



# CITY of NOVI CITY COUNCIL

**Agenda Item 6**  
**September 12, 2011**

**SUBJECT:** Approval to purchase an International 7400 SBA 6X4 Tandem Axle V-Box Truck from Tri-County International Trucks, Inc., the low bidder, in the amount of \$167,656.

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

**CITY MANAGER APPROVAL:**

<b>EXPENDITURE REQUIRED</b>	<b>\$167,656</b>
<b>AMOUNT BUDGETED</b>	<b>\$225,000 (for tandem axle truck)</b>
<b>LINE ITEM NUMBER</b>	<b>101-442.20-984.000</b>

**BACKGROUND INFORMATION:** The Novi City Council appropriated \$395,000 in late FY2010-2011 for the purchase of two trucks with front plows and underbody scrapers (\$225,000 budgeted for the 7400 SBA 6X4 Tandem Axle V-Box Truck). These funds were part of an overall allocation of \$466,300 for equipment and services (i.e. two push boxes, tractor mounted snow blower, Utility vehicle V-Plow, one single axle truck, one tandem axle truck, GPS based AVL system, and consulting services), to assist DPS crews with snow removal operations by continuing to modernize the fleet.

This new tandem axle truck will supplement the four existing tandem axle dump trucks in the City's fleet. 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, 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 August 30, 2011 one bid was received with three V-box vendor options. 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) 6X4 Tandem Axle V-Box Truck with components from Truck & Trailer, Inc., its supplier.

The procurement of this dump truck results in a savings of \$57,344 (\$225,000 budgeted less the \$167,656 expenditure). Delivery will take place within three to five months (building a truck chassis requires approximately 1.5 months, and equipping a truck with all specialized equipment can take up to another 3.5 months).

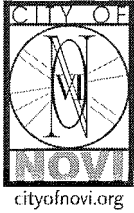
**RECOMMENDED ACTION:** Approval to purchase an International 7400 SBA 6X4 Tandem Axle V-Box Truck from Tri-County International Trucks, Inc., the low bidder, in the amount of \$167,656.

	1	2	Y	N
Mayor Landry				
Mayor Pro Tem Gatt				
Council Member Fischer				
Council Member Margolis				

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

## 2012 International Truck with Stainless Steel V-Box



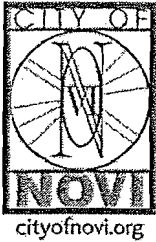


**CITY OF NOVI**  
**TANDEM AXLE V BOX TRUCK, INTERNATIONAL 7400 6X4 S.B.A.**  
**OR EQUIVALENT**  
**August 30, 2011 3:00 P.M.**

This tabulation reflects submittal data by the following companies. However, they have not been evaluated for accuracy of information. Final decision for award will be determined once the evaluation has been completed.

<b>Company</b>	<b>Lump Sum</b>	<b>Year, Make, Model</b>	<b>Truck Equipment</b>	<b>Extend to MITN</b>	<b>Delivery</b>
Tri-County International Truck – Option A	\$184,286	2012 International 7400 6X4	Knapheide Truck Equipment	Yes	45 days for chassis
Tri-County International Truck – Option B	\$167,656	2012 International 7400 6X4	Truck & Trailer Specialties	Yes	45 days for chassis
Tri-County International Truck- Option C	\$170,759	2012 International 7400 6X4	Shults Truck Equipment	Yes	45 days for chassis

OPTION "B" - w/ TRUCK & TRAILER SPECIFICATIONS EQUIP. QUOTE



CITY OF NOVI  
BID FORM

TANDEM AXLE V BOX TRUCK  
INTERNATIONAL 7400 6X4 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. Tandem Axle V Box Truck, per specifications

Lump Sum \$ 167,656.00 EA. UNIT  
Year/Make/Model 2012 INTERNATIONAL 7400 SBA 6x4  
Delivery SEE BID COVER LETTER

Comments: SEE BID COVER LETTER FOR ADD'L. INFO  
\_\_\_\_\_  
\_\_\_\_\_

We acknowledge receipt of the following Addendums: 1 and 2  
(please indicate numbers)

This bid submitted by:

