

**TOWN OF ORONO**  
**NOTICE AND INFORMATION TO BIDDERS**  
**March, 2015**

The Town of Orono will receive sealed bids for the purchase of a **Tandem Axle Wheeler Truck Chassis, Plow and Wing Equipment, and Automated Side Dump Material Spreader Dump Body** in accordance with this Notice and Information to Bidders, Specifications and Bid Form are enclosed for bidding.

The Town of Orono will make an award of the bid on the basis of price, delivery time, and meeting the specifications. The Town reserves the right to reject any or all bids in whole or in part, and is not necessarily bound to accept the lowest bid if that bid is contrary to the best interests of the Town. The Town of Orono also reserves the right to negotiate with any bidder if that bidder is deemed to be most suited to the Town's needs.

Bidders shall submit their proposals on the enclosed Bid Forms. Terms, cash discounts, and delivery dates are to be specified. The price quoted is to be less any applicable Federal and Maine taxes.

All deviations from the specifications must be noted in detail by the bidder, in writing, at the time of submittal of the formal bid. The absence of a written list of specification deviations at the time of submittal of the bid will hold the bidder strictly accountable to the Town of Orono for the specifications as written. Any deviation from the specifications as written, and not previously submitted as required by the above will be grounds for rejection of the bid.

An official bid award by the Orono Town Council is anticipated for April of 2015. Price must be held firm for 60 days after submittal.

**Bids** shall be placed in a sealed envelope marked "**Public Works Truck Bid**" and submitted to the Town of Orono, 59 Main Street, Orono, ME 04473, **on or before 10:00 a.m. on Friday, March 27th, 2015**, at which time they will be opened. Bidders are invited to attend the opening at the Town Office Conference Room; a decision to award the bid will not be made at that time. **Faxed or e-mailed bids will not be accepted.** Should you have any questions, please contact Rob Yerxa, Public Works Director, at (207) 866-5062.

Sophia L. Wilson  
Town Manager  
59 Main Street  
Orono, ME 04473  
(207) 866-2556

**TOWN OF ORONO**  
**BID FORM: TANDEM AXLE WHEELER DUMP TRUCK**

**Please Note:** The Town of Orono has a 2002 International 2654 Wheeler with a Tenco 12 CY side dump, automated spreader dump body, 11' quick switch plow and wing plow for trade in. This vehicle is available for inspection at the Orono Public Works Department by appointment. Orono Public Works can be contacted at 866-5062.

<u>Item</u>	<u>Bid Price</u> Without Trade In	<u>Bid Price</u> with Trade In
Tandem Axle Wheeler Dump Truck:		
Option A: On Lot Vehicle	\$ _____	\$ _____
Option B: To Be Built	\$ _____	\$ _____

Delivery Date for Truck:

Option A: On Lot Vehicle	_____ weeks
Option B: To Be Built	_____ weeks

We are aware that the bid will not be awarded until **April, 2015**. Upon award, we will deliver the truck on the delivery schedule noted above following notification of the award.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name and title

\_\_\_\_\_  
Company name

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone: voice and fax

**SPECIFICATIONS FOR  
TANDEM AXLE WHEELER DUMP TRUCK  
April, 2015**

It is the intention of this specification to describe a tandem axle wheeler dump truck as outlined in the following specifications. Bidders are cautioned to list any and all deviations from these specifications in order for their bid to receive full consideration. Bidders that do not fully list and explain deviations from these specifications shall be considered as "non responsive". Bidders shall furnish complete manufacturers' detailed literature and written specifications with their proposal. The use of manufacturers' names and/or model numbers is strictly for the purpose of indicating the quality of materials required.

Check ( ) if  
complies. If  
not, note in  
"Comment  
Section".

**I. UNIT:**

1. T6x4 heavy-duty 10 wheeler cab and chassis with G.V.W. of not less than 58,000 pounds.

**II. WHEELBASE AND CAB TO AXLE MEASUREMENTS:**

1. Wheelbase minimum 170 inches.
2. WB & CA shall be of sufficient length to accommodate a 12 yd. minimum side dump left front discharge spreader body. Chassis must also accommodate plow rigging.
3. AF dimensions must allow for a minimum of 12" of frame to extend past rear tires to facilitate mounting of the dump body and brake controls with lighting adapters for trailers.
4. The cab to trunnion measurement must be 108 inches.

