

cityofnovi.org

CITY of NOVI CITY COUNCIL

Agenda Item 4
April 9, 2012

SUBJECT: Approval to purchase an International 7400 SBA 4X2 Single Axle V-Box Truck from Tri-County International Trucks, Inc., the low bidder, in the amount of \$171,815.

SUBMITTING DEPARTMENT: Department of Public Services – Field Operations Division *RJM* *MW*

CITY MANAGER APPROVAL: *[Signature]*

EXPENDITURE REQUIRED	\$171,815
AMOUNT BUDGETED	\$180,000
APPROPRIATION REQUIRED	\$0
LINE ITEM NUMBER	101-442.20-984.000 (Heavy Equipment)

BACKGROUND INFORMATION:

The Novi City Council approved proceeding with the purchase of one single axle dump truck with front plow, underbody scraper and wing blade on January 9, 2012 (\$180,000 budgeted for the 7400 SBA 4X2 Single Axle V-Box Truck). Though initially deferred in the 2011-2012 budget, it was subsequently approved as discussed above.

This new equipment will replace a truck (#670) that is 22 years old and has no advanced technology to assist with winter maintenance operations. The specifications for this equipment enhance service to the community by allowing operators to pre-wet salt, which reduces activation time and the amount of salt that scatters off the road (estimated to be as much as 40% without pre-wetting). In addition, this truck is equipped with an anti-icing spray boom for pre-storm application of liquids, a stainless steel V-box to resist corrosion, a 7 foot wing plow, and a computer system that automatically adjusts salt and liquid application rates based on ground speed and pavement and air temperatures. The new on-board computer system also integrates seamlessly with the recently procured PreCise AVL system so that all truck operating activities can be reported/downloaded to a manager remotely.

Following a public bid solicitation period, on March 14, 2012 five bids were received. Upon a thorough evaluation, the Department determined that Tri-County International Trucks, Inc. met all specifications by providing a responsive bid on the International 7400 Set Back Axle (SBA) 4X2 Single Axle V-Box Truck with components from Truck & Trailer, Inc., its supplier.

The procurement of this dump truck results in a savings of \$8,185 (\$180,000 budgeted less the \$171,815 expenditure). Delivery will take place within three to five months (building a truck chassis requires approximately two months, and equipping a truck with all specialized equipment can take up to another three months).

RECOMMENDED ACTION: Approval to purchase an International 7400 SBA 4X2 Single Axle V-Box Truck from Tri-County International Trucks, Inc., the low bidder, in the amount of \$171,815.

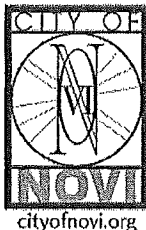
	1	2	Y	N
Mayor Gatt				
Mayor Pro Tem Staudt				
Council Member Casey				
Council Member Fischer				

	1	2	Y	N
Council Member Margolis				
Council Member Mutch				
Council Member Wrobel				

SINGLE AXLE V BOX TRUCK, INTERNATIONAL 7400 4X2 S.B.A. OR EQUIVALENT

	Tri-County International	Wolverine Freightliner	Tri-County International	Wolverine Freightliner	Eastern Michigan Kenworth	Tri-County International
Year Make Model	2013 International 7400 SBA 4X2	2013 Freightliner 108SD	2013 International 7400 SBA 4X2	2013 Freightliner 108SD	2013 Kenworth T470	2013 International 7400 SBA 4X2
Lump Sum	\$ 171,815.00	\$ 173,202.00	\$ 175,719.00	\$ 177,106.00	\$ 191,850.00	No Bid
Equipment/Body Build Supplier	Truck & Trailer Specialties	Truck & Trailer Specialties	Shults Equipment	Shults Equipment	Truck & Trailer Specialties	Cannon Equipment
Estimated Chassis Delivery	45-60	90	45-60	90	90-120	NA
Estimated Body Build	60-90	60	180-240 ARO	60	60-90	NA
Estimated Customer Delivery	105-150	150		150	210	NA
Extend to MITN	body build equipment only	yes	no	yes	body build equipment only	NA





CITY OF NOVI
BID FORM

1 of 3

SINGLE AXLE V BOX TRUCK
INTERNATIONAL 7400 4X2 S.B.A.
OR EQUIVALENT

We the undersigned as bidder propose to furnish to the City of Novi, according to the specifications, conditions and instructions attached hereto and made a part thereof:

A. Single Axle V Box Truck, per specifications

Lump Sum \$ 171,815.00 Ea.

Year/Make/Model 2013 INTERNATIONAL 7400 SBA 4x2

Estimated Chassis Delivery Time ARO SEE BID LETTER Days

Estimated Body Build " " " Days

Estimated Customer Delivery " " " Total Days

Comments:

We acknowledge receipt of the following Addendums: _____
(please indicate numbers)

This bid submitted by:

Company (Legal Registration) TRI-COUNTY INTERNATIONAL TRUCKS, INC.

Address 5701 WYOMING AVE.

City DEARBORN State MI zip 48216

Telephone (313) 584-7070 Fax (313) 584-5681

Agent's name (please print) MARK J. CARACCIOLO

Agent's Title MUNICIPAL AND SEVERE SERVICE APPLICATION SPECIALIST

Agent's signature Mark J. Caracciolo

E-mail mcaracciolo@tritrust.com

Date 03/08/2012

Company Name TRI-COUNTY JUSTI-



**CITY OF NOVI
SPECIFICATIONS**

**SINGLE AXLE V BOX TRUCK
INTERNATIONAL 7400 4X2 S.B.A., OR EQUIVALENT**

1. COMPONENTRY

- a. The bidder shall supply with this bid a certified letter stating that ALL parts and all componentry, either manufactured or purchased by the bidder which are a part of the equipment bid upon, are new, and further, that no used and/or reconditioned parts or componentry are incorporated in this equipment.
- b. Appurtenances and/or accessories not herein mentioned, but are necessary to furnish a complete unit, ready to use upon delivery, shall be included and confirm to the best practice known in design, quality of material, and be subject to these minimum specifications in full. These specifications shall be construed as minimum. Should the manufacturer's current published data or specifications exceed these, they shall be considered minimum and be furnished.
- c. **Exceptions Disclosure: Any exceptions, clarifications, deviations or substitutions shall be indicated on the Bid Form and referenced by page and paragraph number and adequately described in this section (Specifications). If no such descriptions are provided the City of Novi will hold the bidder responsible for materials, systems and brand name items as described in the specifications. Where no substitution is described in the specifications, no deviations will be allowed. Specifications section AND Bid Form must be submitted in order to be considered a complete bid.**

YES, MEETS ALL SPECIFICATIONS (CHASSIS ONLY)
 NO, DESCRIBE DEVIATIONS:

2. GROSS WEIGHT

- a. Minimum GVWR 44,000 lbs.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

AIR BRAKE SYSTEM FOR S/A TRUCK LIMITED TO
41,000 LBS / 23,000 LB. REAR AXLE MAX. RATINGS

3. CHASSIS - INTERNATIONAL 7400 4x2 S.B.A.

- a. Shall be the latest production model, conventional cab, 7400 SBA 4x2 series, with a cab to axle dimension of 114 inches.
- b. The frame shall be pressed steel channel with a yield strength of 120,000 P.S.I.

and a full C-channel reinforcement for a combined section modulus of 31.72 and a resisting bending moment of 3,806,400 inch pounds minimum. Front frame extension integral. No bolt on or weld on type.

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- c. Two (2) front hooks or eyes shall be provided, one (1) mounted on each frame rail adjacent to front bumper.
- d. Front bumper shall be heavy-duty structural steel channel, 12" in depth, C-type, 25 lb./ft., flared back, approximately 1" from each end to within 1" of front fender so as to protect fenders, two (2) 3/8" I.D. pipes 6" long welded vertically to each end of front bumper.
- e. All bolted construction, including attachments, must use grade-8 bolts and/or huck bolts.
- f. Ample frame must be provided for mounting necessary equipment (i.e. dump body, hoist, front pump etc.). Frame cut after mounting of equipment shall be held to truck manufacturer's recommended standards.
- g. 1310 front flange engine PTO adapter plate shall be supplied.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

NOTE: "BB" - BUMPER SUPPLIED BY BOBI BULLDED.

4. CAB

- a. Manufacturer's conventional cab of sufficient bumper to back of cab dimension so that the power plant (engine) is located ahead of the cowl and requires no special "in cab" housing.
- b. Driver seat - air suspension cloth hi-back - lumbar support integral headrest. Passenger seat - non-suspension high back cloth - fixed back w/ under seat storage
- c. Door-mounted dispatch compartment.
- d. Left hand arm rest, sun visors, grab handles and running boards, exterior mounted sun visor with L.E.D. marker lights.
- e. Steering column shall be tilting.
- f. Air horn. Single, frame mounted.
- g. OEM AM/FM radio with standard speakers and auxiliary input.
- h. Accommodation package for 2-way radio.
- i. Cab sound insulation package.
- j. Cigarette lighter for diagnostic equipment power.
- k. Left and right hand rectangular heated and remote power mirrors, 6" x 16", "Westcoast" Break-a-way - type, with auxiliary convex mirror bright finish heads, and brackets w/ L.E.D. clearance lights.
- l. Illuminated direct-reading gauges, including: Air Pressure Gauges, Tachometer, Speedometer, Odometer, Fuel Gauge, Water Temperature Gauge, Oil Pressure Gauge Direct Reading, Voltmeter, Hour meter, High-Temperature Water Warning Light, and Air Cleaner Restriction Gauge Mounted inside Cab.
- m. Engine Alarms: Air, audible, Oil and water, audible and visual.
- n. Standard Tilt hood (without hood hatches) and fixed grille.
- o. Electric intermittent windshield wipers with heated washers.
- p. Tinted glass throughout, with power windows left & right w/ driver control.

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- q. Electronic throttle control, variable.
- r. Hydraulic controls must be moved closer to operator as requested.
- s. Instrument Panel, Ergonomic style.
- t. Painted IHC Code #2303RED (Cab).
- u. Front fender flares (black).
- v. Muffler stack shall not to exceed cab height by more than 4 inches.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

NOTE: "BB" DENOTES BODY BUILDER ITEM

5. ENGINE

- a. International MaxxFace 10, Diesel, 310 HP, 1050 lb-ft Torque @ 1,200 RPM, 2200 RPM Governed Speed, #2 Bell Housing or larger.
- b. Fuel/water separator spin-on type, heated type.
- c. Air cleaner, dual element heavy-duty type with restriction gauge in dash and under hood intake with inside-outside valve or integral snow separation module.
- d. Automatic hi-temp low oil pressure engine shutdown. Block heater; plug at driver's side, with provision for an oil pan heater.
- e. Provide manufacturers temporary fuel tank.
- f. Horizontal muffler and vertical tailpipe must be mechanically fastened to frame rails behind cab for maximum stability, with safety shield. Furnish stainless steel exhaust pipes and clamps. Furnish 45 degree elbow pipe above muffler exhaust.
- g. Radiator shall have necessary frontal area to provide adequate cooling when used in conjunction with transmission and hydraulic coolers and shall have no cut-outs or holes for PTO shaft, On/Off cooling fan drive
- h. Silicone hose package, radiator and heater hoses.
- i. Aluminum 1588 sq in Radiator with 885 sq in charge air cooler.
- j. Engine control remote mounted (provision for body builder installation of PTO controls) and ground speed pickup wire.
- k. Engine must be a wet sleeve type w/ extended life coolant to -40° below zero.
- l. Extended engine & engine electronics including injectors. Service contract for 84 months, 100,000 miles.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

6. FLUID LEVELS

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- a. All hydraulic oil tanks, if provided, shall be full upon delivery.
- b. All engine fluids including reservoirs, if provided, shall be at manufacturer's suggested levels at delivery.
- c. All fluid reservoirs shall be properly labeled in a visible location.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

NOTE: "B" DENOTES BUILT-IN ITEM

7. TRANSMISSION

- a. Allison Electronic 3500 RDS P; 6-speed automatic, with T-bar shifter.
- b. Magnetic drain plug.
- c. Temperature gauge, direct reading.
- d. External Transmission Cooler, water to oil type.
- e. Castrol *Trans Syn'd* oil, and 5 year warranty (2 yrs. Std. Plus 3 yrs. extended).
- f. Trans oil level sensor.
- g. Locate transmission Electronic Control Module inside cab interior
- h. External transmission cooler, to follow Allison recommended specifications.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

8. ELECTRICAL

- a. 12 volt light system throughout.
- b. Daytime running lights and fender mounted turn signals dual faced amber.
- c. Halogen headlights.
- d. Electric junction box in cab.
- e. Batteries – three 12-volt, maintenance free, 2100 CCA at 0 degrees F – combined with jump start – stud. Truck manufacturer's battery box shall be re-positioned per Fleet Managers instructions at the time of construction. Battery box must be vented by drilling (2) two (1/2") half inch diameter holes in front and rear side panels.
- f. Leece-Neville 135 amp Alternator w/ higher current output @ idle.
- g. Starter shall be heavy-duty type with thermal over crank protection.
- h. Lighting shall conform to federal Motor Vehicle Safety Standards #108.
- i. Electrical system shall be protected by circuit breakers, manual-reset SAE Type II.
- j. Shall be equipped with a Cole-Hersee Socket #12063, wired to the light and equipment color code using a single loom, seven- (7) conductor 12 gauge wire.
Also furnish and install electronic brake controller.
- k. Install weather tight connectors on back-up alarm.
- l. Wiring for all rear lights shall be incorporated with the Betts lighting system w/ 8 foot of rear stop tail light wire furnished by chassis manufacturer.
- m. Grommets must be used where wire passes through steel gussets and cross members.
- n. All Betts lighting wiring must conform to truck color code.
- o. 6-Pak Switch Rocker type Lighted – IHC supplied.
- p. The Betts lighting system shall be connected starting from inside the truck cab at

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terminal strip, to a sealed plastic junction box, and mounted at the left rear of the V-body. All connections will be sealed in the junction box with no other connection in the harness, other than at the light fixtures.

