, tube-
less, traction type steel radial _____

Two (2) 315/80R 22.5 (18 ply)
tube-less highway type steel radial _____

WHEELS

Four (4), rear 22.5 x 8.25,
10- Hub Piloted _____

Two (2) front 22.5 x 9 10-Hub piloted _____

EXHAUST

Vertical, Passenger side mount
EPA 2010 Federal Emissions
Requirements _____

CAB

Conventional Cab _____
Front-end tilt hood type w/access
Doors _____

Air cab mounts _____

Adjustable tilt and telescoping _____

Steering column _____

Cab grab handles – LH & RH _____



Air horn	_____
King-size, West-Coast type,	
Heated LH & RH remote,	
With 8" Auxiliary Convex mirrors,	
separately mounted	_____
RH Down view mirror	_____

CAB INTERIOR

AM/FM Radio/Bluetooth	_____
Tinted glass	_____
Intermittent Wipers	_____
2-1/2lb fire extinguisher	_____
Heater, defroster and air	
Conditioner	_____
Dome door activated LH,	
dual reading light, forward	
cab roof	_____
(1) 12V power supply in dash	_____
12V Power Supply for two-way	
Radio located in header	_____
(Hot wire and ground wire)	
Six switches in dash with	
indicator lamps with wire to	
chassis at back of cab	_____
Factory wiring for plow lights	
With factory switch in dash	_____
Seat Driver – National 2000 High	
Suspension Bucket type seats or	
Equal with Heavy Duty Vinyl	
Dual driver's seat armrest	_____
Seat Passenger - Fixed Seat	
High back with integral head	
Rest, Heavy Duty Vinyl, inbound	
Passenger seat armrest	_____
Triangular reflectors without	
Flares	_____

INSTRUMENTS/CONTROLS

Dash mounted air restriction	
indicator with graduations	_____
97 DB backup alarm	_____

GAUGES

Air pressure	_____
Engine Oil pressure	_____
Water Temperature	_____
Fuel	_____

[illegible]



all horizontal edges sloped outward_____

$\frac{3}{4}$ cab shield shall be mounted to
frame and not be part of dump box.
And shall be mounted in such a way
That material can't fall between the
Dump box and cab shield _____

Right and Left side ladders for
Access to box _____

(1)One drivers side shovel holder _____

MATERIAL VIBRATOR

Removable mud flaps
Cougar DC2700 shaker or equal _____

CONVEYOR

28" wide main conveyor minimum
(1)spare conveyor for each truck _____

Conveyor cover in 3/16" AR400 steel _____

Conveyor shall **NOT** extend beyond rear
of tailgate _____
10 gauge stainless steel bolt-in
underbody pan to keep material off
chassis frame _____

FRONT SPINNER CHUTE ASSEMBLY

Adjustable feed gate _____

Spinner assembly must be adjustable left
to right, front to back, and up and down
to assure accurate placement of material
on spinner disc to facilitate control of spread
pattern _____

7 gauge minimum, 20" diameter
spinner disc to have replaceable
machined hubs _____

Stainless steel spinner disc –
(1) spare disc for each truck to be
supplied. _____



Spinner hydraulic motor shall mount directly on top of spinner disc. Motor shall be enclosed in a removable material shedding protective cover. _____

TAILGATE

Tailgate to operate as a normal dump body tailgate _____

Air operated Tailgate must be double acting _____

HOIST

Front mounted cylinder _____

N.T.E.A. class (40) _____

Wear and corrosion resistant nitride cylinder tubes _____

Minimum two-year cylinder warranty _____

Connecting pivots to have replaceable greaseless composite bushings _____

30 gallon minimum behind-the-cab, cradle-mounted hydraulic reservoir _____

LIGHT PACKAGE

Rubber mounted, shock resistant (LED) stop/turn/tail light in each rear corner post. Highly visible, yet recessed for protection. Four red rear, two side mounted red rear reflectors, and two side mounted amber front reflectors. Includes a one piece sealed wiring harness _____

Rear amber warning lights to flash in a "Wig-Wag" fashion _____

Rubber mounted, shock resistant I.C.C. 3-light cluster for mounting in _____



a supplied fabricated light bar _____
(1)LED work light mounted rearward/wired _____
in factory switch _____

PAINT PREPARATION

All surfaces are high pressure cleaned
in phosphate _____

Primed with a high quality two
component primer _____

PLOW SECTION

10' folding V plow _____
(Henke FVX 10 or equal) _____

List moldboard length _____
Angle length _____
Scoop Length _____
Plow height _____

Low mount quick connects for truck
and plow mounts **SHALL** be compatible
With existing fleet.(Wausau 225c
Low mount model or
Equal) _____