Company (Legal Registration) TRI-COUNTY INTERNATIONAL TRUCKS, INC.  
Address 5701 WYOMING AVE.  
City DEARBORN State MI Zip 48126  
Telephone (313) 584-7890 x2213 Fax (313) 584-5681  
Agent's name (please print) MARK J. CASACCIO  
Agent's Title MUNICIPAL & SEVERE SVC. APPLICATION SPECIALIST  
Agent's signature Mark J Casaccio  
E-mail mcasaccio@tricotruck.com  
Date 08/26/2011

Company Name Tri County



**CITY OF NOVI  
SPECIFICATIONS**

**TANDEM AXLE V BOX TRUCK  
INTERNATIONAL 7400 6X4 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:

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**2. GROSS WEIGHT**

- a. Minimum GVWR 64,000 lbs..

YES, MEETS ALL SPECIFICATIONS  
 NO, DESCRIBE DEVIATIONS:

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**3. CHASSIS - INTERNATIONAL 7400 6X4 S.B.A.**

- a. Shall be the latest production model, conventional cab, 7400 SBA 6X4 series, with a cab to axle dimension of 138 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.

- 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. V-body, hoist, 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:

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#### 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 highback 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.

- 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 exceed cab height by more than 4 inches

YES, MEETS ALL SPECIFICATIONS  
 NO, DESCRIBE DEVIATIONS:

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**5. ENGINE**

- a. International MaxxForce 9, Diesel, minimum 310 HP, and 950 lb-ft Torque @ 2,200 RPM, 2,400 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 hook 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. Provide Aluminum 1588 sq in Radiator with 885 sq in charge air cooler.
- i. Silicone hose package, radiator and heater hoses.
- 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:

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**6. FLUID LEVELS**

- 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:

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**7. TRANSMISSION**

- a. Allison Electronic 3500 RDS 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:

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**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 Kelsey Hayes 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 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.
- \*- q. Furnish and install one (1) Star Strobe Light System consisting of (2) Star Warning Model #3901-A Convert-A-Strobe heads mounted in front of OEM turn signals with sealed wiring and connectors, all lights to be self-powered.
- \*- r. Furnish and install (2) Star Model LDHEF Amber (LED) Strobe Heads on vertical rear corner braces intermediately spaced (one on each side) with plastic boxes.
- \*- s. Furnish and install (2) Star Model LDHEF Amber (LED) Strobe Heads in Cab Guard, intermediately spaced (one on each side)
- \*- t. Furnish electrical adapter to step down 7 conductor socket to 6 conductor sockets.
- \*- u. Crossover wiring harness shall be installed on 2<sup>nd</sup>. Underbody cross member forward of rear most cross member.
- v. Auxiliary Harness front Head Lights and turn signals for front plow application.

YES, MEETS ALL SPECIFICATIONS CHASSIS APPLICABLE ITEMS.  
 NO, DESCRIBE DEVIATIONS:

\* - DENOTES BODYBUILT SUPPLIED ITEMS.

**9. FRONT AXLE, SPRING, AND STEERING**

- a. Axle capacity not less than 20,000 lbs. set back
- b. Spring capacity not less than 10,000 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 tandem axle power divider pump, inter-axle differential, Gear ratio: 5:86
- ✓ b. Provide Meritor MT-40-14X 40,000lb rated tandem rear axle.
- c. Provide Bendix 4S-4M anti-lock brake control with traction control.

- d. Axle capacity not less than 46,000 lbs.
- e. 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 5:86
- f. Suspension capacity not less than 46,000 lbs. at ground, Hendrickson Rubber Load Cushion Suspension.
- g. Magnetic drain plug.
- h. Driveline – To be equipped with Spicer Lifeline Series Driveline to match torque requirements.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