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- q. Furnish electrical adapter to step down 7 conductor socket to 6 conductor sockets.
- r. Crossover wiring harness shall be installed on 2nd. Underbody cross member forward of rear most cross member.
- s. Auxiliary Harness front Head Lights and turn signals for front plow application.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

NOTE: "BB" DENOTES BODY BUILDER ITEM.

9. FRONT AXLE, SPRING, AND STEERING

- a. Axle capacity not less than 18,000 lbs. set back
- b. Spring capacity not less than 9,000 lb., each at ground – multi-leaf.
- c. Power assist steering – dual.
- d. Double-acting shock absorbers.
- e. Oil lubricated wheel seals with sight gauge.
- f. Three stage taper leaf front suspension.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

10. REAR AXLE AND SUSPENSION

- a. Single speed axle Meritor RS-26-185, Gear ratio: 5:63
- b. Axle capacity not less than 26,000 lbs.
- c. Rear axle ratio to provide road speed of 65 mph at GVWR while providing compatibility with manufacturer's recommendations for engine, transmission and other drive-train components. Minimum gear ratio 5:63
- d. Suspension capacity not less than 31,000 lbs. A 4,500 lb helper spring on each side shall also be included.
- e. Magnetic drain plug.
- f. Driveline – To be equipped with Spicer Lifeline Series Driveline to match torque requirements.
- g. Driver controlled rear locking differential.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

11. BRAKES

- a. Full air brakes, S-Cam, Auto slack adjusters and anti-lock A.B.S.
- b. Front brake shoes shall be 16-1/2" x 6" OR Disc Brakes
- c. Rear brake shoes shall be 16-1/2" x 7".
- d. Bendix BW750 Series 13.2 CFM.
- e. Heated DV2 Automatic Drain Valve.
- f. Air drier BWAD-IP or equal model.
- g. MGM Parking brake.
- h. Backing plate shields for brakes, front and rear.
- i. Brake Chambers installed in front of rear bulk head.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

12. WHEELS AND TIRES

- a. Front – 385 65R22.5, Michelin "XZY-3" 18 ply front (Qty. 3)
- b. Rear – 12R22.5, Michelin "XZY-3" 16 ply rear (Qty 5)
- c. Hub piloted disc wheels, 10 stud – 22.5 x 8.25. (Qty 5) rear & front 12.25/DC (Qty 3)

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

13. MISCELLANEOUS EQUIPMENT

- a. Rear tow hooks mounted to frame, (1) pair.
- b. Electronic 12-volt back-up alarm installed on drivers' side below left rear taillight/turn signal assembly below steel guard.
- c. O.E.M. Air Conditioning System with fresh air filter.
- d. Furnish and install 1/2" thick rubber mud flaps with anti-sail feature behind rear tires secured to fender understructure.
- ~~e. Furnish and install P30 pintle hook on reinforcement structural steel channel rear of truck frame, per Fleet Manager's direction.~~
- f. 4 wheel trailer connection for straight Truck which includes hand control valve, service and emergency electrical lines plumbed to rear of truck frame ending at a junction block with quick coupler gland hands installed on rear of Truck chassis.
- g. Furnish and install Preco 1040 back-up alarm.
- ~~h. Install license plate frame and light.~~
- i. Furnish safety items, flares, triangle reflector kit and 5 lb fire extinguisher.
- j. Two service manuals covering truck and chassis, added auxiliary equipment, and all other components included in these specifications that may require testing, adjustment, part replacement, and periodic preventive maintenance.

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All of the aforementioned detail shall also be provided on a CD that is compatible with Windows 7. Additional circuit diagrams & electrical system trouble shooting manuals shall be delivered as paper only.

- k. Two parts manuals covering this equipment, all added auxiliary equipment and all other components included in these specifications that may require part replacement, and periodic preventive maintenance, CD-Rom and paper type. Also Master Diagnostic's software – ZTS4463-4 and IC3 Com interface cable ZTSE 4632.
- l. One set of all "Special Tools" for this equipment, all added auxiliary equipment and all other components included in these specifications that require periodic preventive maintenance.
- m. Vendor must specify warranty coverage and location (s) of repairs of this equipment, all added auxiliary equipment and all other components that are included in these specifications that may be different than that of the general warranty coverage and/or extended coverage.
- n. All equipment as specified, manuals, and special tools must be delivered to the Department of Public Services - Fleet Maintenance Division, 26300 Dewal, Novi, Michigan. No payment shall be made until terms of this sales agreement have been met and are verified by the City of Novi.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

PAPER MANUALS NO LONGER AVAIL - CD OR ONLINE ONLY

14. SPECIFICATIONS FOR V BODY

- a. Install 10 ft Chassis mounted stainless steel V box with a liquid capacity of not less than 360 gals.
- b. Furnish and install 2 inch female cam lever coupling for filling liquid tanks.
- c. 84" outside hopper width.
- d. Dual 7" augers.
- e. 10 a. 201 stainless steel hopper sides and ends.
- f. 7 ga. 201 stainless longills
- g. Vertical side braces; stainless steel
- h. Side braces spaced to accommodate four 180 gallon liquid tanks.
- i. Rear discharge with dual 7" step flighted hard surfaced augers.
- j. Rear mounted auger motors with planetary gearboxes and integral speed sensor.
- k. Inverted "V" over augers, stainless steel, installed.
- l. Top screens with center H beam installed, stainless steel.
- m. Hydraulic shut-off screen latch kit.
- n. Chassis mounting kit.
- o. Stainless steel rear ladder.
- p. Cab shield installed on the front of the V body.
- q. Front bearing grease extensions to rear.
- r. Single lane stainless steel wet boom with Raven flow meter and Banjo boom valve.
- s. 11 gpm closed loop prewet system.

SEE BODYBUILT SUBMITTALS

- t. Flip up spinner and anti-ice bar assembly for ease of unloading.
- u. Install Spray Mate Poly Fender kit including all necessary mounting brackets.
- v. The anti-ice liquid pump shall have the capacity to pump 40 gallons per minute.

___ YES, MEETS ALL SPECIFICATIONS

___ NO, DESCRIBE DEVIATIONS:

15. UNDER-TRUCK SCRAPER SPECIFICATIONS

- a. Hangerboard - minimum $\frac{1}{2}$ " formed plate with $\frac{1}{2}$ " steel reinforcements the entire length of hinge line, with a hardened, replaceable center pin bushing.
- b. Hinge Shaft - 2-1/2" O.D. x 96 linear inches minimum high carbon steel running the total length of the hangerboard (660 square inches of bearing surface area) with zerk fittings located along the hinge line for lubrication. The hinge system shall consist of two (2) 6" end hinges with greasable thrust bearing at each end of hinge shaft and one (1) 15" center hinge with six attaching bolts, all 3-1/4" O.D. x 2-9/16" I.D. The hangerboard cut-out for the center hinge bracket shall have beveled corner cuts and have a 3/8" x 1" reinforcing bar welded over the entire length of the bracket.
- c. Moldboard - 1" thick x 20" wide x 12' long, heat treated carbon steel reinforced in the center with 2-1/2" x 2-1/2" x 1/2" angle 52" long. The bottom shall be offset to accommodate beveled cutting edges.
- d. Actuation and shock assembly - moldboard to be actuated by two Root designed 3-1/2" I.D. x 10" stroke double acting cylinders with 2" nitrated piston rods and 3/8" ports & plumbing. Cylinders to be mounted horizontally on the scraper by 1" thick reinforced steel trunnion brackets. The cylinder shall be retained in the housing by means of a retaining ring consisting of 1/2" w x 1-1/2" long tubing secured to the shock housing with three 5/8" bolts. Trunnion bearings to be 2-3/4" O.D., 3/8" wall carbon steel bored to accept 2" trunnion pin.
- e. Circle - 1" thick solid steel, notchless, 1 pc. design. The center pivot hole shall have a 5" I.D. replaceable bushing for center pin. The center pin is to have a 6" min. O.D. top, 5" O.D. shoulder, 1-1/4" O.D. stub shaft, grease zerk and bolt through hangerboard with three (3) 3/4" Gr. 8 attaching bolts. Circle clamps shall be 20.5" with 1" top plate. The lower plate shall be welded to hangerboard. The top plate and a polyethylene shim shall bolt to the lower plate with 3-1" Gr. 8 bolts with locknuts.
- f. Power Reverse to be cab controlled with cushion valve relief, and shall be accomplished using two 4" bore by 14-1/2" stroke double acting cylinders with 1/2" ports working in tandem and providing positive hydraulic locking. The piston rods shall be nitrated CR steel 2" in diameter. The piston rod ends and the barrel ends of the cylinders shall be welded 2" thick greasable wear blocks. The hangerboard bosses shall be 3" O.D. tubing, solid welded top and bottom of the hangerboard. Both the anchor and live end pins shall be 2" in diameter and held in place by a 5/8" gr. 8 bolt with nut & washer.
- g. Installation to include modification or relocation of exhaust parts, battery boxes, air tanks & dryers, etc. to achieve maximum height and allow for proper

SEE BODYPULDED SUBMITTAL

- operation.
- h. Hydraulic power is to be provided by a central hydraulic system (specified elsewhere) with proper pressure and flow requirements for proper and satisfactory operation.
 - i. Under body scraper must be installed by an authorized dealer or distributor for the City of Novi, and to include modification or relocation of exhaust parts, battery boxes, air tanks and dryers, etc. to make for proper height of 20-1/2" to bottom of circle (the only exceptions to this are if drive line, transmission, transfer case, etc. are too low). Hydraulic power to scraper is to be 1,500 psi maximum pressure for up and reverse functions and 500 psi for down pressure and approximately 10 GPM flow to provide for satisfactory and safe operation.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

16. CENTRAL HYDRAULIC SYSTEM OR EQUIVALENT

- a. Force FASD45L piston pump – 6.0CID.
- b. Front pump mounting bracket.
- c. Pump flange.
- d. Low oil shut down block with override controls.
- e. Rom1221 low oil sender in tank.
- f. Spicer drive line.
- g. Valve s a Force Add-a-Fold with the following:
 - 4 way air controlled section for scraper with LS relief for down pressure.
 - 4 way electric/hydraulic controlled section for scraper swing.
 - 4 way electric/hydraulic controlled section for front plow.
 - 4 way electric/hydraulic controlled section for plow swing.
 - 3 way EPC section for main conveyor.
 - 3 way EPC section for prewet and anti-ice system.
 - 4 way EPC section for spinner.
 - Power Beyond end cover.
- h. Force America Command All controller armrest compatible.
- i. Stainless steel valve enclosure.
- j. All necessary hoses and fittings will be Parker type
- k. Stainless steel piping will be used to extend the spreader, spinner, pre wet, and return oil circuits to the rear of the chassis.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

17. CONTROL CENTER:

The control center shall be a Force America CommandAll MJ series with 5100 spreader control or equivalent.

- a. Controls for all valve functions, electronic spreader control, and auxiliary lighting 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.
- b. The controller shall have a single joystick handle with integrated miniature joysticks. The hoist control shall be fully proportional and operated with a mechanical lift-to-operate interlock for safety as required. The single joystick handle shall accommodate up to 4 miniature dual axis thumb operated joysticks for controlling up to (8) hydraulic valve functions simultaneously. A two-step select-and-operate system is unacceptable. There will also be 2 momentary switches or 1 momentary rocker switch for remote spreader blast and standby. Controls for spreader must be located on armrest at the operator's fingertips. The control center must also include switch controls for up to 8, 15 amp auxiliary functions.
- c. The electronic spreader control shall be designed for, closed-loop control of granular and pre-wet liquid application as a standard and shall have the ability to control direct liquid application separately or simultaneously when optional equipment is selected. The electronic spreader control shall have a field replaceable battery backup that protects memory functions. Data memory shall be 512K RAM. For data logging, the unit shall have the capability to retain up to four thousand (4000) events. The electronic spreader firmware shall be upgradeable by downloading files from the supplier's web site at no charge to the municipality for the life of the unit. The unit must be protected from reverse polarity, as well as be over-voltage protected by using a five-amp reset circuit breaker. All circuit boards to be conformal coated. The spreader control is to be capable of self-diagnostics for system errors and correction procedures.
- d. Spreader display unit shall be a "heads up" display. It shall be a 5" diagonal LCD with a viewing area of 3" X 4", TFT type, color display with 320 X 234 screen resolution. The viewing angle shall be at least +/- 45 degrees horizontal and +/- 30 degrees vertical and is to be viewed from the 6 o'clock position. The display contrast ratio shall be at least 200:1. The LCD shall have hardened glass that is covered with an anti-reflective coating. The display shall have no integrated dials or pushbuttons and should not be touch screen. The display must be protected against ingress of spilled or splashed liquids as well as dust. One USB port shall be included for purposes of programming and upgrading the firmware of the display. The operating temperature range shall be a minimum of -20°C to +70°C. The display shall automatically reduce the brightness of the LCD for nighttime operation by

the use of one analog input that monitors the vehicle dash setting. The display shall communicate with the spreader control and shall include the following spreader information:

- Granular application spread rate – Set application rate and actual application rate
 - Prewet application spread rate – Set application rate and actual application rate
 - Anti-ice application spread rate – Set application rate and actual application rate
 - Application rates available in standard or metric units
 - Graphical representation of spinner set rate
 - Mode of spreader operation
 - Indication of spreader status to differentiate between spreading, standby, and blast
 - Plain text error messaging of active errors
 - Road temperature (°F or °C) – (appropriate sensors shall be supplied, installed and integrated with control center)
 - Ambient temperature (°F or °C) – (appropriate sensors shall be supplied, installed and integrated with control center)
 - Current date and time
 - Data menu to include the following items:
 - Current output readings to valve coil for the auger, spinner, prewet, and anti-ice functions
 - Season cumulative spreader information including material weight and volume, distance, and time for each material and operation mode
 - Current cumulative spreader information including material weight and volume, distance, and time for each material and operation mode
 - Error log in plain text to include the last 125 errors associated with the spreader control including the date and time of each error
 - Truck battery voltage
 - Truck speed (miles per hour)
 - All of the above items to be displayed simultaneously if so desired
- e. The display screen shall include four warning options to include body up, low oil, oil temp, and filter bypass with an optional audible alarm. These warnings shall be in plain English text and are to be red in color. These alarms are to be functional regardless of spreader operation and status.
- f. The control unit shall have password protection to prevent unauthorized access to the calibration parameters. The password shall be programmable. The unit shall also utilize iButton technology that is capable of using a Supervisor key to provide access to the parameters without the access code. As an option, iButton technology shall be available for saving and loading of calibration parameters through the use of a Calibration key. The control unit shall be capable of self-calibration of auger/conveyor feed rates and require no additional timepieces to calibrate. Programming shall allow for blast

SEE BIDDING SUBMITTALS

function to be set one of three ways: momentary, timed or by distance traveled. The unit must also be capable of spreading up to four different granular materials and ten programmable spread rates. Controller shall have programmable nomenclatures for granular and pre-wet materials. Programming shall provide for automatic default to open loop in the event of a feedback failure. The unit must provide three operational modes: manual, open loop (ground speed only) and closed loop (ground speed with auger/conveyor feedback). Programming shall also provide for two-speed axle input as required.