Snow deflector w/safety sticks _____

Plow lights mounted on truck cab _____

Console-type controls mounted
And adequately braced to eliminate
vibration. Snow plow control to
be "Joy Stick" type.
Force America CommandAll single
series with model 6100 spreader
control _____

CONTROL VALVE:

The hydraulic valve shall be of modular manifold design. Each hydraulic function requires an individual manifold stacked together to form the manifold base. The manifold base shall consist of an inlet section with SAE #16 inlet porting, SAE #20 outlet porting, and SAE #4 load sense porting. There shall be a main system relief in the inlet



section to protect the system from high pressure in case the pump compensators fail. The dump body manifold shall be stacked next to the inlet section, and capable of 35 GPM with SAE #12 porting. The hydraulic control valves shall be pulse-width modulated, proportionally controlled. Each hydraulic valve segment shall be individually mounted to the manifold base assembly and be serviceable without removing any hydraulic hoses or any other hydraulic valve segments. Each hydraulic valve segment shall have individual pressure compensation to achieve independent simultaneous operations. All segments shall have heavy-duty continuous duty coils and connections shall be with Din connectors. All coils shall operate at 12 VDC and require a maximum of 1400 milliamps. Each segment shall be equipped with a manual overrides. The dump body segment shall be rated to 35 GPM, with all other segments rated to 20 GPM. If a double acting hoist is utilized, the dump body segment shall be equipped with a down side relief to protect the body down function. This relief shall be set to the hoist manufacturer's specifications. Valve segments shall be Add-A-Fold® model or prior approved equal. The valve is to be arranged as follows:

- ❑ Hoist, 3-way
- ❑ Plow Lift, 3-way with float
- ❑ Plow Angle, 4-way
- ❑ Plow Tilt/Attack angle 4 way
- ❑ Plow Scoop 4-way
- ❑ Plow Vee 4-way
- ❑ Spin-A-Veyer section, consisting of two pressure compensated cartridges that are a single piece design with hardened cartridge bores and spools. These shall be operated independently via a 12 VDC pulse width modulated signal. Each valve shall have heavy duty 7/16-20 UNF screw style manual overrides that are adjustable from no flow to full flow. These valves shall be mounted in a housing that is made of aluminum with gray anodizing for corrosion resistance and durability. The auger/conveyor shall be a 14 GPM spool and the spinner shall be a 7 GPM spool. The electrical connections shall be din connectors.

HYDRAULIC PUMP AND PTO: (TXV92 & 267 CONSTANT MESH)

The hydraulic pump shall be an axial piston pressure and flow compensated load-sensing type. The pump shall have a displacement of 5.61 cubic inches per revolution at maximum stroke which will deliver 23.7 gpm @ 1000 engine rpm. The pump shall have



a minimum 2" inch suction line and ½" control drain line plumbed directly back to the reservoir. The pumps compensator shall have rear facing adjustments. The pump shall be rated for 5800 PSI maximum and 4800 PSI continuous. The pump shall have a Din type-mounting flange and a Din 5462 8-tooth shaft. The pump shall be FORCE America TXV92 or prior approved equal. A Chelsea 267 series constant mesh PTO that is mounted to the transmission shall drive the pump.

SHUT DOWN SYSTEM

There shall be a float type level sensor for low oil mounted through the top of the reservoir. It will be a normally open circuit rated for 3 amps. When the oil reaches a critical level this circuit will close sending a signal to a relay, disengaging the PTO and pump, shutting off the flow of oil to the system. At the same time, a signal will be sent to an indicator light on the control panel that alerts the operator of system shut down. The control panel will also incorporate a momentary override switch wired to de-energize the shut down system to facilitate diagnostics and equipment storage.

RESERVOIR/ VALVE ENCLOSURE: (VT35 Gen II Option)

The hydraulic reservoir will be of 35 gallons nominal capacity.

The hydraulic reservoir will be constructed of 10-gauge steel and be internally baffled.

The valve enclosure lid will protect from both road and pressure washer spray.

For ease of removal by a single person, the valve enclosure lid shall weigh less than 22 lbs.

The valve enclosure lid shall be black high density polyethylene with stainless steel reinforcements.

The valve enclosure lid shall have molded integrated handle for ease of removal.

The valve enclosure lid shall be attached to the reservoir via (4) rubber straps that can be removed without the use of any tools.

Mounting bracket is to be designed and supplied by the reservoir supplier.

Mounting system should allow for a 1" frame clearance for frame obstructions.

Shall be mounted in a manner as to not transmit any truck torsional loads thru the tank.

The enclosure will use a gasket-less passive technology. (No rubber seals, gaskets, or weather stripping.)