**III. FRONT AXLES:**

1. 20,000 lb. minimum capacity I-Beam type.
2. Suitable for extreme snowplow and dump truck service.
3. Oil lubricated and sealed wheel bearings with visible oil supply.
4. Front springs should be heavy-duty designed to support the plow and wing in travel position, under full ballast load with no appreciable sag or deflection on either side.
5. Spring mounted hardware and brackets shall be designed for extreme service.
6. Front axle should be the set-back type.

**IV. REAR AXLE:**

1. 46,000 lb. tandem axle with power divider (operated by air control on dash). Meritor RT46-160P, RT-46-164 with full lock drive control or approved equal.
2. Approximately 65 Mph at most economical Rpm in high gear.
3. Aluminum housings not acceptable.
4. Magnetic oil drain plug.
5. Synthetic oil lubricated and sealed wheel bearings.
6. Power divider shall be torque-proportioning type.

Check ( ) if complies. If not note in "Comment Section".

- 7. This assembly shall be capable of off-highway articulation and oscillation characteristics.
- 8. Rear axle ratio shall be 5.38 to one.

**V. ENGINE:**

- 1. Automotive diesel, 4 cycle 350 Hp (minimum) with hand fuel pump primer.
- 2. Cummins ISL, Detroit Diesel 13, or approved equal.
- 3. Preferably a wet sleeve engine.
- 4. Turbocharged.
- 5. 1150-lbs. /ft. minimum torque output.
- 6. Extreme service oil filtration system (no remote mount filter assembly will be accepted.)
- 7. Electric fuel shutoff operated by the ignition switch.
- 8. Magnetic oil drain plug.
- 9. Engine block heater 1,500-watt minimum 110 volt, receptacle with spring operated lid mounted on front of truck.
- 10. Adapter for Spicer coupler 2-2-79 on crankshaft (factory installed).
- 11. Engine exhaust brake.

**VI. TRANSMISSION:**

- 1. Allison RDS3000 6-Speed, 1200 LB-FT, is requested and preferred with rear speed sensor and usable ground speed signal.
- 2. PTO openings.
- 3. Magnetic oil plug.
- 4. Water to oil cooler.
- 5. Auto neutral.
- 6. 3<sup>rd</sup> gear hold.
- 7. Synthetic automatic transmission fluid, meeting TES-295 specifications.
- 8. 5-yr warranty.

**VII. DRIVELINE:**

- 1. Driveline shall be heavy duty and factory balanced.
- 2. Main Driveline shall use Spicer 171OHD w/ half-round yokes.
- 3. I/A Driveline shall use Spicer 1710 w/ half-round yokes.
- 4. Extended life U-joints are preferred and requested.

**VIII. BRAKES:**

- 1. Dual air brake system with ABS (such as Wabco 4-channel system) or equal.
- 2. Front brakes shall be 16 ½ x 6 cam type (prefer "Q" + style) with dust covers.
- 3. Rear brakes shall be 16 ½ x 7 cam type (prefer "Q" + style) with dust covers, 4 (four) 30/30 long-stroke brake chambers on rear axles, with moisture-proof chambers.

Check ( ) if  
complies. If  
not, note in  
"Comment  
Section".

- |   |                          |
|---|--------------------------|
| 4. Aluminum Alloy air storage tanks   | <input type="checkbox"/> |
| 5. All brake drums shall be outboard mounted cast drums.  | <input type="checkbox"/> |
| 6. Haldex Automatic Slack Adjustors or equal.   | <input type="checkbox"/> |
| 7. Bendix AD-9 Air dryer with heater.   | <input type="checkbox"/> |
| 8. Reservoirs must have ample road clearance and have sufficient capacity to support all air accessories and the requirements of a tag-a-long trailer.                                      | <input type="checkbox"/> |
| 9. Pull drains on each reservoir with loose end of the cable attached professionally in a location that is easily accessible to the operator.   | <input type="checkbox"/> |
| 10. Semi-trailer connections and breakaway valve should be mounted on rear most cross member in such a way not to interfere with proper placement of lights, pintle hook or license plates. | <input type="checkbox"/> |
| 11. Hand control valve (trolley valve) shall be mounted on the steering column. The brake control valve for trailer shall be mounted on the dash.   | <input type="checkbox"/> |
| 12. Air tank underneath the passenger side of cab.  | <input type="checkbox"/> |
| 13. Air compressor, 17.0 CFM or better  | <input type="checkbox"/> |