- g. The unit must be capable of downloading data to a serial printer or PC computer through the use of a bi-directional RS232 port when complete data is required. The unit must have ability to control four compensated valve outputs. Unit shall have a standby (pass) and blast feature as standard. Unit shall provide stationary unload functions on granular, pre-wet and direct functions. The unit shall also be upgradeable for event logging and temperature compensation. The control shall have a programmable jump-start speed feature to provide immediate material flow at one MPH. The unit must interface with provided road temperature sensors, direct liquid application systems, and AVL/data management equipment. For other seasonal use, the control must have the ability of measuring distance driven in feet or meters, using a start, stop, and reset method. It shall also be upgradeable for dust control application.
- h. A minimum training and calibration test of 16 hours in the field shall be provided.
- i. Recurring system training and calibration of 16 hours annually shall be supplied by the vendor for 5 consecutive years after procurement of the control center.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

18. Install 34" Hustling type front hitch:

- a. 12" structural C channel front bumper with tapered back ends.
- b. Double acting lift cylinder.
- c. Serrated bar steps at the front bumper.
- d. Tow hooks mounted at the front and at the rear of the chassis.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

SEE BOBVAULKER SUBMITTALS

19. Fuel/Hydraulic combination tank behind the cab:

- a. 120 gal fuel capacity/30 gal oil capacity; 7 ga. Steel construction.
- b. Ball valve shut offs on supply line and case drain.
- c. Suction strainer in supply line.
- d. Top mounted Zinga type filter.
- e. Low oil sensor with indicator light in the cab.
- f. Hydraulic system will be full of AW32 oil.
- g. Tanks will be painted black.
- h. Cross over hose kit.
- i. Valve enclosure to be incorporated into combination fuel and hydraulic tank construction behind cab..
- j. Add barr stock step/cat walk to drivers side near fuel tank.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

20. EMERGENCY LIGHTING:

- a. Sound Off LED amber flashers mounted in poly light boxes.
- b. Sound Off type LED stop/Turn and tail lights in poly light boxes.
- c. Sound off Led backup lights in poly light boxes.
- d. Star model 9016LED-A led mini light bar mounted on the cab shield with a stainless steel brush guard.
- e. 2 auxiliary flood lights mounted at rear, angled toward pavement.
- f. 1 food light mounted above scraper on left side.
- g. LED marker lights on the combination body.
- h. Plow lights and aluminum plow light brackets mounted on hood.
- i. Install hitch plate at the rear of the chassis frame for future hitch with tow hooks. Install Flaming River electric disconnect switch mounted inside a poly enclosure with LED indicator light as per specifications.
- j. Install Whelan Micro Amber 6 LED Vertex part 3 01-0268715-10A self-powered, mounted in front plow light bracket facing forward.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

21. SNOW PLOW, Roof model TPR-PR-10':

- a. Moldboard (tapered): 11' long on top, 47" height at rear, 30" height at nose, 8'2" width of cut at 35 degrees, five (5) 1/2" x 3" vertical ribs, 4" x 4" x 3/4" moldboard bottom angle, 3" x 3" x 3/8" top moldboard stiffener, moldboard thickness to be 10 gauge, 5/8" x 8" x 11' high carbon steel

SEE BODYBUILDED SUBMITTALS

cutting edge with SHS punching. Adjustable caster assemblies with skid shoes to be mounted on the plow. A rubber snow shield to be mounted across the top of the plow.

- b. Plate semi-circle: 4" square x 1/2" wall tube front drive frame member welded to a 1/2" plate. The drive frame member shall be 87-1/2" long and have 6-1/2" inner ears and 2-3/4" outer hinge ears. The semi-circle shall consist of a 1/2" x 64" flame cut main plate welded to the front drive frame tube, with 3-1/2" x 3-1/2" x 1/2" stop angles to be gusseted with 1/2" x 3-1/2" bars.
- c. Hitch to be Root 34" quick detachable (Husting type). Truck half is to be welded to a 10" x 20# channel bumper, have top & bottom bracing with bumper & bracing all being bolted to frame - Not welded. The bumper ends are to be flared back just enough to assure clearance of plow when fully reversed.
- d. Designed for easy mount on all types of hitches.
- e. 4x4 x 3/4" bottom angle.
- f. Moldboards are backed with 1/2" one-piece rib for added strength.
- g. Rugged construction designed to last.
- h. Heavy duty structural pushframe.
- i. Continuously welded to eliminate corrosion pockets.
- j. 100% welded.
- k. 5/8" x 8" cutting edge.
- l. Skid shoes on adjustable gear.
- m. Rubber deflector.
- n. Plastic blade guides.
- o. 34" Husting hitch.
- p. Plow lift is to be 12-15" actuated by a 3" double acting lift cylinder.
- q. Power angling to be twin three (3) inch cylinders with a cushion relief valve.
- r. Hydraulic power is not included in this specification. A central hydraulic system should supply approx. flow of 6 GPM with a maximum pressure of 1500 psi.
- s. For best installation of above hitch, cab & chassis should be ordered with minimum 18-24" integral frame extension.
- t. Installation is to include being able to remove front pump, use front tow hooks, etc. Any modifications to hood or grill for clearance of hitch must meet approval of City personnel.

___ YES, MEETS ALL SPECIFICATIONS

___ NO, DESCRIBE DEVIATIONS:

22. Mid-mounted 7' Junior Wing; Monroe Model MJW-7' junior mid mount parallelogram type wing:

- a. 7 ft moldboard length, 27" intake height, 28" discharge height
- b. 4"x 4" x 3/4" bottom angle
- c. 4" x 10" toe cylinder, 3" x 10" heel cylinder

SEE BODYBUILDER SUBMITTALS

- d. Moldboard will be 3/16" construction with 3/8", one piece ribs
- e. Heavy duty, spring cushioned push arm with shear pin
- f. Front cross tube with mounting plate
- g. Safety chain shall be installed for transport
- h. Wing Post shall be mounted just ahead of the front drive tire with the rear push arm mounted behind the rear drive tire.
- i. Wing Post shall be a parallelogram design and shall mount directly ahead of the drive tire
- j. Rear push arm is to be equipped with a 6" cushion spring
- k. Rear push arm support brace shall be constructed of 4" x 6" x 1/4" tubing and shall be supported by both frame rails
- l. Hydraulic circuit for the wing shall be equipped with a sequencing valve for proper operation of the wing
- m. The sequencing valve shall have built in load checks to prevent the wing from drifting down when not in use
- n. Sequencing valve shall have built in, manually adjustable flow controls
- o. Wing is to be equipped with hydraulic disconnects for easy removal
- p. Wing will also be equipped with a cushioned rubber stop to prevent it from hitting the body when placed in the stored position
- q. All welding on the moldboard shall be continuous
- r. Wing components and moldboard shall be shot blasted and powder coated
- s. Install Work light on frame of truck to illuminate wing
- t. Install poly light box mounted on the end of the wing with a Sound Off LED flashing light
- u. A reverse curved steel cutting edge 8" x 5/8" x 84" shall be installed
- v. Install two moldboard shoes mounted behind cutting edge
- w. Additional Items to existing hydraulic system include the following
- x. An additional valve section shall be installed in the main control valve to actuate the wing.
- y. The valve section for the wing shall be electric proportional type valve section
- z. Controls for the wing will be wired into the Force Patrol Command All

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

23. Exceptions Disclosure. Must be supplied with your bid

YES, our bid meets or exceeds all specifications.

NO, our bid does not meet all specifications (please attach deviations to this specification. (SEE COMPLIANCE SHEETS FOR DETAILS))

24. Local Service Support

- A. The successful bidder and truck equipment supplier must have factory trained service personnel and stocked repair parts at a factory authorized

service center located no more than one hundred fifty (150) miles from the City of Novi Field Services Complex. This stipulation is required to ensure a quick turn-around of a truck that requires repair so that down time will be greatly shortened. This also will reduce the time spent by City of Novi personnel in delivery and pick up of truck in need of repair.

Name of truck equipment vendor: SEE BIDDY SUBMITTALS

Address: _____

City, State: _____

PRODUCT BROCHURE TO BE SUBMITTED WITH BID.

TRUCK & TRAILER SPECIALTIES SUBMITTAL

Truck & Trailer Specialties
6726 Hanna Lake
Dutton, Mi. 49316
Phone 616-698-8215, Fax 616-698-0972

City of Novi

**Plow Equipment bid for Single axle truck with V box
Bid opening March 14, 2012 @3:00 PM**

Install 10' Monroe MSC-120-84-56 Dual Auger V-Box Spreader with Pre wet system, and single lane anti ice system including the following:

- 6.5 yard capacity
- 120" (10') hopper length
- 84" outside hopper width
- 10 a. 201 stainless hopper sides and ends
- 7 ga. 201 stainless longsills
- Vertical side braces; stainless steel
- Side braces spaced to accommodate two 180 gallon liquid tanks
- Rear discharge with dual 7" step flighted hard surfaced augers
- Rear mounted auger motors with planetary gearboxes, integral speed sensor
- Inverted v over augers, stainless steel, installed
- Top screens with center H beam installed, mild steel, powder black
- Hydraulic shut-off top screen latch kit
- Chassis mounting kit
- Stainless steel rear ladder
- Cab shield installed on the front of the V box
- Front bearing grease extensions to rear
- Single lane stainless steel wet boom with Raven flow meter and Banjo boom valve
- 60 gpm closed loop prewet and anti ice system pump.
- Nozzle kit, bulk fill kit, flush kit

Install Spray Mate Poly Fender kit including all necessary mounting brackets for single axle chassis

Install Monroe model 3512 underbody scraper including the following

- Two 4 in power reverse cylinder with 2" nitrated rods
- Two 3.5 in actuating cylinders with 2" nitrated rods
- All cylinders have poly pack seals
- 1 in circle with 5 in greaseable center bolt
- Circle includes a welded in hardened bushing
- 1 in x 20" x 12' moldboard 6 in cutting edges
- 2 in clevis bosses on power reverse cylinders
- contoured circle clamps with poly type wear pads
- three reinforced moldboard hinges with gussets
- 3/8 in pipe and hoses for faster scraper actuation
- hinge Shaft is 2.5" cold rolled round stock
- Moldboard hinges are constructed of 3/8" wall DOM tubing
- Adjustable j-50 relief valve is included
- Cushion valve for power reverse circuit is included

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Dutton, Mi. 49316
Phone 616-698-8215, Fax 616-698-0972

Install 34" Husting type front hitch including the following

12" structural C channel front bumper with tapered back ends
Double acting lift cylinder
Serrated bar steps at the front bumper
Tow hooks mounted at the front and at the rear of the chassis

Install Monroe Fuel/ Hydraulic combination tank behind the cab including the following:

120 gal fuel capacity/30 gal oil capacity
Choice of a valve enclosure built into the fuel tank or a separate frame mounted stainless steel valve enclosure.
Ball valve shut offs on supply line and case drain
Suction strainer in supply line
Top mounted Zinga type filter
Low oil sensor with indicator light in the cab
Hydraulic system will be full of AW32 oil
Tank will be painted black
Cross over hose kit

Install Central Hydraulic system including the following

Force America FASD45L piston pump- 6.0CID
Front pump mounting bracket
Pump flange
Low oil shut down block with override controls
Rom1221 low oil sender in tank
Spicer drive line

Force America Add-a-Fold valve with the following

4 way electric/hydraulic section for scraper with LS relief for down pressure
4 way electric/hydraulic section for scraper swing
4 way electric/hydraulic section for front plow
4 way electric/hydraulic section for Plow swing
3 way EPC section for main conveyor
3 way EPC section for prewet and anti ice system
4 way EPC section for spinner
Power Beyond end cover

Force Command All single joystick controller with armrest
Stainless steel valve enclosure

All necessary hoses and fittings will be Parker type
Stainless steel piping will be used to extend the spreader, spinner, pre wet, and return oil circuits to the rear of the chassis

Install Force America 5100 Spreader controller including the following

LCD display

Truck & Trailer Specialties

6726 Hanna Lake

Dutton, Mi. 49316

Phone 616-698-8215, Fax 616-698-0972

Spreader controls are mounted in the arm rest controller

Anti ice module is included

Training is included

Install Emergency lighting including the following

Sound Off LED amber flashers mounted in poly light boxes

Sound Off type LED stop/Turn and tail lights in poly light boxes

Sound off Led backup lights in poly light boxes

Star model 9016LED-A led mini light bar mounted on the cab shield with a stainless steel brush guard

2 sander flood lights mounted at rear

1 flood light mounted above scraper on left side

LED marker lights on the combination body

Plow lights with aluminum plow light brackets mounted on the hood

Install hitch plate at the rear of the chassis including the following:

Install PH20 pintle hook with D rings

Electronic Brake controller

tow hooks

Install Flaming River electrical disconnect switch mounted inside a poly enclosure with LED indicator light as per specifications

Install Monroe MPR30-47-11-ISCT including the following

30" intake height, 47" discharge height, 11' length

10 gauge roll formed moldboard

five 1/2" x 4" tapered, one piece, flame cut ribs,

2" x 3" x 3/8" top angle, 4" x 4" x 3/4" bottom angle,

horizontal moldboard angle bracing,

1/4" landslide plate,

dual compression trip spring assemblies for full moldboard trip,

4" x 4" x 3/8" cross-tube support

35 degree fixed angle moldboard with heavy duty push frame

Moldboard and pushframe are to be 100% continuously welded,

34" plow portion Husting type Hitch

Twin 3" power reverse cylinders

Rubber deflector and blade guides

Screw adjustable skid shoes

Standard plow is powder coated with the moldboard orange and a black pushframe.