NOTE: AXLE AS SPECIFIED (40K) 46K REAR SUSPENSION  
AS SPECIFIED PER CHRIS QUICK

**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"
- 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 9)
- c. Hub piloted disc wheels, 10 stud – 22.5 x 8.25. (Qty 9) rear & front 12.25/DCQty 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 Phillips & Temro Model V-3000 V-body vibrator.
- \* - e. Furnish and install ½" thick rubber mud flaps with anti-sail feature behind rear tires secured to fender understructure.
- \* - f. Furnish and install 381NPXD392 pintle hook on reinforcement structural steel channel rear of truck frame, per Fleet Manager's direction.
- g. 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. \*
- h. Furnish and install Preco 1040 back-up alarm.
- \* - i. Furnish and install license plate frame and light.
- j. Furnish safety items, flares, triangle reflector kit and 5 lb fire extinguisher.
- k. Two service manuals covering truck and chassis, added auxiliary equipment, and all other components included in these specifications that require testing, adjustment, part replacement, and periodic preventive maintenance. 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.
- l. 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.
- m. 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.
- n. 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.
- o. 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:

NO PAPER MANUALS - CD-ROM ONLY. MASTER DIAGNOSTIC'S  
REPLACED BY SPX - YOU ALREADY HAVE THE KIT  
 \* = DENOTES BODYBUILT/REAR SUPPLIED ITEM.

#### 14. SPECIFICATIONS FOR V BODY

- a. Install 12 ft Chassis mounted stainless steel V box with a liquid capacity of not less than 360 gals, and 7.9 yards of salt capacity.
- b. 84" outside hopper width.
- c. Furnish and install 2 inch female cam lever coupling for filling liquid tanks.
- d. Dual 7" augers.

**CITY OF NOVI  
TANDEM AXLE V BOX TRUCK  
INTERNATIONAL 7400 6X4 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](http://www.mitn.info) website to view the entire list of participating agencies.

If an award is made to CITY OF NOVI, 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.


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 opportunities.

If an award is made to CITY OF NOVI, 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.

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: TRI-COUNTY INTERNATIONAL TRUCK  
Date: 08/29/2011

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

**City of Novi**

**Plow Equipment bid for tandem axle**

**Install 12' Monroe MSC-144-84-56 Dual Auger V-Box Spreader with Pre wet system, and single lane anti ice system including the following:**

- 7.9 yard capacity
- 144" (12') hopper length
- 84" outside hopper width
- 10 a. 201 stainless hopper sides and ends
- 7 ga. 201 stainless longills
- Vertical side braces; stainless steel
- Side braces spaced to accommodate two 180 gallon liquid tanks and two 75 gal liquid tanks for a total of 510 gal
- 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
- 23 gpm closed loop prewet and anti ice system pump. Capable of 40 gal./mile at 35 MPH
- Nozzle kit, bulk fill kit, flush kit

**Install Spray Mate Poly Fender kit including all necessary mounting brackets for tandem 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

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

Adjustable j-50 relief valve is included  
Cushion valve for power reverse circuit is included

**Install 34" Hustling 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

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

**Install Force America 5100 Spreader controller including the following**

LCD display  
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 frame for future hitch with 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 ½" x 4" tapered, one piece, flame cut ribs,  
2" x 3" x 3/8" top angle, 4" x 4" x ¾" bottom angle,  
horizontal moldboard angle bracing,  
¼" 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.

**Installed \$72,864.00**

**Options**

Install Cougar Box vibrator model DC3200 on V box sander

**Add \$ 979.00**

Install PH20 pintle hook with D rings (hitch mounting plate is included in the main part of the bid proposal)

**Add \$ 65.00**

(INCLUDED IN BASE PRICING)



Truck & Trailer Specialties

6726 Hanna Lake

Dutton, Mi. 49316

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

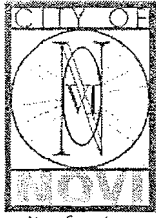
Install Electronic Brake controller

Add \$ 247.00

(INCLUDED IN BASE PRICING)

Submitted by Dan Bouwman/Tom Giles

08/26/11



cityofnovi.org

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

CITY OF NOVI  
SPECIFICATIONS

TANDEM AXLE V BOX TRUCK  
INTERNATIONAL 7400 6X4 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 64,000 lbs..

\_\_\_\_ YES, MEETS ALL SPECIFICATIONS

\_\_\_\_ NO, DESCRIBE DEVIATIONS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. CHASSIS - INTERNATIONAL 7400 6X4 S.B.A.

- a. Shall be the latest production model, conventional cab, 7400 SBA 6X4 series, with a cab to axle dimension of 138 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.