**IX. REAR SPRINGS AND SUSPENSION:**

- |  |                          |
|--|--------------------------|
| 1. 46,000 lb. spring capacity, minimum.  | <input type="checkbox"/> |
| 2. Hendrickson HN462 preferred or equal.   | <input type="checkbox"/> |
| 3. Clearance between dual tires shall be 2" minimum. Clearance between inner dual tires and suspension system or brake chambers shall not be less than 2". This minimum clearance must be retained under all normal operating conditions under capacity loading. Local modifications will not be accepted. Special spacers or wheel components will not be accepted. | <input type="checkbox"/> |
| 4. All hardware shall be designed for extreme services.  | <input type="checkbox"/> |

**X. STEERING:**

- |  |                          |
|--|--------------------------|
| 1. Heavy-duty, dual steer gear design suitable for snowplow and dump truck service and for in-town driving such as TRW TAS65 or equal. | <input type="checkbox"/> |
| 2. Power steering with replaceable filter with large capacity reservoir.   | <input type="checkbox"/> |

**XI. ELECTRICAL:**

- |   |                          |
|---|--------------------------|
| 1. 12 Volt Delcotron 200 amp capacity alternator model number 28-SI or equal.   | <input type="checkbox"/> |
| 2. Heavy duty Delco Starter 12 volt, #37 Positork MT type with over-crank protection and full copper ground or equal.                                       | <input type="checkbox"/> |
| 3. Three 12 Volt batteries, minimum of 2775 CCA maintenance free stud mounting type, must be mounted so not to interfere with plow mounting.                | <input type="checkbox"/> |
| 4. Enclosed battery compartment with proper ventilation to prevent corrosion.   | <input type="checkbox"/> |
| 5. Sealed beam halogen headlights.  | <input type="checkbox"/> |
| 6. All exterior wiring shall be salt resistant in suitable loom or conduit.   | <input type="checkbox"/> |
| 7. Manually operated master battery disconnect switch mounted in the cab and readily accessible to the operator, prefer Cole-hersee model M284-02 or equal. | <input type="checkbox"/> |

Check ( ) if complies. If not, note in "Comment Section".

- 8. Sealed battery cable ends.
- 9. Battery cable corrosion resistor.
- 10. Separate 7-way semi-trailer socket mounted on rear most cross member with trailer interrupter switch mounted on the dash and equipped with circuit breakers.
- 11. Electronic features of manufacturer must be able to integrate with plow and sander requirements.
- 12. 12-volt power supply in dashboard accessible to the operator
- 13. Radio Equipment connections.
- 14. Computer connections.
- 15. Batteries mounted underneath the passenger side of the cab.
- 16. Minimum six (6) extra switches for use with the body controls

**XII. FRAME:**

- 1. One-piece heavy duty reinforced high tensile heat-treated steel 120,000-psi yield minimum. Straight channel frame rail. Special reinforcements shall be provided to prevent diamond shaping under extreme snowplowing conditions, including a cross member located behind cab and designed to transfer plow wing stresses to both longitudinal frame rails.
- 2. Minimum Section Modulus 30.0.
- 3. Bolted construction, designed for extreme service and use.
- 4. Fishplates will not be accepted.
- 5. Frame shall be designed and constructed not to interfere with Spicer crankshaft coupler 2-2-79.
- 6. Heavy duty gusseted cross members shall be provided.
- 7. Local installation of frame reinforcement will not be accepted.
- 8. Extend frame for minimum of 6 inches beyond the front grill of vehicle.
- 9. Frame rails of the chassis should be clean on the outside of the frame with no air dryers or other equipment mounted that will interfere with the installation and need to be relocated.
- 10. All brake and electrical controls should be mounted before rear most cross member.

**XIII. TIRES & WHEELS:**

- 1. Front tires will be 11R x 22.5 16-ply tubeless type such as Goodyear G661 or equal.
- 2. Rear tires will be 11R x 22.5 16-ply tubeless traction type such as Goodyear G338 or equal.
- 3. Spare wheel and tire, front and rear.
- 4. Both front and rear hubs to be cast iron Hub-piloted (ten-hole).
- 5. Heavy-duty steel Accu-ride wheels to be 22.5 x 8.25 Hub-pilot type.