Install Monroe model MJW-7' junior mid mount parallelogram type wing including the following:

7 ft moldboard length, 27" intake height, 28" discharge height

4" x 4" x 3/4" bottom angle

4" x 10" toe cylinder, 3" x 10" heel cylinder

Moldboard will be 3/16" construction with 3/8", one piece ribs

Heavy duty, spring cushioned push arm with shear pin

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Dutton, Mi. 49316
Phone 616-698-8215, Fax 616-698-0972

Front cross tube with mounting plate
Safety chain shall be installed for transport
Wing Post shall be mounted just ahead of the front drive tire with the rear push arm mounted behind the rear drive tire.
Wing Post shall be a parallelogram design and shall mount directly ahead of the drive tire
Rear push arm is to be equipped with a 6" cushion spring
Rear push arm support brace shall be constructed of 4" x 6" x 1/4" tubing and shall be supported by both frame rails
Hydraulic circuit for the wing shall be equipped with a sequencing valve for proper operation of the wing
The sequencing valve shall have built in load checks to prevent the wing from drifting down when not in use
Sequencing valve shall have built in , manually adjustable flow controls
Wing is to be equipped with hydraulic disconnects for easy removal
Wing will also be equipped with a cushioned rubber stop to prevent it from hitting the body when placed in the stored position
All welding on the moldboard shall be continuous
Wing components and moldboard shall be shot blasted and powder coated
Install Work light on frame of truck to illuminate wing
Install poly light box mounted on the end of the wing with a Sound Off LED flashing light
A reverse curved steel cutting edge 8" x 5/8" x 84" shall be installed
Install two moldboard shoes mounted behind cutting edge
The valve section for the wing shall be electric proportional type valve section
Controls for the wing will be wired into the Patrol Cammandall

Installed \$81,050.00 ca.

Submitted by Dan Bouwman/Tom Giles
03/10/12

Company Name _____



**CITY OF NOVI
SPECIFICATIONS**

**SINGLE AXLE V BOX TRUCK
INTERNATIONAL 7400 4X2 S.B.A., OR EQUIVALENT**

1. COMPONENTRY

- a. The bidder shall supply with this bid a certified letter stating that ALL parts and all componentry, either manufactured or purchased by the bidder which are a part of the equipment bid upon, are new, and further, that no used and/or reconditioned parts or componentry are incorporated in this equipment.
- b. Appurtenances and/or accessories not herein mentioned, but are necessary to furnish a complete unit, ready to use upon delivery, shall be included and confirm to the best practice known in design, quality of material, and be subject to these minimum specifications in full. These specifications shall be construed as minimum. Should the manufacturer's current published data or specifications exceed these, they shall be considered minimum and be furnished.
- c. **Exceptions Disclosure: Any exceptions, clarifications, deviations or substitutions shall be indicated on the Bid Form and referenced by page and paragraph number and adequately described in this section (Specifications). If no such descriptions are provided the City of Novi will hold the bidder responsible for materials, systems and brand name items as described in the specifications. Where no substitution is described in the specifications, no deviations will be allowed. Specifications section AND Bid Form must be submitted in order to be considered a complete bid.**

____ YES, MEETS ALL SPECIFICATIONS

____ NO, DESCRIBE DEVIATIONS:

2. GROSS WEIGHT

- a. Minimum GVWR 44,000 lbs.

____ YES, MEETS ALL SPECIFICATIONS

____ NO, DESCRIBE DEVIATIONS:

3. CHASSIS - INTERNATIONAL 7400 4x2 S.B.A.

- a. Shall be the latest production model, conventional cab, 7400 SBA 4x2 series, with a cab to axle dimension of 114 inches.
- b. The frame shall be pressed steel channel with a yield strength of 120,000 P.S.I.

TRUCK & TRAILER SPECIALTIES
6726 Hanna Lake Rd. S.E.
DUTTON, MI 49316
(616) 698-8215

and a full C-channel reinforcement for a combined section modulus of 31.72 and a resisting bending moment of 3,806,400 inch pounds minimum. Front frame extension integral. No bolt on or weld on type.

- c. Two (2) front hooks or eyes shall be provided, one (1) mounted on each frame rail adjacent to front bumper.
- d. Front bumper shall be heavy-duty structural steel channel, 12" in depth, C-type, 25 lb./ft., flared back, approximately 1" from each end to within 1" of front fender so as to protect fenders, two (2) 3/8" I.D. pipes 6" long welded vertically to each end of front bumper.
- e. All bolted construction, including attachments, must use grade-8 bolts and/or huck bolts.
- f. Ample frame must be provided for mounting necessary equipment (i.e. dump body, hoist, front pump etc.). Frame cut after mounting of equipment shall be held to truck manufacturer's recommended standards.
- g. 1310 front flange engine PTO adapter plate shall be supplied.

Comply
T&T spec →

___ YES, MEETS ALL SPECIFICATIONS
___ NO, DESCRIBE DEVIATIONS:

4. CAB

- a. Manufacturer's conventional cab of sufficient bumper to back of cab dimension so that the power plant (engine) is located ahead of the cowl and requires no special "in cab" housing.
- b. Driver seat – air suspension cloth hi-back – lumbar support integral headrest. Passenger seat – non-suspension high back cloth – fixed back w/ under seat storage
- c. Door-mounted dispatch compartment.
- d. Left hand arm rest, sun visors, grab handles and running boards, exterior mounted sun visor with L.E.D. marker lights.
- e. Steering column shall be tilting.
- f. Air horn. Single, frame mounted.
- g. OEM AM/FM radio with standard speakers and auxiliary input.
- h. Accommodation package for 2-way radio.
- i. Cab sound insulation package.
- j. Cigarette lighter for diagnostic equipment power.
- k. Left and right hand rectangular heated and remote power mirrors, 6" x 16", "Westcoast" Break-a-way – type, with auxiliary convex mirror bright finish heads, and brackets w/ L.E.D. clearance lights.
- l. Illuminated direct-reading gauges, including: Air Pressure Gauges, Tachometer, Speedometer, Odometer, Fuel Gauge, Water Temperature Gauge, Oil Pressure Gauge Direct Reading, Voltmeter, Hour meter, High-Temperature Water Warning Light, and Air Cleaner Restriction Gauge Mounted inside Cab.
- m. Engine Alarms: Air, audible, Oil and water, audible and visual.
- n. Standard Tilt hood (without hood hatches) and fixed grille.
- o. Electric intermittent windshield wipers with heated washers.
- p. Tinted glass throughout, with power windows left & right w/ driver control.

Comply
T&T →

- q. Electronic throttle control, variable.
- r. Hydraulic controls must be moved closer to operator as requested.
- s. Instrument Panel, Ergonomic style.
- t. Painted IHC Code #2303RED (Cab).
- u. Front fender flares (black).
- v. Muffler stack shall not to exceed cab height by more than 4 inches.

___ YES, MEETS ALL SPECIFICATIONS

___ NO, DESCRIBE DEVIATIONS:

5. ENGINE

- a. International MaxxForce 10, Diesel, 310 HP, 1050 lb-ft Torque @ 1,200 RPM, 2200 RPM Governed Speed, #2 Bell Housing or larger.
- b. Fuel/water separator spin-on type, heated type.
- c. Air cleaner, dual element heavy-duty type with restriction gauge in dash and under hood intake with inside-outside valve or integral snow separation module.
- d. Automatic hi-temp low oil pressure engine shutdown. Block heater; plug at driver's side, with provision for an oil pan heater.
- e. Provide manufacturers temporary fuel tank.
- f. Horizontal muffler and vertical tailpipe must be mechanically fastened to frame rails behind cab for maximum stability, with safety shield. Furnish stainless steel exhaust pipes and clamps. Furnish 45 degree elbow pipe above muffler exhaust.
- g. Radiator shall have necessary frontal area to provide adequate cooling when used in conjunction with transmission and hydraulic coolers and shall have no cut-outs or holes for PTO shaft, On/Off cooling fan drive
- h. Silicone hose package, radiator and heater hoses.
- i. Aluminum 1588 sq in Radiator with 885 sq in charge air cooler.
- j. Engine control remote mounted (provision for body builder installation of PTO controls) and ground speed pickup wire.
- k. Engine must be a wet sleeve type w/ extended life coolant to -40° below zero.
- l. Extended engine & engine electronics including injectors. Service contract for 84 months, 100,000 miles.

___ YES, MEETS ALL SPECIFICATIONS

___ NO, DESCRIBE DEVIATIONS:

6. FLUID LEVELS

Comply
T&T →

- a. All hydraulic oil tanks, if provided, shall be full upon delivery.
- b. All engine fluids including reservoirs, if provided, shall be at manufacturer's suggested levels at delivery.
- c. All fluid reservoirs shall be properly labeled in a visible location.

____ YES, MEETS ALL SPECIFICATIONS

____ NO, DESCRIBE DEVIATIONS:

7. TRANSMISSION

- a. Allison Electronic 3500 RDS P; 6-speed automatic, with T-bar shifter.
- b. Magnetic drain plug.
- c. Temperature gauge, direct reading.
- d. External Transmission Cooler, water to oil type.
- e. Castrol Trans Syn'd oil, and 5 year warranty (2 yrs. Std. Plus 3 yrs. extended).
- f. Trans oil level sensor.
- g. Locate transmission Electronic Control Module inside cab interior
- h. External transmission cooler, to follow Allison recommended specifications.

____ YES, MEETS ALL SPECIFICATIONS

____ NO, DESCRIBE DEVIATIONS:

8. ELECTRICAL

- a. 12 volt light system throughout.
- b. Daytime running lights and fender mounted turn signals dual faced amber.
- c. Halogen headlights.
- d. Electric junction box in cab.
- e. Batteries – three 12-volt, maintenance free, 2100 CCA at 0 degrees F – combined with jump start – stud. Truck manufacturer's battery box shall be re-positioned per Fleet Managers instructions at the time of construction. Battery box must be vented by drilling (2) two (1/2") half inch diameter holes in front and rear side panels.
- f. Leece-Neville 135 amp Alternator w/ higher current output @ idle.
- g. Starter shall be heavy-duty type with thermal over crank protection.
- h. Lighting shall conform to federal Motor Vehicle Safety Standards #108.
- i. Electrical system shall be protected by circuit breakers, manual-reset SAE Type II.
- (j)** Shall be equipped with a Cole-Hersee Socket #12063, wired to the light and equipment color code using a single loom, seven- (7) conductor 12 gauge wire. Also furnish and install electronic brake controller. *TAT to Furnish*
- k. Install weather tight connectors on back-up alarm.
- l. Wiring for all rear lights shall be incorporated with the Betts lighting system w/ 8 foot of rear stop tail light wire furnished by chassis manufacturer. *TAT to Furnish*
- m. Grommets must be used where wire passes through steel gussets and cross members.
- (n)** All Betts lighting wiring must conform to truck color code.
- o. 6-Pak Switch Rocker type Lighted – IHC supplied.
- (p)** The Betts lighting system shall be connected starting from inside the truck cab at

Comply → **(n)**
Comply → **(p)**
TAT

terminal strip, to a sealed plastic junction box, and mounted at the left rear of the V-body. All connections will be sealed in the junction box with no other connection in the harness, other than at the light fixtures.

Comply
T & T

- q. Furnish electrical adapter to step down 7 conductor socket to 6 conductor sockets.
- r. Crossover wiring harness shall be installed on 2nd. Underbody cross member forward of rear most cross member.
- s. Auxilliary Harness front Head Lights and turn signals for front plow application.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

9. FRONT AXLE, SPRING, AND STEERING

- a. Axle capacity not less than 18,000 lbs. set back
- b. Spring capacity not less than 9,000 lb., each at ground – multi-leaf.
- c. Power assist steering – dual.
- d. Double-acting shock absorbers.
- e. Oil lubricated wheel seals with sight gauge.
- f. Three stage taper leaf front suspension.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

10. REAR AXLE AND SUSPENSION

- a. Single speed axle Meritor RS-26-185, Gear ratio: 5.63
- b. Axle capacity not less than 26,000 lbs.
- c. Rear axle ratio to provide road speed of 65 mph at GVWR while providing compatibility with manufacturer's recommendations for engine, transmission and other drive-train components. Minimum gear ratio 5:63
- d. Suspension capacity not less than 31,000 lbs. A 4,500 lb helper spring on each side shall also be included.
- e. Magnetic drain plug.
- f. Driveline – To be equipped with Spicer Lifeline Series Driveline to match torque requirements.
- g. Driver controlled rear locking differential.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

11. BRAKES

- a. Full air brakes, S-Cam, Auto slack adjusters and anti-lock A.B.S.
- b. Front brake shoes shall be 16-1/2" x 6" OR Disc Brakes
- c. Rear brake shoes shall be 16-1/2" x 7".
- d. Bendix BW750 Series 13.2 CFM.
- e. Heated DV2 Automatic Drain Valve.
- f. Air drier BWAD-IP or equal model.
- g. MGM Parking brake.
- h. Backing plate shields for brakes, front and rear.
- i. Brake Chambers installed in front of rear bulk head.