- 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. V-body, hoist, 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  
Truck &  
Trailer  
Apparatus*

\_\_\_ YES, MEETS ALL SPECIFICATIONS  
\_\_\_ NO, DESCRIBE DEVIATIONS:

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#### 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 highback 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.

- 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 exceed cab height by more than 4 inches

\_\_\_ YES, MEETS ALL SPECIFICATIONS

\_\_\_ NO, DESCRIBE DEVIATIONS:

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**5. ENGINE**

- a. International MaxxForce 9, Diesel, minimum 310 HP, and 950 lb-ft Torque @ 2,200 RPM, 2,400 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 hook 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. Provide Aluminum 1588 sq in Radiator with 885 sq in charge air cooler.
- i. Silicone hose package, radiator and heater hoses.
- 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:

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**6. FLUID LEVELS**

- 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:

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**7. TRANSMISSION**

- a. Allison Electronic 3500 RDS 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:

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**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 Kelsey Hayes Brake Controller.

*optional  
Truck & Trailer.*

- 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 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.
- q. Furnish and install one (1) Star Strobe Light System consisting of (2) Star Warning Model #3901-A Convert-A-Strobe heads mounted in front of OEM turn signals with sealed wiring and connectors, all lights to be self-powered.
- r. Furnish and install (2) Star Model LDHEF Amber (LED) Strobe Heads on vertical rear corner braces intermediately spaced (one on each side) with plastic boxes.
- s. Furnish and install (2) Star Model LDHEF Amber (LED) Strobe Heads in Cab Guard, intermediately spaced (one on each side)
- t. Furnish electrical adapter to step down 7 conductor socket to 6 conductor sockets.
- u. Crossover wiring harness shall be installed on 2<sup>nd</sup>. Underbody cross member forward of rear most cross member.
- v. Auxiliary Harness front Head Lights and turn signals for front plow application.

*see  
 Addendum*

\_\_\_ YES, MEETS ALL SPECIFICATIONS

\_\_\_ NO, DESCRIBE DEVIATIONS:

*Brake Controller optioned*  
*See Addendum for Emergency lighting*

**9. FRONT AXLE, SPRING, AND STEERING**

- a. Axle capacity not less than 20,000 lbs. set back
- b. Spring capacity not less than 10,000 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 tandem axle power divider pump, inter-axle differential, Gear ratio: 5:86
- b. Provide Meritor MT-40-14X 40,000lb rated tandem rear axle.
- c. Provide Bendix 4S-4M anti-lock brake control with traction control.

- d. Axle capacity not less than 46,000 lbs.
- e. 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 5:86
- f. Suspension capacity not less than 46,000 lbs. at ground, Hendrickson Rubber Load Cushion Suspension.
- g. Magnetic drain plug.
- h. Driveline – To be equipped with Spicer Lifeline Series Driveline to match torque requirements.

\_\_\_\_ YES, MEETS ALL SPECIFICATIONS  
\_\_\_\_ NO, DESCRIBE DEVIATIONS:

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**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"
- 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:

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**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 9)
- c. Hub piloted disc wheels, 10 stud – 22.5 x 8.25. (Qty 9) rear & front 12.25/DCQty 3)

\_\_\_\_ YES, MEETS ALL SPECIFICATIONS  
\_\_\_\_ NO, DESCRIBE DEVIATIONS:

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**13. MISCELLANEOUS EQUIPMENT**

- a. Rear tow hooks mounted to frame, (1) pair.

*optioned*  
*optioned* →

- 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 Phillips & Temro Model V-3000 V-body vibrator.
- e. Furnish and install ½" thick rubber mud flaps with anti-sail feature behind rear tires secured to fender understructure. *(Pay Fenders Included)*
- f. Furnish and install 381NPXD392 pintle hook on reinforcement structural steel channel rear of truck frame, per Fleet Manager's direction.
- g. 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.
- h. Furnish and install Preco 1040 back-up alarm.
- i. Furnish and install license plate frame and light.
- j. Furnish safety items, flares, triangle reflector kit and 5 lb fire extinguisher.
- k. Two service manuals covering truck and chassis, added auxiliary equipment, and all other components included in these specifications that require testing, adjustment, part replacement, and periodic preventive maintenance. 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.
- l. 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-Ram and paper type. Also Master Diagnostic's software – ZTS4463-4 and IC3 Com interface cable ZTSE 4632.
- m. 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.
- n. 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.
- o. 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:

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**14. SPECIFICATIONS FOR V BODY**

- a. Install 12 ft Chassis mounted stainless steel V box with a liquid capacity of not less than 360 gals, and 7.9 yards of salt capacity.
- b. 84" outside hopper width.
- c. Furnish and install 2 inch female cam lever coupling for filling liquid tanks.
- d. Dual 7" augers.



- e. 10 a. 201 stainless steel hopper sides and ends.
- f. 7 ga. 201 stainless longsills
- g. Vertical side braces; stainless steel *Two*
- h. Side braces spaced to accommodate ~~four~~ *Two* 180 gallon liquid tanks. *+ 2 75 gal 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.

YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

*Two 180 gal Liquid Tanks + 2 75 gal Tanks.*  
*All other Items Comply.*

15. UNDER-TRUCK SCRAPER SPECIFICATIONS

- a. Hangerboard - minimum 10" X 30 lb. structural channel *Formed 1/2" plate* reinforced by 1/2" x 8" plate and 4" Ship&Car 13.8# channel 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:

*Scraper Hangerboard is constructed of 1/2" formed plate with 1/2" reinforcements. All other items comply.*

16. CENTRAL HYDRAULIC SYSTEM OR EQUIVALENT

- a. Rexroth A10V100DFR piston pump - 6.0CID. *Force FHS045L*
- 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. Rexroth 7M4-12 valve with the following: *Force Add-A-Fold.*
  - 4 way air controlled section for scraper with LS relief for down pressure.

*Electric/Hydraulic Actuators*

- 4 way air controlled section for scraper swing.
  - 4 way air controlled section for front plow.
  - 4 way air 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. Pneumatic joystick controller armrest compatible. *Force Command All*
- 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.

X YES, MEETS ALL SPECIFICATIONS

NO, DESCRIBE DEVIATIONS:

Pump is Force FASD45L - 6.0 CID

Valve is Force Adde-6 - STACK

Joystick is Force Command All

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

- o Current cumulative spreader information including material weight and volume, distance, and time for each material and operation mode
    - o Error log in plain text to include the last 125 errors associated with the spreader control including the date and time of each error
    - o Truck battery voltage
    - o 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:

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**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:

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**19. Fuel/Hydraulic combination tank behind the cab:**

- a. 120 gal fuel capacity/30 gal oil capacity.
- 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. Choice of valve enclosure built into the fuel tank or a separate frame mounted stainless steel valve enclosure.

YES, MEETS ALL SPECIFICATIONS  
 NO, DESCRIBE DEVIATIONS:

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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 flood 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.

YES, MEETS ALL SPECIFICATIONS  
 NO, DESCRIBE DEVIATIONS:

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

- a. Moldboard (tapered): 11' long on top (49" height at rear, 30" height at nose, 8'2" width of cut at 35 degrees, six (6) 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, 1/2" x 6" x 10' 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 <sup>Husting Type</sup> 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.

5 vertical Ribs  
 Cutting Edge is 7/8" x 8' x 11'

47 Not including Cutting Edge

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

- 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:

Plow is Monroe MPFA 30-47-11 CT - Not Root

22. **Exceptions Disclosure. Must be supplied with your bid**

YES, our bid meets or exceeds all specifications.

Exceptions listed on Enclosed sheets

NO, our bid does not meet all specifications (please attach deviations to this specification).

23. **Local Service Support**

- A. The successful bidder 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.



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

CITY OF NOVI  
TANDEM AXLE V BOX TRUCK  
INTERNATIONAL 7400 6X4 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](http://www.mitn.info) website to view the entire list of participating agencies.

If an award is made to City of Novi - Equipment, 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.

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 opportunities.

If an award is made to City of Novi, 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.

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: Truck & Trailer Specialties, Inc *Daniel Brown*  
Company Name: Equipment only.  
Date: 8/26/11