**XIV. FUEL SYSTEM:**

- 1. Aluminum fuel storage tank mounted with stainless steel support bands on left side of truck, fully underneath the cab, 50 gallons minimum.
- 2. Aluminum non-skid step.
- 3. 12" road clearance minimum.
- 4. Tank shall not extend past rear of cab.
- 5. Fuel lines shall be the proper flexible wire braid type, or equal.
- 6. Tank shall be vented in such a manner to prevent fuel spillage if operating on a slope or on level ground with tank full and fuel warm.
- 7. Suitable mud flaps shall be installed to protect the fuel tank from road debris.
- 8. Shut-off valve shall be installed at fuel outlet.

**XV. COOLING SYSTEM:**

- 1. Radiator core and tanks shall be heavy-duty design and construction.
- 2. Ample capacity for continuous high engine output under extreme temperatures and/or operating conditions.
- 3. Heavy duty mounting brackets and hardware.
- 4. Screw on water filter with pre-charge and factory installed shut off-valves.
- 5. Gates Blue-stripe type radiator and water hoses, if available.
- 6. Radiator and mounts shall be designed and installed not to interfere with Spicer crankshaft coupler 2-2-79.
- 7. Space shall be provided under or through radiator to mount crankshaft driven PTO and pump.
- 8. Antifreeze to -40 degrees F.
- 9. Viscous driven Fan Clutch.

**EXHAUST:**

- 1. Vertical exhaust designed and installed not to interfere with any customer installed accessories (i.e. snow plows, hydraulic tanks, wings, etc.)
- 2. Deflector elbow shall be provided.
- 3. Heavy duty mounting brackets, elbows, piping and expansion joints. All stainless steel.
- 4. Shall keep noise to lowest practical level in accordance with Federal and State Regulations.
- 5. Stainless steel muffler.

**XVII. FILTERS:**

- 1. Air filter shall be heavy-duty dry type.
- 2. Option of drawing air from either under hood or from cab so not to clog filter with snow.
- 3. All filters must be located for ease of servicing.

- 4. All oil, fuel and water filters shall be disposable spin-on type.

**XVIII. CAB:**

- 1. Standard cab marker lights.
- 2. Dome light shall have independent switch.
- 3. Heater shall be highest capacity available.
- 4. Air conditioner.
- 5. Automatic low oil pressure/high temperature/low coolant visual and audible warning system wired in such a way as not to be easily accessible to the operator and operational only when ignition is on.
- 6. Electric windshield washer.
- 7. Heavy-duty 2-speed electric windshield wipers, minimum with time delay.
- 8. Dual sun visors.
- 9. 16" x 7" heated West Coast mirrors with heated 8" chrome spot mirrors on each.
- 10. Passenger side motor mirror with dash mounted switch.
- 11. Cab grab handles right and left sides.
- 12. Seat belts.
- 13. Engine tachometer.
- 14. Driver's seat shall be air suspension high backcloth bucket seat with adjustable lumbar support, fore and aft adjustment, seat and back angle adjustment/passenger seat shall be conventional foam rubber bucket seat.
- 15. Instruments shall include, but not be limited to: Oil pressure gauge, water temperature, and fuel gauge, brake warning light, low air pressure light and alarm, voltmeter, amp meter, air pressure gauge, dash mounted engine hour meter. All gauges shall be properly marked and illuminated.
- 16. Full coverage, insulated floor mat.
- 17. Heavy duty closed cab all steel construction.
- 18. Hood and fender shall be one piece design, tilt forward type with factory installed side access panels to provide safe, easy, complete access to the engine compartment for daily service and periodic maintenance with full plow gear (including wing and post) installed.
- 19. Stationary grille is highly preferred to increase engine accessibility when plow hardware is attached.
- 20. Back up alarm meets OSHA standards.
- 21. Fresh air intake for heater/defroster must be protected or designed and installed to prevent entrance of sand/salt.
- 22. AM-FM CD stereo. Additional CB hook-up required with antenna.
- 23. Suitable heavy-duty bumper must be supplied mounted on frame, front only.
- 24. Horn. Air and electric.
- 25. Directional signals, non-canceling type with motorized flasher.
- 26. Cab mounted 5 lb. fire extinguisher and road marker triangles.
- 27. Two-way radio with wave antenna and optional external speaker installed using the Town's radio vendor – Whitten's 2-way service. Contact Whitten's 2-way with questions and specifications.
- 28. Tinted, heated windshield
- 29. Steering column shall be both tilt and telescopic.