____ YES, MEETS ALL SPECIFICATIONS

____ NO, DESCRIBE DEVIATIONS:

12. WHEELS AND TIRES

- a. Front - 385 65R22.5, Michelin "XZY-3" 18 ply front (Qty. 3)
- b. Rear - 12R22.5, Michelin "XZY-3" 16 ply rear (Qty 5)
- c. Hub piloted disc wheels, 10 stud - 22.5 x 8.25, (Qty 5) rear & front 12.25/DC (Qty 3)

____ YES, MEETS ALL SPECIFICATIONS

____ NO, DESCRIBE DEVIATIONS:

13. MISCELLANEOUS EQUIPMENT

- a. Rear tow hooks mounted to frame, (1) pair.
- b. Electronic 12-volt back-up alarm installed on drivers' side below left rear taillight/turn signal assembly below steel guard.
- c. O.E.M. Air Conditioning System with fresh air filter.
- d. Furnish and install 1/2" thick rubber mud flaps with anti-sail feature behind rear tires secured to fender understructure.
- e. Furnish and install P30 pintle hook on reinforcement structural steel channel rear of truck frame, per Fleet Manager's direction. *T&T*
- f. 4 wheel trailer connection for straight Truck which includes hand control valve, service and emergency electrical lines plumbed to rear of truck frame ending at a junction block with quick coupler gland hands installed on rear of Truck chassis.
- g. Furnish and install Preco 1040 back-up alarm.
- h. Install license plate frame and light.
 - i. Furnish safety items, flares, triangle reflector kit and 5 lb fire extinguisher.
 - j. Two service manuals covering truck and chassis, added auxiliary equipment, and all other components included in these specifications that may require testing, adjustment, part replacement, and periodic preventive maintenance.

*T&T
Comply*

*Comply
T&T*

All of the aforementioned detail shall also be provided on a CD that is compatible with Windows 7. Additional circuit diagrams & electrical system trouble shooting manuals shall be delivered as paper only.

- k. Two parts manuals covering this equipment, all added auxiliary equipment and all other components included in these specifications that may require part replacement, and periodic preventive maintenance, CD-Rom and paper type. Also Master Diagnostic's software - ZTS4463-4 and IC3 Com interface cable ZTSE 4632.
- l. One set of all "Special Tools" for this equipment, all added auxiliary equipment and all other components included in these specifications that require periodic preventive maintenance.
- m. Vendor must specify warranty coverage and location (s) of repairs of this equipment, all added auxiliary equipment and all other components that are included in these specifications that may be different than that of the general warranty coverage and/or extended coverage.
- n. All equipment as specified, manuals, and special tools must be delivered to the Department of Public Services - Fleet Maintenance Division, 26300 Dewal, Novi, Michigan. No payment shall be made until terms of this sales agreement have been met and are verified by the City of Novi.

____ YES, MEETS ALL SPECIFICATIONS

____ NO, DESCRIBE DEVIATIONS:

14. SPECIFICATIONS FOR V BODY

- a. Install 10 ft Chassis mounted stainless steel V box with a liquid capacity of not less than 360 gals.
- b. Furnish and install 2 inch female cam lever coupling for filling liquid tanks.
- c. 84" outside hopper width.
- d. Dual 7" augers.
- e. 10 a. 201 stainless steel hopper sides and ends.
- f. 7 ga. 201 stainless longills
- g. Vertical side braces; stainless steel
- h. Side braces spaced to accommodate four 180 gallon liquid tanks.
- i. Rear discharge with dual 7" step flighted hard surfaced augers.
- j. Rear mounted auger motors with planetary gearboxes and integral speed sensor.
- k. Inverted "V" over augers, stainless steel, installed.
- l. Top screens with center H beam installed, stainless steel.
- m. Hydraulic shut-off screen latch kit.
- n. Chassis mounting kit.
- o. Stainless steel rear ladder.
- p. Cab shield installed on the front of the V body.
- q. Front bearing grease extensions to rear.
- r. Single lane stainless steel wet boom with Raven flow meter and Banjo boom valve.
- s. 11 gpm closed loop prewet system.

- t. Flip up spinner and anti-ice bar assembly for ease of unloading.
- u. Install Spray Mate Poly Fender kit including all necessary mounting brackets.
- v. The anti-ice liquid pump shall have the capacity to pump 40 gallons per minute.

60 GPM

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

Pump Exceeds - 60 GPM Rated Flow

15. UNDER-TRUCK SCRAPER SPECIFICATIONS

- a. Hangerboard - minimum 1/2" formed plate with 1/2" steel reinforcements the entire length of hinge line, with a hardened, replaceable center pin bushing.
- b. Hinge Shaft - 2-1/2" O.D. x 96 linear inches minimum high carbon steel running the total length of the hangerboard (660 square inches of bearing surface area) with zerk fittings located along the hinge line for lubrication. The hinge system shall consist of two (2) 6" end hinges with greasable thrust bearing at each end of hinge shaft and one (1) 15" center hinge with six attaching bolts, all 3-1/4" O.D. x 2-9/16" I.D. The hangerboard cut-out for the center hinge bracket shall have beveled corner cuts and have a 3/8" x 1" reinforcing bar welded over the entire length of the bracket.
- c. Moldboard - 1" thick x 20" wide x 12' long, heat treated carbon steel reinforced in the center with 2-1/2" x 2-1/2" x 1/2" angle 52" long. The bottom shall be offset to accommodate beveled cutting edges.
- d. Actuation and shock assembly - moldboard to be actuated by two Root designed 3-1/2" I.D. x 10" stroke double acting cylinders with 2" nitrated piston rods and 3/8" ports & plumbing. Cylinders to be mounted horizontally on the scraper by 1" thick reinforced steel trunnion brackets. The cylinder shall be retained in the housing by means of a retaining ring consisting of 1/2" w x 1-1/2" long tubing secured to the shock housing with three 5/8" bolts. Trunnion bearings to be 2-3/4" O.D., 3/8" wall carbon steel bored to accept 2" trunnion pin.
- e. Circle - 1" thick solid steel, notchless, 1 pc. design. The center pivot hole shall have a 5" I.D. replaceable bushing for center pin. The center pin is to have a 6" min. O.D. top, 5" O.D. shoulder, 1-1/4" O.D. stub shaft, grease zerk and bolt through hangerboard with three (3) 3/4" Gr. 8 attaching bolts. Circle clamps shall be 20.5" with 1" top plate. The lower plate shall be welded to hangerboard. The top plate and a polyethylene shim shall bolt to the lower plate with 3-1" Gr. 8 bolts with locknuts.
- f. Power Reverse to be cab controlled with cushion valve relief, and shall be accomplished using two 4" bore by 14-1/2" stroke double acting cylinders with 1/2" ports working in tandem and providing positive hydraulic locking. The piston rods shall be nitrated CR steel 2" in diameter. The piston rod ends and the barrel ends of the cylinders shall be welded 2" thick greasable wear blocks. The hangerboard bosses shall be 3" O.D. tubing, solid welded top and bottom of the hangerboard. Both the anchor and live end pins shall be 2" in diameter and held in place by a 5/8" gr. 8 bolt with nut & washer.
- g. Installation to include modification or relocation of exhaust parts, battery boxes, air tanks & dryers, etc. to achieve maximum height and allow for proper

- operation.
- h. Hydraulic power is to be provided by a central hydraulic system (specified elsewhere) with proper pressure and flow requirements for proper and satisfactory operation.
 - i. Under body scraper must be installed by an authorized dealer or distributor for the City of Novi, and to include modification or relocation of exhaust parts, battery boxes, air tanks and dryers, etc. to make for proper height of 20-1/2" to bottom of circle (the only exceptions to this are if drive line, transmission, transfer case, etc. are too low). Hydraulic power to scraper is to be 1,500 psi maximum pressure for up and reverse functions and 500 psi for down pressure and approximately 10 GPM flow to provide for satisfactory and safe operation.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

16. CENTRAL HYDRAULIC SYSTEM OR EQUIVALENT

- a. Force FASD45L piston pump – 6.0CID.
- b. Front pump mounting bracket.
- c. Pump flange.
- d. Low oil shut down block with override controls.
- e. Rom1221 low oil sender in tank.
- f. Spicer drive line.
- g. Valve s a Force Add-a-Fold with the following:
 - 4 way air controlled section for scraper with LS relief for down pressure.
 - 4 way electric/hydraulic controlled section for scraper swing.
 - 4 way electric/hydraulic controlled section for front plow.
 - 4 way electric/hydraulic controlled section for plow swing.
 - 3 way EPC section for main conveyor.
 - 3 way EPC section for prewet and anti-ice system.
 - 4 way EPC section for spinner.
 - Power Beyond end cover.
- h. Force America Command All controller armrest compatible.
- i. Stainless steel valve enclosure.
- j. All necessary hoses and fittings will be Parker type
- k. Stainless steel piping will be used to extend the spreader, spinner, pre wet, and return oil circuits to the rear of the chassis.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

*Note: Valve also includes a section for the wing
 \$ will be operated by the Commandall joystick*

17. CONTROL CENTER:

The control center shall be a Force America CommandAll MJ series with 5100 spreader control or equivalent.

- a. Controls for all valve functions, electronic spreader control, and auxiliary lighting 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.
- b. The controller shall have a single joystick handle with integrated miniature joysticks. The hoist control shall be fully proportional and operated with a mechanical lift-to-operate interlock for safety as required. The single joystick handle shall accommodate up to 4 miniature dual axis thumb operated joysticks for controlling up to (8) hydraulic valve functions simultaneously. A two-step select-and-operate system is unacceptable. There will also be 2 momentary switches or 1 momentary rocker switch for remote spreader blast and standby. Controls for spreader must be located on armrest at the operator's fingertips. The control center must also include switch controls for up to 8, 15 amp auxiliary functions.
- c. The electronic spreader control shall be designed for, closed-loop control of granular and pre-wet liquid application as a standard and shall have the ability to control direct liquid application separately or simultaneously when optional equipment is selected. The electronic spreader control shall have a field replaceable battery backup that protects memory functions. Data memory shall be 512K RAM. For data logging, the unit shall have the capability to retain up to four thousand (4000) events. The electronic spreader firmware shall be upgradeable by downloading files from the supplier's web site at no charge to the municipality for the life of the unit. The unit must be protected from reverse polarity, as well as be over-voltage protected by using a five-amp reset circuit breaker. All circuit boards to be conformal coated. The spreader control is to be capable of self-diagnostics for system errors and correction procedures.
- d. Spreader display unit shall be a "heads up" display. It shall be a 5" diagonal LCD with a viewing area of 3" X 4", TFT type, color display with 320 X 234 screen resolution. The viewing angle shall be at least +/- 45 degrees horizontal and +/- 30 degrees vertical and is to be viewed from the 6 o'clock position. The display contrast ratio shall be at least 200:1. The LCD shall have hardened glass that is covered with an anti-reflective coating. The display shall have no integrated dials or pushbuttons and should not be touch screen. The display must be protected against ingestion of spilled or splashed liquids as well as dust. One USB port shall be included for purposes of programming and upgrading the firmware of the display. The operating temperature range shall be a minimum of -20°C to +70°C. The display shall automatically reduce the brightness of the LCD for nighttime operation by

the use of one analog input that monitors the vehicle dash setting. The display shall communicate with the spreader control and shall include the following spreader information:

- Granular application spread rate – Set application rate and actual application rate
 - Prewet application spread rate – Set application rate and actual application rate
 - Anti-Ice application spread rate – Set application rate and actual application rate
 - Application rates available in standard or metric units
 - Graphical representation of spinner set rate
 - Mode of spreader operation
 - Indication of spreader status to differentiate between spreading, standby, and blast
 - Plain text error messaging of active errors
 - Road temperature (°F or °C) – (appropriate sensors shall be supplied, installed and integrated with control center)
 - Ambient temperature (°F or °C) – (appropriate sensors shall be supplied, installed and integrated with control center)
 - Current date and time
 - Data menu to include the following items:
 - Current output readings to valve coil for the auger, spinner, prewet, and anti-ice functions
 - Season cumulative spreader information including material weight and volume, distance, and time for each material and operation mode
 - Current cumulative spreader information including material weight and volume, distance, and time for each material and operation mode
 - Error log in plain text to include the last 125 errors associated with the spreader control including the date and time of each error
 - Truck battery voltage
 - Truck speed (miles per hour)
 - All of the above items to be displayed simultaneously if so desired
- e. The display screen shall include four warning options to include body up, low oil, oil temp, and filter bypass with an optional audible alarm. These warnings shall be in plain English text and are to be red in color. These alarms are to be functional regardless of spreader operation and status.
- f. The control unit shall have password protection to prevent unauthorized access to the calibration parameters. The password shall be programmable. The unit shall also utilize iButton technology that is capable of using a Supervisor key to provide access to the parameters without the access code. As an option, iButton technology shall be available for saving and loading of calibration parameters through the use of a Calibration key. The control unit shall be capable of self-calibration of auger/conveyor feed rates and require no additional timepieces to calibrate. Programming shall allow for blast

function to be set one of three ways: momentary, timed or by distance traveled. The unit must also be capable of spreading up to four different granular materials and ten programmable spread rates. Controller shall have programmable nomenclatures for granular and pre-wet materials. Programming shall provide for automatic default to open loop in the event of a feedback failure. The unit must provide three operational modes: manual, open loop (ground speed only) and closed loop (ground speed with auger/conveyor feedback). Programming shall also provide for two-speed axle input as required.