The enclosure lid will be removable within seconds by one person without the use of tools.

All valve fittings, hose ends, filter, filler breather, sending units and any electrical connections are to be protected by enclosure cover.

The reservoir supplier will provide all valve fittings (JIC connections) and plumb the return line from the valve to the filter.

The cover will protect from both road and pressure washer spray.

The use of bulkhead fittings is not permitted.



The directional control valve must be easily accessible from all (6) sides without the use of tools.

Hose exit and entrance must allow for components to be mounted adjacent to the enclosure.

A 2" full flow brass ball valve shall be plumbed at the suction port of the tank.

A low oil/high temp sending unit shall be mounted in the reservoir.

The valve/tank assembly shall be a Force America model "VT35G2 Valve/Tank Assembly" or prior approved equal.

FILTER:

Hydraulic oil filter shall be mounted in the reservoir. Hydraulic filter shall be a 16-micron absolute and rated for no less than 70 GPM. Filter shall be model TS1600251S0/ZSRE40910 or prior approved equal and include visual and electrical bypass indicators. The filter cartridge shall be constructed of a synthetic media. The return port in the filter shall be SAE #20 or larger. A warning light shall be mounted in the cab and wired to the electrical filter bypass indicator. The system shall be delivered with one spare filter element.

CONTROL CENTER:

Controls for all valve functions and electronic spreader control will be integrated into a single, self-contained control center. The control center shall be a padded armrest style that is ergonomically designed. Control center shall be modular in design for ease of installation and service, and wiring and connectors shall be color coded throughout. A sealed, pre-wired harness for all valve controls must be provided. All components must be durable for long life and trouble free operation.

The electronic controller shall be a fully proportional single-stick controller to operate all cylinder functions. Controller shall be of a modular design. Single-stick communication electronics shall include as standard the capability to control the proportional outputs of selectable functions.

- Joystick to default to plow turn lift/lower function
- Push button 1 function to activate scoop and vee
- Push button 2 to activate plow attack angle function
- Interlock trigger to activate dump body hoist function

Controls for spreader must be located on armrest at the operator's hand. There shall also be three auxiliary switches available with one other being the main power switch for the spreader control. Low/hot oil override momentary switch. The switches shall be located right of the joystick.



ELECTRONIC SPREADER CONTROL

The electronic spreader control shall be designed for precise, closed-loop control of granular and pre-wet liquid applications and operate on a CAN Bus protocol. The Central Processing Unit (CPU) shall have keyed and color coded connections to prevent incorrect installation. The CPU shall be mounted in the cab with visual access to diagnostic LED's. Mounting of the CPU unit outside of the cab is unacceptable. The unit shall have USB connectivity for file and data transfer, Ethernet connection, a J1939 communication port for connection to the vehicle bus, a second CAN bus communication port for spreader-only data use, a J1708 connection for a road and air temperature sensor, and a RS-232 connection for AVL communication. The CPU shall have on-board diagnostics, which provide real-time status of CAN bus communication, processor activity, and power status. The CPU shall have a built-in audible alarm for diagnostic purposes. The CPU operating system shall NOT be Windows-based.

The spreader control interface shall have two, color-coded, continuous rotation encoders for granular and spinner control. These encoders shall have integrated push buttons for blast mode and stand-by. The controller shall have a third multifunction 4-way joystick that has an integrated rotary encoder and push button, that can be used for menu navigation, pre-wet liquid control, or an additional conveyor function. There shall be four, two-way soft keys included in the interface that are generically-labeled and user-configurable for different functions depending on the equipment needs. The controller shall also utilize iButton technology that is capable of using a Supervisor key to provide access to the calibration parameters without the access code. The entire operator interface shall be backlit and encased in flexible silicone material with wear-limiting coating applied to the base silicone material. The operator interface shall communicate on the spreader control system CAN bus.

The spreader control display shall be a remotely-mounted, 7" diagonal color TFT LCD, with a low-profile 16:9 widescreen format and minimum of 800X480 pixel resolution. LCD shall have variable LED backlighting. CCFL backlighting is unacceptable. The display shall include a scratch-resistant polycarbonate lens with anti-glare coating. A power status LED shall be immediately visible on the front of the display and shall report display diagnostics including loss of CAN communication. Display unit shall have a built-in audible alarm. To avoid driver distraction, the display shall have no integrated dials or pushbuttons and shall not be touch screen. LCD shall communicate on the spreader control system CAN bus.