Check ( ) if complies. If not, note in "Comment Section".

- 30. Power right window using dash control.
- 31. Exterior fiberglass visor.
- 32. Air tank and battery underneath the passenger side of cab
- 33. Air cab mounts
- 34. Cup holder mounted in the bottom center of the dashboard
- 35. 8" Heated fender mirror

**XIX. PAINT:**

- 1. Green preferred, but will accept an "off the lot" color. Lead free paint is required.
- 2. Chassis semi-gloss black polyurethane.
- 3. Cab interior color to be owner approved option

**XX. MANUALS:**

- 1. One (1) operator manual.
- 2. One (1) maintenance and repair manual.
- 3. One (1) line chart per unit.
- 4. One (1) parts manual.
- 5. One (1) shop manual, service manual for engine, cab and chassis
- 6. All manuals to be in both print and digital format

**XXI. GENERAL:**

- 1. All manuals should be delivered prior to acceptance of the final completed vehicle.
- 2. Chassis shall be completely serviced, tuned up, wheels balanced (front) and steering geometry adjusted prior to delivery.
- 3. Vehicles offered must comply with all applicable Federal and State of Maine Regulatory Standards. Certified GVWR MUST be furnished.
- 4. A computer analysis of the proposed engine, transmission, rear end combination, which is being offered, must be provided.
- 5. Friction materials must be non-asbestos.
- 6. It is the responsibility of the chassis manufacturer to provide or reposition components to provide "clear frame" for installation of accessories or accessory equipment.
- 7. Vehicles must be fully operational and ready for service when delivered to Public Works, or to vendor installing dump body/plow, and meet all Federal and State Regulatory Standards. Chassis will be delivered to the equipment vendor at no additional cost to the Town of Orono.
- 8. Noise level at the operator's hearing zone must not exceed the applicable OSHA maximum amount with hours of exposure as specified in Table G-16 of Part 1910.95 and D2 of 1926.52. This sound level shall be an eight-hour time weighted average in accordance with SAE Standards J1166, J919, J1174, and J1175 or whichever is applicable.

Check ( ) if complies.  
If not, note in  
"Comment Section".

**XXII. WARRANTY:**

1. Power train – full 5 years.
2. All other components – full 3 years except wear parts.
3. Towing for 3 years.

**XXIII. COMMENTS AND DEVIATIONS, LIST BELOW (OR ON BACK):**

**TOWN OF ORONO**  
**BID FORM: DUMP BODY/MATERIAL SPREADER AND PLOW EQUIPMENT**

Item

Total Bid Price

Dump Body/Spreader with all attachments

\$ \_\_\_\_\_

Delivery Date for Dump/Body Spreader

\_\_\_\_\_ Weeks

We are aware that the bid will not be awarded until **April 2015**. Upon award, we will deliver the truck on the delivery schedule noted above following notification of the award.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name and title

\_\_\_\_\_  
Company name

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone: voice and fax

**SPECIFICATIONS FOR  
DUMP BODY/MATERIAL SPREADER  
April, 2015**

It is the intention of this specification to describe a heavy-duty combination dump body/material spreader as outlined in the following specifications. Bidders are cautioned to list any and all deviations from these specifications in order for their bid to receive full consideration. Bidders that do not fully list and explain deviations from these specifications shall be considered as "non responsive". Bidders shall furnish complete manufacturers detained literature and written specifications with their proposal. The use of manufacturers' names and/or model numbers is strictly for the purpose of indicating the quality of materials required.