- g. The unit must be capable of downloading data to a serial printer or PC computer through the use of a bi-directional RS232 port when complete data is required. The unit must have ability to control four compensated valve outputs. Unit shall have a standby (pass) and blast feature as standard. Unit shall provide stationary unload functions on granular, pre-wet and direct functions. The unit shall also be upgradeable for event logging and temperature compensation. The control shall have a programmable jump-start speed feature to provide immediate material flow at one MPH. The unit must interface with provided road temperature sensors, direct liquid application systems, and AVL/data management equipment. For other seasonal use, the control must have the ability of measuring distance driven in feet or meters, using a start, stop, and reset method. It shall also be upgradeable for dust control application.
- h. A minimum training and calibration test of 16 hours in the field shall be provided.
- i. Recurring system training and calibration of 16 hours annually shall be supplied by the vendor for 5 consecutive years after procurement of the control center.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

18. Install 34" Husting type front hitch:

- a. 12" structural C channel front bumper with tapered back ends.
- b. Double acting lift cylinder.
- c. Serrated bar steps at the front bumper.
- d. Tow hooks mounted at the front and at the rear of the chassis.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

19. Fuel/Hydraulic combination tank behind the cab:

- a. 120 gal fuel capacity/30 gal oil capacity; 7 ga. Steel construction.
- b. Ball valve shut offs on supply line and case drain.
- c. Suction strainer in supply line.
- d. Top mounted Zinga type filter.
- e. Low oil sensor with indicator light in the cab.
- f. Hydraulic system will be full of AW32 oil.
- g. Tanks will be painted black.
- h. Cross over hose kit.
- i. Valve enclosure to be incorporated into combination fuel and hydraulic tank construction behind cab..
- j. Add barr stock step/cat walk to drivers side near fuel tank.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

20. EMERGENCY LIGHTING:

- a. Sound Off LED amber flashers mounted in poly light boxes.
- b. Sound Off type LED stop/Turn and tail lights in poly light boxes.
- c. Sound off Led backup lights in poly light boxes.
- d. Star model 9016LED-A led mini light bar mounted on the cab shield with a stainless steel brush guard.
- e. 2 auxilliary flood lights mounted at rear, angled toward pavement.
- f. 1 food light mounted above scraper on left side.
- g. LED marker lights on the combination body.
- h. Plow lights and aluminum plow light brackets mounted on hood.
- i. Install hitch plate at the rear of the chassis frame for future hitch with tow hooks. Install Flaming River electric disconnect switch mounted inside a poly enclosure with LED indicator light as per specifications.
- j. Install Whelan Micro Amber 6 LED Vertex part 3 01-0268715-10A self-powered, mounted in front plow light bracket facing forward.

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

21. SNOW PLOW, Roof model TPR-PR-10: *MONROE Plow MPFA30-47-11 ET*

- a. Moldboard (tapered): 11' long on top, 47" height at rear, 30" height at nose, 8'2" width of cut at 35 degrees, five (5) 1/2" x 3" vertical ribs, 4" x 4" x 3/4" moldboard bottom angle, 3" x 3" x 3/8" top moldboard stiffener, moldboard thickness to be 10 gauge, 5/8" x 8" x 11' high carbon steel

cutting edge with SHS punching. Adjustable caster assemblies with skid shoes to be mounted on the plow. A rubber snow shield to be mounted across the top of the plow.

- b. Plate semi-circle: 4" square x 1/2" wall tube front drive frame member welded to a 1/2" plate. The drive frame member shall be 87-1/2" long and have 6-1/2" inner ears and 2-3/4" outer hinge ears. The semi-circle shall consist of a 1/2" x 64" flame cut main plate welded to the front drive frame tube, with 3-1/2" x 3-1/2" x 1/2" stop angles to be gusseted with 1/2" x 3-1/2" bars.
- c. Hitch to be Root 34" quick detachable (Husting type). Truck half is to be welded to a 10" x 20# channel bumper, have top & bottom bracing with bumper & bracing all being bolted to frame - Not welded. The bumper ends are to be flared back just enough to assure clearance of plow when fully reversed.
- d. Designed for easy mount on all types of hitches.
- e. 4x4 x 3/4" bottom angle.
- f. Moldboards are backed with 1/2" one-piece rib for added strength.
- g. Rugged construction designed to last.
- h. Heavy duty structural pushframe.
- i. Continuously welded to eliminate corrosion pockets.
- j. 100% welded.
- k. 5/8" x 8" cutting edge.
- l. Skid shoes on adjustable gear.
- m. Rubber deflector.
- n. Plastic blade guides.
- o. 34" Husting hitch.
- p. Plow lift is to be 12-15" actuated by a 3" double acting lift cylinder.
- q. Power angling to be twin three (3) inch cylinders with a cushion relief valve.
- r. Hydraulic power is not included in this specification. A central hydraulic system should supply approx. flow of 6 GPM with a maximum pressure of 1500 psi.
- s. For best installation of above hitch, cab & chassis should be ordered with minimum 18-24" integral frame extension.
- t. Installation is to include being able to remove front pump, use front tow hooks, etc. Any modifications to hood or grill for clearance of hitch must meet approval of City personnel.

Husting Type
Not Root

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

Plow is Monroe Model MPFA 30-47-11CT

22. **Mid-mounted 7' Junior Wing; Monroe Model MJW-7' junior mid mount parallelogram type wing:**

- a. 7 ft moldboard length, 27" intake height, 28" discharge height
- b. 4"x 4" x 3/4" bottom angle
- c. 4" x 10" toe cylinder, 3" x 10" heel cylinder

- d. Moldboard will be 3/16" construction with 3/8", one piece ribs
- e. Heavy duty, spring cushioned push arm with shear pin
- f. Front cross tube with mounting plate
- g. Safety chain shall be installed for transport
- h. Wing Post shall be mounted just ahead of the front drive tire with the rear push arm mounted behind the rear drive tire.
- i. Wing Post shall be a parallelogram design and shall mount directly ahead of the drive tire
- j. Rear push arm is to be equipped with a 6" cushion spring
- k. Rear push arm support brace shall be constructed of 4" x 6" x 1/4" tubing and shall be supported by both frame rails
- l. Hydraulic circuit for the wing shall be equipped with a sequencing valve for proper operation of the wing
- m. The sequencing valve shall have built in load checks to prevent the wing from drifting down when not in use
- n. Sequencing valve shall have built in, manually adjustable flow controls
- o. Wing is to be equipped with hydraulic disconnects for easy removal
- p. Wing will also be equipped with a cushioned rubber stop to prevent it from hitting the body when placed in the stored position
- q. All welding on the moldboard shall be continuous
- r. Wing components and moldboard shall be shot blasted and powder coated
- s. Install Work light on frame of truck to illuminate wing
- f. Install poly light box mounted on the end of the wing with a Sound Off LED flashing light
- u. A reverse curved steel cutting edge 8" x 5/8" x 84" shall be installed
- v. Install two moldboard shoes mounted behind cutting edge
- w. Additional Items to existing hydraulic system include the following
- x. An additional valve section shall be installed in the main control valve to actuate the wing.
- y. The valve section for the wing shall be electric proportional type valve section
- z. Controls for the wing will be wired into the Force Patrol Command All

YES, MEETS ALL SPECIFICATIONS
 NO, DESCRIBE DEVIATIONS:

23. Exceptions Disclosure. Must be supplied with your bid

- YES, our bid meets or exceeds all specifications.
 NO, our bid does not meet all specifications (please attach deviations to this specification.

24. Local Service Support

- A. The successful bidder and truck equipment supplier must have factory trained service personnel and stocked repair parts at a factory authorized

service center located no more than one hundred fifty (150) miles from the City of Novi Field Services Complex. This stipulation is required to ensure a quick turn-around of a truck that requires repair so that down time will be greatly shortened. This also will reduce the time spent by City of Novi personnel in delivery and pick up of truck in need of repair.

Name of truck equipment vendor:

Truck & TRAILER Specialties, Inc

Address:

6726 Hanna Lake

City, State:

Dutton, Mi. 49316

PRODUCT BROCHURE TO BE SUBMITTED WITH BID.



CITY OF NOVI
BID FORM

SINGLE AXLE V BOX TRUCK
INTERNATIONAL 7400 4X2 S.B.A.
OR EQUIVALENT

We the undersigned as bidder propose to furnish to the City of Novi, according to the specifications, conditions and instructions attached hereto and made a part thereof:

A. Single Axle V Box Truck, per specifications

Lump Sum \$ _____

Year/Make/Model _____

Estimated Chassis Delivery Time ARO _____ Days

Estimated Body Build 60-90 After chassis Days

Estimated Customer Delivery _____ Total Days

Equipment Price \$ 81,050.⁰⁰

Comments:

We acknowledge receipt of the following Addendums: _____
(please indicate numbers)

This bid submitted by:

Company (Legal Registration) _____

Address _____

City _____ State _____ Zip _____

Telephone _____ Fax _____

Agent's name (please print) _____

Agent's Title _____

Agent's signature _____

E-mail _____

Date _____

CITY OF NOVI
SINGLE AXLE V BOX TRUCK
INTERNATIONAL 7400 4X2 S.B.A., OR EQUIVALENT

Please return this page with your bid form

If your company is awarded the item(s) referenced in the bid proposal, other governmental entities may wish to use this contract and will issue a purchase order or contract for the item(s) awarded in the bid proposal following minimum order/contract requirements set forth in the bid documents. Each entity will provide their own purchase order and delivery location(s) and must be invoiced separately to the address indicated on their purchase order.

1. EXTENSION OF AWARD TO THE MITN (MICHIGAN INTER-GOVERNMENTAL TRADE NETWORK) PURCHASING COOPERATIVE: OPTIONAL

Numerous Counties, Cities, Townships, and Authorities of the State of Michigan are members of the MITN (Michigan Inter-governmental Trade Network) Purchasing Cooperative. Other associate entities are also members of the Cooperative in the Tri-County area. Please visit www.mitn.info website to view the entire list of participating agencies.

T&T Spec.

If an award is made to _____, it is agreed that the contract will be extended to other MITN Purchasing Cooperative members and associate entities under the same prices, terms, and conditions. *Equipment extension*

Our company is **NOT** interested in extending the contract to those MITN members listed on the website.

2. EXTENSION OF AWARD TO THE NOVI COMMUNITY SCHOOL DISTRICT, CITY OF NORTHVILLE, NORTHVILLE COMMUNITY SCHOOL DISTRICT, AND THE WALLED LAKE CONSOLIDATED SCHOOLS: OPTIONAL

The City of Novi is working with the Novi Community School District, City of Northville, Northville Community School District and the Walled Lake Consolidated Schools to discover opportunities to optimize procurement services.

If an award is made to _____, it is agreed that the contract will be extended to Novi Community School District, City of Northville, Northville Community School District and the Walled Lake Consolidated Schools under the same prices, terms, and conditions. *Equipment Bid.*

Our company is **NOT** interested in extending the contract to Novi Community School District, City of Northville, Northville Community School District and the Walled Lake Consolidated Schools.

Contractor Signature: _____

Company Name: _____

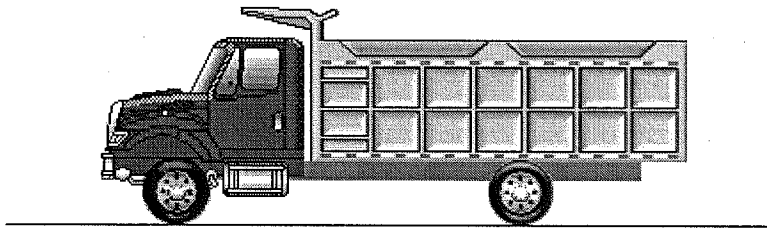
Date: _____

Prepared For:
City of Novi
Chris Quick
45175 W 10 Mile Rd.
Novi, MI 48375-3024
(248)735 - 5656
Reference ID: Novi S/A

COPY

Presented By:
TRI COUNTY INTL TRUCKS
Mark J Caracciolo
5701 WYOMING St.
DEARBORN MI 48126 -
(313)584-7090

City of Novi Bid for "Single Axle V-Box Truck". Due Wednesday, March 14, 2012 at 3:00pm. Afforded pricing includes all Navistar mandated Materials and Transportation Surcharges in effect as of February, 2012. Pricing effective thru 04/29/2012; subsequent to that date additional surcharges as mandated by Navistar may apply.



Model Profile
2013 7400 SBA 4X2 (SA625)

APPLICATION:	Construction Dump
MISSION:	Requested GVWR: 52000. Calc. GVWR: 41000 Calc. Start / Grade Ability: 27.20% / 2.16% @ 55 MPH Calc. Geared Speed: 74.7 MPH
FUEL ECONOMY:	7.16 MPG @ 55 MPH
DIMENSION:	Wheelbase: 181.00, CA: 113.90, Axle to Frame: 63.00
ENGINE, DIESEL:	{MaxxForce 10} EPA 10, 310 HP @ 2000 RPM, 1050 lb-ft Torque @ 1200 RPM, 2200 RPM Governed Speed
TRANSMISSION, AUTOMATIC:	{Allison 3500_RDS_P} 4th Generation Controls; Wide Ratio, 6-Speed, With Double Overdrive; On/Off Hwy; Includes Oil Level Sensor, With PTO Provision, Less Retarder, With 80,000-lb GVW & GCW Max.
CLUTCH:	Omit Item (Clutch & Control)
AXLE, FRONT NON-DRIVING:	{Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity
AXLE, REAR, SINGLE:	{Meritor RS-26-185} Single Reduction, Standard Track, 26,000-lb Capacity, R Wheel Ends, Driver Controlled Locking Differential Gear Ratio: 5.63
CAB:	Conventional
TIRE, FRONT:	(3) 315/80R22.5 XZY-3 (MICHELIN) 486 rev/mile, load range L, 20 ply
TIRE, REAR:	(4) 12R22.5 XZY-3 (MICHELIN) 483 rev/mile, load range H, 16 ply
SUSPENSION, RR, SPRING, SINGLE:	Vari-Rate; 31,000-lb Capacity, Includes 4500-lb Capacity Multileaf Auxiliary
FRAME REINFORCEMENT:	Outer "C" Channel, Heat Treated Alloy Steel (120,000 PSI Yield); 10.813" x 3.892" x 0.312"; (274.6mm x 98.9mm x 8.0mm); 480.0" (12192mm) Maximum OAL
PAINT:	Cab schematic 100GN Location 1: 2303, Red (Std) Chassis schematic N/A