The operator menus shall be color-coded to match the encoder knobs on the operator interface. The display shall be capable of displaying the following on-screen simultaneously: Granular material name, granular material set point and actual application rate including units of measure, pre-wet liquid name, pre-wet liquid set point and actual application rate including units of measure, spread width, road temperature, air temperature, material usage total, liquid usage total, vehicle speed, and current date and time. The operator shall have the option of selecting five data items to be displayed



onscreen during operation. The display will also provide four warning light indicators for low oil level, body up, oil temp, and filter bypass. These warning lights are to be functional regardless of spreader operation or status.

The display must provide visual indication that the spreader control is connected to a compatible AVL device, if equipped. The spreader control shall warn operator if communication with the AVL device fails at power-up.

A proportional PWM driver and input module (Valve Module) shall be remotely-mounted inside the hydraulic valve enclosure for control of both spreader control and joystick control outputs. The entire Valve Module shall be of rugged design for the mobile environment, and must meet IP68 requirements for dust and water ingress. The Valve Module shall include a minimum of eight proportional PWM outputs with potted valve output connections. All outputs shall be protected against short-circuits. Outputs shall be current-compensated and have adjustable PWM frequency. There shall be a minimum of five switch-to-ground type inputs for monitoring hydraulic system inputs such as oil level, body up, Hi and Low filter bypass, and oil temperature warnings.

A minimum of two switch-to-ground type pulse train inputs shall be included in the Valve Module for connection of feedback sensors such as auger feedback and prewet liquid flowmeter feedback. A keyed and color-coded connection shall be provided for CAN bus connection to the CPU module inside the cab. A second CAN bus connection must be provided for daisy-chaining of multiple Valve Modules within the valve enclosure. Diagnostic LED's shall be included for every input and output on the Valve Module, as well as a power status LED and CAN bus activity LED's. The Valve Module shall be potted. The Valve Module shall include a stainless steel legend plate with engraved text for easy cleaning and identification of Valve Module connections.

The integrated spreader control and joystick control system shall be equipped with a qualified ESTOP device that immediately disconnects battery power from all outputs. All spreader control and joystick-operated outputs shall immediately cease to function and the system display shall inform the operator that the ESTOP device has been activated. The ESTOP device must remove power from all output devices, while maintaining power to the display and CPU for diagnostic purposes. Resetting of the ESTOP device shall not result in spreader control and joystick-operated outputs returning to an ON state without operator acknowledgement.

The Control Center shall be a FORCE America CommandAll Single series with a 6100 model spreader control.



MANUALS

A complete set of operation,
parts & repair manuals.
Including all wiring diagrams.
Manuals for truck, cab
& chassis and engine &
transmission. Manuals for hydraulics
system and plow unit.

WARRANTY

State Warranty provided

In addition to the warranty specified, bidder shall show prices to purchase extended parts
and labor warranties on the engine and transmission as follows:

	Transmission	Main Engine
Full 3 Year	<hr/>	<hr/>
Full 4 Year	<hr/>	<hr/>
Full 5 Year	<hr/>	<hr/>

ALL WARRANTY WORK SHALL BE DONE BY A COMPANY LOCATED IN BILLINGS, BIDDER
SHALL STATE NAME AND LOCATION OF WARRANTY DEALER:

DELIVERY

F. O. B. 4848 Midland Rd, Billings
MT

State Delivery date

ADDITIONS:

**In the event of errors and omissions of this specification it is the
responsibility of the bidder to supply an operational unit which
conforms to the intent of this invitation for bids.**

END: CONTRACT SPECIFICATIONS



Exhibit B

The undersigned hereby submits the following bid, having carefully examined the specifications entitled CONTRACT SPECIFICATIONS:2 – 2024 37,000 G.V.W. Single Axle Trucks with Dump/Sander/Plow for the City of Billings' Street/Traffic Division, as well as all other conditions affecting the bid, the undersigned agrees to furnish all equipment and services necessary to complete the work required.

Time of delivery

(2) NEW CURRENT MODEL – 2024 37,000 G.V.W. Single Axle Trucks with Dump/Sander/Plow

FOB 4848 MIDLAND RD, BILLINGS, MONTANA \$ _____ ea

FOB 4848 MIDLAND RD, BILLINGS, MONTANA \$ _____ ea

TRADE IN VALUE,

Unit Number 1196, 2011 Ford F750 Dump Truck \$ _____

Unit Number 1197, 2011 Ford F750 Dump Truck \$ _____

The City of Billings reserves the right not to trade unit # 1196 and 1197. Please bid the price of the new unit without a trade and list the actual value of the trade if we were to accept your trade offer.

MAKE & MODEL BID

\$ _____
NET

MAKE & MODEL BID

\$ _____
NET

I/We acknowledge _____ addendum.
#

Company Name

Date

Contact Name (please print)

Title

Signature of Contact Position

By signing the above, I certify that I am authorized by the Company named above to respond to this request.