Check ( ) If  
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**I. COMBINATION HEAVY-DUTY DUMP BODY/SPREADER**

1. The body shall be a traditional dump body as well as a material spreader in one shell. The body shall be 13 feet long and 88" wide, inside length by width. The body shall have eleven and one half (11.5) yard water level sides and 51 inch tailgate height. The entire body shall be fabricated from 180,000 psi steel sheets. The floor of the body shall be 3/16", quenched and tempered 180,000 psi, steel with radius corners. There shall be a 24" cab shield integral with the front of the body. The top side rails of the body shall be a fully enclosed member from minimum 4" by 4" structural tubing. There shall be provision for extension sideboards at the top of the side rails. There shall be a minimum of one (1) 7" wide vertical side post, a front corner post and a 12" wide full depth rear corner post. The sides shall be from unspliced sheets of 3/16" material featuring dirt shedder cat walks. There shall be a ladder provided and located street side of the body at the front. The tailgate shall be a three (3) panel with D-ring design and shall be double acting. There shall be an air trip system for tailgate latch. Heavy-duty spreader chains shall be provided. The understructure of the body shall have minimum 10" at 25.4#/ft. I-beam longmembers. There shall be 3" channel crossmembers at the cylinder attachment points and a series of break formed crossmembers in a honeycomb pattern for floor support. The longmembers shall be interconnected at the top with 3" by 3" structural tubing and at the bottom through a break-formed plate for added strength.
  
2. The floor and curbside of the body shall be designed to lift and move material to the street side conveyor mechanism. The remaining stationary outside longmember shall be a 4" by 3" structural tube member. There shall be a minimum of two (2) 3-1/2" diameter by 28" stroke double acting cylinders to lift the floor. For safety and strength these cylinders shall be manufactured using the HYDRAUNITE method to minimize wear and corrosion. The cylinders fully raised position, tilted, shall be approximately 35 degrees from horizontal. The floor shall be hinged through a 1-3/4" chrome, induction hardened, steel pin. The entire floor assembly shall be designed so as to be easily removable. All moving parts shall be equipped with grease zerks.

Specifications for Dump Body/Spreader, 2015

Check ( ) if compltes. If not, note in "Comment Section".

- 3. There shall be an OSHA approved safety body prop provided for use when service on the body is required.
- 4. The body hoist shall be a single cylinder telescopic design. The cylinder shall be designed using the HYDRAUNITE process and shall carry a full two (2) year warranty. The cylinder shall have a minimum capacity rating of thirty-five (35) tons. The cylinder shall be saddle mounted to the chassis frame. The material conveyor of the body shall be street side of the body running from rear to front, and shall be 18" in width. The chain shall be a pintle type and shall have 3/8" by 1-1/4" barflights. Chain adjustment shall be through two (2) grease cylinders, BOLT TYPE CHAIN ADJUSTERS NOT ACCEPTABLE. There shall be a 3/16", quenched and tempered 180,000 psi, steel wear plate. The wear plate shall be designed for ease of replacement. The drive mechanism for the conveyor shall be bronze gears and shall be a 25:1 ratio. The gearbox shall be driven through a hydraulic motor. There shall be a built-in 3/16", quenched and tempered 180,000 psi, steel hinged plate to cover the conveyor assembly when required. There shall be a frame mounted spinner assembly located in front of the street side tires. The spinner motor shall be top mounted and adjustable through a vertical and horizontal range of settings. The spinner disc shall be a one-piece polyurethane unit. The spinner assembly shall be easily removable and provided with quick disconnect fittings. The material feed chute to the spinner disc shall be from UHMW polymer material. The unit shall be further equipped with a "summer chute" for bringing material street side for summer use.

Note: All items as listed under "BODY MISCELLANEOUS" shall be furnished with the combination heavy-duty dump body material spreader.

II. BODY, MISCELLANEOUS

- 1. Double acting hoist cylinder
- 2. Summer chute
- 3. Coal door in tailgate on driver's side. Door shall have two lifting arms to lift the door plate evenly and limit jamming.
- 4. Electrically operated load cover, Donovan 7000ELD or approved equal with auto hoop, extra heavy duty asphalt tarp, and tarp wind deflector
- 5. Central lubrication system for side dump hinge and chain bearings
- 6. A spreader chain maintenance system consisting of, a slotted gearbox support to allow removal of the gearbox and drive sprocket/shaft assembly as a unit, and a bolt on cover in the rear apron to allow removal of rear chain drive mechanism through the rear apron of the body shall be provided.
- 7. Fold down ladder left side.
- 8. Toolbox mounted in approved location. Minimum 1.5 cubic feet capacity.