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
SA62500	Base Chassis, Model 7400 SBA 4X2 with 181.00 Wheelbase, 113.90 CA, and 63.00 Axle to Frame.	6958/3442	10400
1570	TOW HOOK, FRONT (2) Frame Mounted	8/0	8
1572	TOW HOOK, REAR (2)	0/10	10
1CBU	FRAME RAILS Heat Treated Alloy Steel (120,000 PSI Yield); 10.125" x 3.580" x 0.312" (257.2mm x 90.9mm x 8.0mm); 480.0" (12192) Maximum OAL	51/199	250
1GBP	FRAME REINFORCEMENT Outer "C" Channel, Heat Treated Alloy Steel (120,000 PSI Yield); 10.813" x 3.892" x 0.312"; (274.6mm x 98.9mm x 8.0mm); 480.0" (12192mm) Maximum OAL	386/504	890
1LLK	BUMPER, FRONT Omit Item	-85/15	-70
1WDT	FRAME EXTENSION, FRONT Integral; 20" In Front of Grille, With Outer "C" Channel Reinforcement	163/-17	146
1WGR	WHEELBASE RANGE 138" (350cm) Through and Including 187" (475cm)	0/0	0
2ARZ	AXLE, FRONT NON-DRIVING {Meritor MFS-18-133A} Wide Track, I-Beam Type, 18,000-lb Capacity	130/0	130
	<u>Notes</u> : The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.		
3ADG	SUSPENSION, FRONT, SPRING Parabolic, Taper Leaf; 18,000-lb Capacity; With Shock Absorbers	122/0	122
	<u>Includes</u> : SPRING PINS Rubber Bushings, Maintenance-Free		
	<u>Notes</u> : The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.		
4091	BRAKE SYSTEM, AIR Dual System for Straight Truck Applications	0/0	0
	<u>Includes</u> : BRAKE LINES Color and Size Coded Nylon : DRAIN VALVE Twist-Type : DUST SHIELDS, FRONT BRAKE : DUST SHIELDS, REAR BRAKE : GAUGE, AIR PRESSURE (2) Air 1 and Air 2 Gauges; Located in Instrument Cluster : PARKING BRAKE CONTROL Yellow Knob, Located on Instrument Panel : PARKING BRAKE VALVE For Truck : QUICK RELEASE VALVE Bendix On Rear Axle for Spring Brake Release: 1 for 4x2, 2 for 6x4 : SLACK ADJUSTERS, FRONT Automatic : SLACK ADJUSTERS, REAR Automatic : SPRING BRAKE MODULATOR VALVE R-7 for 4x2, SR-7 with relay valve for 6x4		
	<u>Notes</u> : Rear Axle is Limited to 23,000-lb GAWR with Code 04091 BRAKE SYSTEM, AIR and Standard Rear Air Cam Brakes Regardless of Axle/Suspension Ordered.		
4193	BRAKES, FRONT, AIR CAM 16.5" x 6", Includes 24 SqIn Long Stroke Brake Chambers	0/0	0
	<u>Notes</u>		

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
	: The following features should be considered when calculating Front GAWR: Front Axles; Front Suspension; Brake System; Brakes, Front Air Cam; Wheels; Tires.		
4619	TRAILER CONNECTIONS Four-Wheel, With Hand Control Valve and Tractor Protection Valve, for Straight Truck	2/0	2
4722	DRAIN VALVE {Bendix DV-2} Automatic; With Heater; for Air Tank	1/0	1
	<u>Includes</u> : DRAIN VALVE Mounted in Wet Tank		
4AZA	AIR BRAKE ABS {Bendix AntiLock Brake System} Full Vehicle Wheel Control System (4-Channel)	0/0	0
4EBT	AIR DRYER {Bendix AD-IP} With Heater	22/3	25
	<u>Includes</u> : AIR DRYER LOCATION Inside Left Rail, Back of Cab		
4ETE	BRAKE CHAMBERS, FRONT AXLE {Haldex} 24 SqIn	4/0	4
4EVL	BRAKE CHAMBERS, REAR AXLE {Haldex GC3030LHDHO} 30/30 Spring Brake	0/0	0
	<u>Includes</u> : BRAKE CHAMBERS, SPRING (2) Rear Parking; WITH TRUCK BRAKES: All 4x2, 4x4; WITH TRACTOR BRAKES: All 4x2, 4x4; 6x4 & 6x6 with Rear Tandem Axles Less Than 46,000-lb. or GVWR Less Than 54,000-lb.		
4LAA	SLACK ADJUSTERS, FRONT {Haldex} Automatic	6/0	6
4LGA	SLACK ADJUSTERS, REAR {Haldex} Automatic	0/0	0
4NDH	BRAKES, REAR, AIR CAM S-Cam; 16.5" x 8.625" Includes 30/30 Sq.In. Long Stroke Brake Chambers and Spring Actuated Parking Brake	0/10	10
	<u>Notes</u> : The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires.		
4SBC	AIR COMPRESSOR {Bendix Tu-Flo 550} 13.2 CFM Capacity	0/0	0
4VCJ	AIR TANK LOCATION (2) Mounted Under Cab, Outside Left Rail, On Step Bracket, With 24" Ground Clearance	0/0	0
5708	STEERING COLUMN Tilting	10/0	10
5CAL	STEERING WHEEL 2-Spoke, 18" Diam., Black	0/0	0
5PTB	STEERING GEAR (2) {Sheppard M-100/M-80} Dual Power	124/-5	119
6DAX	DRIVESHAFT {Dana Spicer} SPL170XL in lieu of 1710 Series	0/2	2
7BEJ	EXHAUST SYSTEM Single, Horizontal, Aftertreatment Device Frame Mounted Outside Right Rail Under Cab; Includes Vertical Tail Pipe and Guard	4/-17	-13
	<u>Includes</u> : EXHAUST HEIGHT 10' Exhaust Height - Based on Empty Chassis with Standard Components (+ or - 1" Height) : MUFFLER/TAIL PIPE GUARD Non-Bright Finish		
7WAZ	TAIL PIPE (1) Turnback Type, Non-Bright, for Single Exhaust	0/0	0
7WCM	EXHAUST HEIGHT 8' 10"	2/0	2

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
7WZY	SWITCH, FOR EXHAUST 2 Position, Lighted & Latching, ON/OFF Type, Mounted in IP, Inhibits Diesel Particulate Filter Regeneration as Long as Switch is in ON Position	2/0	2
8000	ELECTRICAL SYSTEM 12-Volt, Standard Equipment <u>Includes</u> : BATTERY BOX Steel with Plastic Lid : DATA LINK CONNECTOR For Vehicle Programming and Diagnostics In Cab : FUSES, ELECTRICAL SAE Blade-Type : HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover : HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever : HEADLIGHTS (2) Sealed Beam, Round, with Chrome Plated Bezels : HORN, ELECTRIC Single : JUMP START STUD Located on Positive Terminal of Outermost Battery : PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light : RUNNING LIGHT (2) Daytime, Included With Headlights : STARTER SWITCH Electric, Key Operated : STOP, TURN, TAIL & B/U LIGHTS Dual, Rear, Combination with Reflector : TURN SIGNAL SWITCH Self-Cancelling for Trucks, Manual Cancelling for Tractors, with Lane Change Feature : TURN SIGNALS, FRONT Includes Reflectors and Auxiliary Side Turn Signals, Solid State Flashers; Flush Mounted : WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature (5 Pre-Set Delays), Integral with Turn Signal Lever : WINDSHIELD WIPERS Single Motor, Electric, Cowl Mounted : WIRING, CHASSIS Color Coded and Continuously Numbered	0/0	0
8518	CIGAR LIGHTER Includes Ash Cup	1/0	1
8718	POWER SOURCE Cigar Type Receptacle without Plug and Cord	1/0	1
8GHC	ALTERNATOR {Leece-Neville LBP2203H} Brush Type, 12 Volt 160 Amp. Capacity, Pad Mount	-6/0	-6
8HAB	BODY BUILDER WIRING Back of Standard Cab at Left Frame or Under Extended or Crew Cab at Left Frame; Includes Sealed Connectors for Tail/Amber Turn/Marker/ Backup/Accessory Power/Ground and Sealed Connector for Stop/Turn	2/0	2
8HAH	ELECTRIC TRAILER BRAKE/LIGHTS Accommodation Package to Rear of Frame; for Combined Trailer Stop, Tail, Turn, Marker Light Circuits; Includes Electric Trailer Brake Accommodation Package With Cab Connections for Mounting Customer Installed Electric Brake Unit, Less Trailer Socket	0/2	2
8NBR	BATTERY SYSTEM {JCI} Maintenance-Free (3) 12-Volt 2100CCA Total	10/5	15
8RGA	2-WAY RADIO Wiring Effects; Wiring With 20 Amp Fuse Protection, Includes Ignition Wire With 5 Amp Fuse, Wire Ends Heat Shrink and Routed to Center of Header Console in Cab	1/0	1
8RJV	RADIO {International} AM/FM Stereo With Weatherband, Clock, Auxiliary Input, Includes Multiple Speakers <u>Includes</u> : SPEAKERS IN CAB (2) Dual-Cone with Deluxe Interior : SPEAKERS IN CAB (4) Coaxial with Premium Interior	3/0	3
8THJ	AUXILIARY HARNESS 3.0' for Auxiliary Front Head Lights and Turn Signals for Front Plow Applications	2/0	2
8TKK	TRAILER AUXILIARY FEED CIRCUIT for Electric Trailer Brake Accommodation/ Air Trailer ABS; With 30 Amp Fuse and Relay, Controlled by Ignition Switch	1/0	1

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
8VZR	SWITCH, BODY CIRCUITS, MID for Bodybuilder, 6 Momentary Switches in Instrument Panel; One Power Module with 6 Channels, 20 Amp Max. Per Channel, 80 Amp Max Output, Switches Control Power Module Through Multiplex Wiring, Mounted in Cab Behind Driver Seat	1/0	1
8WBW	JUMP START STUD Remote Mounted <u>Includes</u> : JUMP START STUD Mounted to Battery Box	2/0	2
8WCL	HORN, AIR Black, Single Trumpet, Air Solenoid Operated	0/0	0
8WDG	BACK-UP ALARM {Preco 1059} Electronic; Solid State, Dual Function, 112 dBA	0/1	1
8WEL	BATTERY BOX Steel, With Fiberglass Cover; Mounted 26" BOC, Left Side Perpendicular to Frame Rail	1/0	1
8WHX	BATTERY DISCONNECT SWITCH {Joseph Pollak 51-316} Positive Type, Locking, Key Operated, Mounted on Battery Box	1/0	1
8WLK	TURN SIGNALS, FRONT Dual Face, Amber/Amber, Mounted on Top of Fender, Used With Standard Flush Mounted Front Turn Signal, Side Marker Lamps, Parking Lights and Reflectors	6/0	6
8WMA	SWITCH, TOGGLE, FOR WORK LIGHT Lighted; on Instrument Panel and Wiring Effects for Customer Furnished Back of Cab Light	2/1	3
8WML	HEADLIGHTS Long Life Halogen; for Two Light System	0/0	0
8WPH	CLEARANCE/MARKER LIGHTS (5) {Truck Lite} Amber LED Lights, Flush Mounted on Cab or Sunshade	0/0	0
8WPZ	TEST EXTERIOR LIGHTS Pre-Trip Inspection will Cycle all Exterior Lamps Except Back-up Lights	0/0	0
8WTL	STARTING MOTOR {Delco Remy 39MT} 12 Volt; Gear Reduced, With Thermal Over-Crank Protection	0/0	0
8WWJ	INDICATOR, LOW COOLANT LEVEL With Audible Alarm	1/0	1
8XAH	CIRCUIT BREAKERS Manual-Reset (Main Panel) SAE Type III With Trip Indicators, Replaces All Fuses Except For 5-Amp Fuses	0/0	0
9HAN	INSULATION, UNDER HOOD for Sound Abatement	10/0	10
9HBM	GRILLE Stationary, Chrome	0/0	0
9HBN	INSULATION, SPLASH PANELS for Sound Abatement	2/0	2
9WBC	FRONT END Tilting, Fiberglass, With Three Piece Construction; for 2007 & 2010 Emissions	0/0	0
10060	PAINT SCHEMATIC, PT-1 Single Color, Design 100 <u>Includes</u> : PAINT SCHEMATIC ID LETTERS "GN"	0/0	0
10761	PAINT TYPE Base Coat/Clear Coat, 1-2 Tone	0/0	0
10WPK	GROUND CLEARANCE IDENTITY For 24" Ground Clearance.	0/0	0
11001	CLUTCH Omit Item (Clutch & Control)	-64/-11	-75
12712	OIL FILTER, ENGINE {Hudgins Model 960 Spinner}	26/-1	25

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
12851	PTO EFFECTS, ENGINE FRONT Less PTO Unit, Includes Adapter Plate on Engine Front Mounted	10/0	10
12926	RADIATOR HOSES Silicone; Molded	0/0	0
12NUX	ENGINE, DIESEL {MaxxForce 10} EPA 10, 310 HP @ 2000 RPM, 1050 lb-ft Torque @ 1200 RPM, 2200 RPM Governed Speed <u>Includes</u> : AIR COMPRESSOR AIR SUPPLY LINE Naturally-Aspirated (Air Brake Chassis Only) : ANTI-FREEZE Red Shell Rotella Extended Life Coolant; -40 Degrees F/ -40 Degrees C; for MaxxForce Engines : COLD STARTING EQUIPMENT Intake Manifold Electric Grid Heater with Engine ECM Control : CRUISE CONTROL Electronic; Controls Integral to Steering Wheel : ENGINE OIL DRAIN PLUG Magnetic : ENGINE SHUTDOWN Electric, Key Operated : FUEL FILTER Included with Fuel/Water Separator : FUEL/WATER SEPARATOR Fuel/Water Separator and Fuel Filter in a Single Assembly; With Water-in-Fuel Sensor; Engine Mounted : GOVERNOR Electronic : OIL FILTER, ENGINE Spin-On Type : WET TYPE CYLINDER SLEEVES	0/0	0
12THT	FAN DRIVE {Horton Drivemaster} Direct Drive Type, Two Speed With Residual Torque Device for Disengaged Fan Speed <u>Includes</u> : FAN Nylon	9/0	9
12UBB	RADIATOR Aluminum, Front to Back Cross Flow, Series System; 1663 SqIn Core and 885 SqIn Charge Air Cooler and 470 SqIn Low Temperature Radiator Down Flow <u>Includes</u> : DEAERATION SYSTEM with Surge Tank : HOSE CLAMPS, RADIATOR HOSES Gates Shrink Band Type; Thermoplastic Coolant Hose Clamps : RADIATOR HOSES Premium, Rubber	7/-2	5
12UXE	FEDERAL EMISSIONS for 2010; MaxxForce 9 & 10 Engines	0/0	0
12VAL	AIR CLEANER Dual Element, with Integral Snow Valve and In-Cab Control <u>Includes</u> : GAUGE, AIR CLEANER RESTRICTION Air Cleaner Mounted	6/0	6
12VXT	THROTTLE, HAND CONTROL Engine Speed Control; Electronic, Stationary, Variable Speed; Mounted on Steering Wheel	0/0	0
12VYL	ACCESSORY WIRING, SPECIAL for Road Speed Wire Coiled Under Instrument Panel for Customer Use	0/0	0
12VYP	ENGINE CONTROL, REMOTE MOUNTED - No Provision Furnished for Remote Mounted Engine Control	0/0	0
12WTH	BLOCK HEATER, ENGINE {Phillips} 120 Volt/1250 Watt; With "Y" Cord From Socket in Standard Location, For a Dealer Installed Oil Pan Heater, With Extended Life Coated Metal/Plastic/Metal Material Oil Pan, for I6 <u>Includes</u>	4/0	4