III. HYDRAULIC SYSTEM

- 1. The hydraulic system will be used to operate the plow, wing, and sander body.

- 2. Load sense pump 40 gpm with low oil sensor and auto shutdown with override switch in cab.
- 3. Hydraulic tank: 40 gallon, mounted on the truck frame, behind the rear wing post. The tank will be equipped with a sight gauge, integrated hydraulic filter, and shut-off valve. A return manifold will be utilized in lieu of a series of pipefittings connected directly to the tank.
- 4. All main hydraulic lines are to be stainless steel.
- 5. Control valve: 6 section hydraulic valve, Cassapa with power beyond or approved equal. A 1000 psi pressure relief valve will be provided for the side dump, body down circuit. Low friction cable controls. Connector kits will be utilized on the valve end to enclose the valve spool. Control pattern and lever location will be provided by the Town at time of construction. Front remote.
- 6. Hoses: All hoses will have male pipe thread fittings on both ends. The attachment points will have a female swivel fitting. Hoses protected by loom or conduit at all wear points.

**IV. FRONT HITCH**

- 1. Power titling accomplished by the plow lift cylinder.
- 2. Must be fully detachable.
- 3. 31" plow pin centers with three pin heights.
- 4. The plow lift cylinder shall be a least 3-1/2" x 12" acting with O-ring seals.
- 5. Triple point chain lift hook.
- 6. Four 1-1/4" diameter pins attaching hitch to the truck.
- 7. Must have a 48" front hydraulic wing post.

**V. REAR ATTACHMENT**

- 1. Rear post to be patrol style.
- 2. Pusharms to be a minimum of 2-3/4" in diameter.

**VI. SIDE WING**

- 1. The wing shall be designed for the right side of the truck and shall be heavy duty. It shall have an overall length of 11 feet and shall have a 120" x 8" x 1" cutting edge and 2 - 1/2" cutting edges. The nose height shall be 35" and the discharge height shall be 42". The cutting edge backer shall be 4" x 6" x 5/8" with gussets and shall be punched to accept 8" and 3"-3"-12" center punch cutting edges. Welded to this backer shall be a minimum of five 3'8" ribs. The leader shall be a minimum of 1"

Specifications for Dump Body/Spreader, 2015

Check ( ) if complies. If not, note in "Comment Section".

plate steel and shall have two holes to accept a 1-1/4" wing bolt. The top of the ribs shall be wended to a 3"x3"x3/8" angle running the full length of the top of the wing. The wing skin shall be 10-gauge steel. There shall be several places longitudinally at the back of the wing to allow the push arms to be attached at the proper angle. The entire wing shall be sand blasted before the primer and the back of the wing shall be painted black and the front orange. There shall be a 30-degree trip mechanism.

- 2. There shall be an air operated wing travel positioner.

VII. POWER REVERSING TRIP PLOW

- 1. Cutting width shall be 11' at 0 degrees and 9' at 30 degrees.
2. Overall width shall be not greater than 11"
3. Cutting edge shall be three-piece trip edge.
4. There shall be two moldboards and two curb shoes.
5. Moldboard shall be smooth rolled design. The roll radius of the moldboard shall be 10". Moldboard shall be 10 ga. steel. There shall be two ears of 1" steel to attach the plow to the truck. These ears shall be 31" on center.
6. The reversing shall be achieved with two industrial type cylinders with a 1-1/2" shaft, 3" tube, and 20" stroke. These cylinders shall have a built in cushion valve. The cylinders shall have nitrated piston rods with a 2-year warranty.
7. Cutting edge shall be carbide and cover plate

Note: Plow shall be a standard design, no dealer modifications.

VIII. LIQUID CALCIUM SPRAYER

- 1. Liquid Pump/Flowmeter

The electric motor/pump combination shall be a 12-volt D.C. three-chamber diaphragm pump with internal circuit breaker. The pump seal shall consist of a viton/santoprene combination. The pump will be rated at 2.8 gpm. The output shall be driven and controlled by the microprocessor based control system. The liquid pump shall be installed in a polyurethane enclosure. A 1/2" flow meter will be plumbed in line with the liquid pump enclosure to provide accurate flow rate input to the control system. The flowmeter will also provide the information required for actual gallons applied. All spray system components shall be rated at 150-psi working pressure.

- 2. Hydraulic Flowmeter

A hydraulic flowmeter shall be used to monitor the flow of hydraulic oil to the spinner motor thus maintaining the proper ground speed (vehicle) to spinner speed ratio. This must be done to maintain the precise placement of snow and ice control material to the road surface with little or no bounce. The flowmeter shall be constructed of a 304 stainless steel body, 304 stainless steel gears and tungsten

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Check ( ) if compltes. If not, note in "Comment Section".

carbide shafts. The sensor components along with 18-gauge cable shall be potted in a delrin housing to keep them weatherproof. The cable shall be terminated with a Weather Pak connector.

3. Reservoirs

There shall be one (1) 150-gallon molded polyethylene reservoir complete with replaceable screen line strainer, shut-off valves and mounting hardware. The tank shall be cab protector mounted.

4. Nozzles

There shall be two (2) flexible neoprene nozzles that vary in orifice size based on liquid flow to minimize foreign material plugging the nozzles and also extend the system flow range.

IX. Control System

The microprocessor-based control shall be the Dickey-John Control Point System, or approved equal running the most recent updated software available. Spreader rates shall be automated and self adjust to the speed of the vehicle. Wiring for the control system must be protected from wearing and corrosion. In-cab mounting is preferred. Provide any support software for material monitoring required.

Control Console:

The console shall have a large backlit Dot Matrix Liquid Crystal Display or approved equal, and a change display button to change from primary to secondary information screens. The primary screen shall show the target rates to be applied in both granular and liquid materials. When the spreading operation begins, this same screen will show actual rates being applied (pounds of material per mile and gallons of liquid per mile.)

X. PINTLE HITCH

30-Ton swivel type pintle hook & mounting plate; centerline mounted – approx. 29” above the ground level with D-rings.

XI. LIGHTS

1. All emergency lighting and plow lights must also be operable from a main control panel and be protected by a suitable circuit breaker.

2. Emergency lighting shall include:

a. Stop, tail, turn, and back-up LED lights to be mounted in the rear corner posts.

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Check ( ) if  
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Section".

- b. Four corner quad flash strobes.
- c. Halogen plow lights connected without going through hood.
- d. Wing lights to be mounted on the rear wing post
- 3. All wiring shall be color-coded.
- 4. All wiring shall be in an easily replaceable harness.
- 5. All wiring must terminate in a weatherproof junction box with each terminal clearly marked to indicate its function.
- 6. Heat seal terminals must be used on all exterior wire.
- 7. All wiring must pass through circuit breakers
- 8. Whelen remote power supply CS450 or approved equal

**XII. GENERAL**

- 1. Minimum two-coat, rustproof, LEAD-FREE primer throughout.
- 2. Finish coat lead-free paint to match color of truck.
- 3. Parts and repair manuals for each component will be provided in print and digital format.
- 4. All wiring must be protected by wire loom or conduit.
- 5. Heat seal terminals must be used on all wiring.
- 6. Provide fully operational back up and rear view camera system:
  - a. 7" LCD, 3 channel color monitor. Provision TV-505A or approved equal
  - b. Mount monitor in approved location on dashboard area
  - c. Provide two camera views – on rear facing for backing and a second focused on the material shoot and spinner
  - d. Provide all wiring, software required to operate the system
  - e. Cameras must be shuttered when not operating to protect the lens
  - f. Provide air cleaning system to remotely clear the lens during use

**XIII. SPARE PARTS**

- 1. ½ Poly Flow Meter
- 2. Application Rate Sensor
- 3. PWM Driver
- 4. Linear Driver
- 5. 14ft. Conveyor Chain
- 6. Drive gear box with shaft, sprocket, and bearing

**XIV. WARRANTY**

- 1. All components shall have a full 5-year warranty unless otherwise specified.
- 2. Specific manufacturer warranties will be executed and provided at delivery.

**XV. INSTALLATION**

- 1. All components listed above shall be installed on the dump truck. Installation shall be consistent with all federal and state regulations, directives and guidelines.

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2. All systems shall be checked after installation and a checklist will be provided at the time of delivery.
  
3. The truck, with all above items installed, shall be delivered to:  
Orono Public Works  
98 Penobscot Street  
Orono, Maine

**XVI. COMMENTS AND DEVIATIONS, LIST BELOW:**