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
	: BLOCK HEATER SOCKET Receptacle Type; Mounted below Drivers Door		
	<u>Notes</u> : MPM material is single sheet composite with two layers of sheet metal sandwiching plastic material. MPM material has electro-deposition prime coat with powder coating for the final finish coat.		
12WZE	EMISSION COMPLIANCE Federal, Does Not Comply With California Clean Air Idle Regulations	0/0	0
13AJN	TRANSMISSION, AUTOMATIC {Allison 3500_RDS_P} 4th Generation Controls; Wide Ratio, 6-Speed, With Double Overdrive; On/Off Hwy; Includes Oil Level Sensor, With PTO Provision, Less Retarder, With 80,000-lb GVW & GCW Max.	173/75	248
	<u>Includes</u> : OIL FILTER, TRANSMISSION Mounted on Transmission : TRANSMISSION OIL PAN Magnet in Oil Pan		
13WAW	OIL COOLER, AUTO TRANSMISSION {Modine} Water to Oil, for Allison or CEEMAT Transmission	25/0	25
13WBN	TRANSMISSION SHIFT CONTROL {Allison} T-Bar Type; for Allison 3000 & 4000 Transmission	0/0	0
13WLP	TRANSMISSION OIL Synthetic; 29 thru 42 Pints	0/0	0
13WUC	ALLISON SPARE INPUT/OUTPUT for Rugged Duty Series (RDS); General Purpose Trucks, Construction	0/0	0
13WYH	TRANSMISSION TCM LOCATION Located Inside Cab	0/0	0
13WYL	SHIFT CONTROL PARAMETERS Allison Performance Programming in Primary and Allison Economy Programming in Secondary	0/0	0
14ASA	AXLE, REAR, SINGLE {Meritor RS-26-185} Single Reduction, Standard Track, 26,000-lb Capacity, R Wheel Ends, Driver Controlled Locking Differential . Gear Ratio: 5.63	0/320	320
	<u>Includes</u> : REAR AXLE DRAIN PLUG (1) Magnetic, For Single Rear Axle		
	<u>Notes</u> : The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires. : When Specifying Axle Ratio, Check Performance Guidelines and TCAPE for Startability and Performance		
14SAL	SUSPENSION, RR, SPRING, SINGLE Vari-Rate; 31,000-lb Capacity, Includes 4500-lb Capacity Multileaf Auxiliary	0/88	88
	<u>Notes</u> : The following features should be considered when calculating Rear GAWR: Rear Axles; Rear Suspension; Brake System; Brakes, Rear Air Cam; Brake Shoes, Rear; Special Rating, GAWR; Wheels; Tires.		
15LKG	FUEL/WATER SEPARATOR With Thermostatic Fuel Temperature Controlled Electric Heater, and Filter Restriction/Change Indicator, Includes Standard Equipment Water-in-Fuel Sensor	5/0	5
15SPT	FUEL TANK Temporary; Top Draw; D-Style, Steel, 16" Tank Depth, 50 U.S. Gal., 189 L; Capacity, With Quick Connect Outlet, Mounted Right Side Back of Cab	0/0	0

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
16030	CAB Conventional <u>Includes</u> : ARM REST (2) Molded Plastic; One Each Door : CLEARANCE/MARKER LIGHTS (5) Flush Mounted : COAT HOOK, CAB Located on Rear Wall, Centered Above Rear Window : CUP HOLDERS Two Cup Holders, Located in Lower Center of Instrument Panel : DOME LIGHT, CAB Rectangular, Door Activated and Push On-Off at Light Lens, Timed Theater Dimming, Integral to Console, Center Mounted : GLASS, ALL WINDOWS Tinted : GRAB HANDLE, CAB INTERIOR (1) "A" Pillar Mounted, Passenger Side : GRAB HANDLE, CAB INTERIOR (2) Front of "B" Pillar Mounted, One Each Side : INTERIOR SHEET METAL Upper Door (Above Window Ledge) Painted Exterior Color : STEP (4) Two Steps Per Door	0/0	0
16975	HEATER HOSES Silicone	0/0	0
16HBA	GAUGE CLUSTER English With English Electronic Speedometer <u>Includes</u> : GAUGE CLUSTER (6) Engine Oil Pressure (Electronic), Water Temperature (Electronic), Fuel (Electronic), Tachometer (Electronic), Voltmeter, Washer Fluid Level : ODOMETER DISPLAY, Miles, Trip Miles, Engine Hours, Trip Hours, Fault Code Readout : WARNING SYSTEM Low Fuel, Low Oil Pressure, High Engine Coolant Temp, and Low Battery Voltage (Visual and Audible)	0/0	0
16HGH	GAUGE, OIL TEMP, ALLISON TRAN	1/0	1
16HHE	GAUGE, AIR CLEANER RESTRICTION {Filter-Minder} With Black Bezel Mounted in Instrument Panel	2/0	2
16HKT	IP CLUSTER DISPLAY On Board Diagnostics Display of Fault Codes in Gauge Cluster	0/0	0
16JNV	SEAT, DRIVER {National 2000} Air Suspension, High Back With Integral Headrest, Cloth, Isolator, 1 Chamber Lumbar, 2 Position Front Cushion Adjust, -3 to +14 Degree Back Angle Adjust <u>Includes</u> : SEAT BELT 3-Point, Lap and Shoulder Belt Type	28/11	39
16PJU	SEAT, PASSENGER {Gra-Mag} Non Suspension, High Back With Integral Headrest, Cloth, With Fixed Back, With Under Seat Storage <u>Includes</u> : SEAT BELT 3-Point, Lap and Shoulder Belt Type	25/10	35
16SDU	MIRRORS (2) {Lang Mekra} Styled; Rectangular, 7.09" x 15.75" & Integral Convex Both Sides, 102" Inside Spacing, Breakaway Type, Heated Heads Thermostatically Controlled, Power Both Sides, Clearance Lights LED, Bright Finish Heads & Brackets	8/0	8
16SEE	GRAB HANDLE Chrome; Towel Bar Type With Anti-Slip Rubber Inserts; for Cab Entry Mounted Left Side Only at "B" Pillar	3/0	3
16VHX	CAB MOUNTING HEIGHT EFFECTS High Cab in Lieu of Mid High Cab Mounting (Approx. 4.5")	0/0	0
16WBY	ARM REST, RIGHT, DRIVER SEAT	3/0	3

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
16WCT	AIR CONDITIONER {Blend-Air} With Integral Heater & Defroster <u>Includes</u> : HEATER HOSES Premium : HOSE CLAMPS, HEATER HOSE Mubea Constant Tension Clamps : REFRIGERANT Hydrofluorocarbon HFC-134A	42/5	47
16WJT	INSTRUMENT PANEL Center Section, Ergonomic Panel	0/0	0
16WJU	WINDOW, POWER (2) And Power Door Locks, Left and Right Doors, Includes Express Down Feature	5/0	5
16WKY	HVAC FRESH AIR FILTER	0/0	0
16WLS	FRESH AIR FILTER Attached to Air Intake Cover on Cowl Tray in Front of Windshield Under Hood	1/0	1
16WRZ	CAB INTERIOR TRIM Premium <u>Includes</u> : "A" PILLAR COVER Molded Plastic : CAB INTERIOR TRIM PANELS Cloth Covered Molded Plastic, Full Height; All Exposed Interior Sheet Metal is Covered Except for the Following: with a Two-Man Passenger Seat or with a Full Bench Seat the Back Panel is Completely Void of Covering : CAB SOUND INSULATION Includes Dash and Engine Cover Insulators : CAB, INTERIOR TRIM, CLOSEOUT Lower Dash Closeout Panel; Molded Plastic; Under Instrument Panel Driver Side : CONSOLE, OVERHEAD Molded Plastic; With Dual Storage Pockets with Retainer Nets, CB Radio Pocket, Speakers, and Reading Lights : COURTESY LIGHT (2) Mounted In Front Map Pocket Left and Right Side : DOOR TRIM PANELS with Cloth Insert on Bolster Driver and Passenger Doors : FLOOR COVERING Rubber, Black : GAUGE, TEMPERATURE, AMBIENT Includes Compass Readout and Wiring and Sensor With Display Unit Mounted in Cluster : HEADLINER Soft Padded Cloth : INSTRUMENT PANEL TRIM Molded Plastic with Black Center Section : STORAGE POCKET, DOOR (2) Molded Plastic (Carpet Texture), Full-Length; Driver and Passenger Doors : SUN VISOR (3) Padded Vinyl: 2 Moveable (Front-to-Side) Primary Visors, Driver Side with Vanity Mirror and Toll Ticket Strap, plus 1 Auxiliary Visor (Front Only), Driver Side	0/0	0
16WSK	CAB REAR SUSPENSION Air Bag Type	0/0	0
16XWD	SUNSHADE, EXTERIOR Aerodynamic, Painted Roof Color; Includes Integral Clearance/Marker Lights	14/3	17
16ZBB	ACCESS, CAB {Bustin} Driver & Passenger Sides, Two Aluminum, Self-Cleaning Steps (Bustin) Per Door, For Use with Regular & Extended Cabs	14/6	20
26DPY	WHEEL, SPARE, DISC 22.5" Painted Steel, 5-Hand Hole, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With .472" Thick Increased Capacity Disc	0/81	81
27DMW	WHEELS, FRONT DISC; 22.5" Painted Steel, 5 Hand Hole, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 9.00 DC Rims; With Steel Hubs. <u>Includes</u> : PAINT IDENTITY, FRONT WHEELS White <u>Notes</u>	123/0	123

<u>Code</u>	<u>Description</u>	<u>F/R Wt</u> (lbs)	<u>Tot Wt</u> (lbs)
	: Compatible Tire Sizes: 12R22.5, 295/75R22.5, 295/80R22.5, 315/80R22.5		
28DRN	WHEELS, REAR DUAL DISC; 22.5" Painted Steel, 5 Hand Hole, 10-Stud (285.75MM BC) Hub Piloted, Flanged Nut, Metric Mount, 8.25 DC Rims; With .472" Thick Increased Capacity Disc and Steel Hubs	0/12	12
	<u>Includes</u> : PAINT IDENTITY, REAR WHEELS White		
	<u>Notes</u> : Compatible Tire Sizes: 11R22.5, 12R22.5, 255/70R22.5, 255/80R22.5, 265/75R22.5, 275/70R22.5, 275/80R22.5, 295/75R22.5, 295/80R22.5		
29007	TIRE, SPARE Equal to Model Standard	45/46	91
	<u>Notes</u> : NOTE: Only One Spare Tire per Truck Ordered. Order Must Reflect Number of Tires Required (Including Spare). 10-Digit Tire Code and Spare Rim/Wheel Code Must be Specified.		
7482153208	(4) TIRE, REAR 12R22.5 XZY-3 (MICHELIN) 483 rev/mile, load range H, 16 ply	0/136	136
7652543208	(3) TIRE, FRONT 315/80R22.5 XZY-3 (MICHELIN) 486 rev/mile, load range L, 20 ply	135/0	135
	Services Section:		
40DWD	SRV CONTRACT, EXT ENGINE {2007 & 2010 EPA} To 84-Month/100,000 Miles (160,000 km), 3600 Hours; Includes Engine, Engine Electronics and Injectors; for MaxxFORCE DT & MaxxFORCE 9 Engines	0/0	0
	Total Component Weight:	8601/4934	13535
	Navistar Materials Surcharge- 02/2012	0/0	0
	Spare Rear Tire and Rim (Not Avail via Truck OEM)	0/0	0
	Die-Electric Grease Trans Bulkhead Connector	0/0	0
	SPX Diagnostic Kit w/2-CD-ROM's	0/0	0
	Parts CD-ROM	0/0	0
	Fire Extinguisher & Triangle Kit	0/0	0
	Total Goods Purchased:	0/0	0

The weight calculations included in this proposal are an estimate of future vehicle weight. The actual weight as manufactured may be different from the estimated weight. Navistar, Inc. shall not be liable for any consequences resulting from any differences between the estimated weight of a vehicle and the actual weight.

<u>Description</u>	<u>(USA DOLLAR)</u>	<u>Price</u>
Factory List Prices:		
Product Items	\$118,515.00	
Service Items	\$2,000.00	
Total Factory List Price Including Options:		\$120,515.00
Total Goods Purchased:		\$4,270.00
Document Fee	\$190.00	
Total Preparation And Delivery:		\$190.00
Freight Charge	\$1,850.00	
Total Freight:		\$1,850.00
Total Factory List Price Including Freight:		\$126,825.00
Less Customer Allowance:		(\$36,500.00)
Total Vehicle Price:		\$90,325.00
Total Warranty:		\$425.00
Total Sale Price:		\$90,750.00
Total Per Vehicle Sales Price:		\$90,750.00
Total Net Sales Excluding Taxes:		\$90,750.00
Michigan Title Fee	\$15.00	
Total License, Title:		\$15.00
Net Sales Price:		\$90,765.00

My signature below indicates that I accept the specifications contained herein as written and that I am able approve said specifications for order. Please include proposal number on all correspondence and purchase orders.

Approved by Seller:

Accepted by Purchaser:

Official Title and Date

Firm or Business Name

Authorized Signature

Authorized Signature and Date

This proposal is not binding upon the seller without Seller's Authorized Signature

Official Title and Date