



CITY of NOVI CITY COUNCIL

**Agenda Item 3
January 9 2017**

SUBJECT: Approval to award the bid of \$174,994 to Truck & Trailer Specialties on chassis upgrades and two swap loader attachments (V-box spreader & Dump body).

SUBMITTING DEPARTMENT: Department of Public Services- Fleet Division *GDM*

CITY MANAGER APPROVAL: *PR*

EXPENDITURE REQUIRED	\$ 174,994.00
AMOUNT BUDGETED	\$ 179,630.00
APPROPRIATION REQUIRED	\$ N/A
LINE ITEM NUMBER	101-442.20-984.006 - \$114,994.00 592-592.00-984.006 - \$60,000.00

BACKGROUND INFORMATION:

This tandem axle swap loader will replace #699, a 2000 model year tandem axle dump truck that is in poor condition.

The approval for up-fitting the chassis will allow the tandem axle to be used year round for multiple projects for both Field Operations & the Water & Sewer divisions. Each part of the up-fitting is designed for the chassis to have different operations benefits that include the swapping out of swap loader attachments.

All of the up-fits to the chassis were obtained by bids received by the city of Novi.

RECOMMENDED ACTION: Approval to award the bid of \$174,994 to Truck & Trailer Specialties on chassis upgrades and two swap loader attachments (V-box spreader & Dump body).

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

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

CITY OF NOVI
CHASSIS UPGRADES & SWAPLOADER ATTACHMENTS (FOR TANDEM AXLE)
WEDNESDAY, NOVEMBER 9, 2016 2:00 P.M.

Company	Truck & Trailer Specialties	Valley Truck Parts
A. CHASSIS UPGRADES (Items 1 - 16) (lump sum)	\$ 113,804.00	\$ 196,980.60
B. BASE ATTACHMENTS		
#1 - V-box Spreader (each)	\$ 39,093.00	\$ 34,040.00
#2 - Dump Body (each)	\$ 21,657.00	\$ 23,210.00
#3 Anti-Ice Tank (each)	\$ 22,133.00	\$ 23,710.00
#4 - 14' Flatbed Stake Rack (each)	\$ 11,007.00	\$ 13,832.00
Option 1: Rustproofing (each)	\$ 240.00	\$ 985.00
Option 2: Demonstration of system operation (each)	\$ 200.00	\$ -
TOTAL	\$ 208,134.00	\$ 292,757.60
Delivery	270-300 days ARO	May 15, 2017. Delivery contingent upon receiving truck at Valley Truck Parts within 100 days of signing contract.
Addenda acknowledged	N/A	N/A

Truck & Trailer Specialties



CITY OF NOVI

CHASSIS UPGRADES & SWAPLOADER ATTACHMENTS

BID FORM

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

A. CHASSIS UPGRADES #1 - 16 \$ 113,804.00 Lump Sum

B. BASE ATTACHMENTS:

#1 - V-box Spreader \$ 30,093.00 each

#2 - Dump Body \$ 21,657.00 each

#3 - Anti-Ice Tank \$ 22,133.00 each

#4 - 14' Flatbed Stake Rack \$ 11,007.00 each

Option #1: Rustproof top of floor in cab, remove Floor mat and install rustproofing \$ 240.00 each

Option #2: Demonstration of system upon delivery \$ 200.00 each

Delivery 270-300 days ARO

We acknowledge receipt of the following Addenda: n/a
(please indicate numbers)

EXCEPTIONS TO SPECIFICATIONS: All exceptions must be clearly indicated in bid.

COMMENTS: Minor exceptions noted at bottom of formal quote:
Dump Body: Side height on the dump body is 36" at front and at the rear
Anti-Ice Unit: The flow meter is a Raven-type flow meter. Not a Hido Trak.

NON-IRAN LINKED BUSINESS

By signing below, I certify and agree on behalf of myself and the company submitting this proposal the following: (1) that I am duly authorized to legally bind the company submitting this proposal; and (2) that the company submitting this proposal is not an "Iran linked business," as that term is defined in Section 2(e) of the Iran Economic Sanctions Act, being Michigan Public Act No. 517 of 2012; and (3) That I and the company submitting this proposal will immediately comply with any further certifications or information submissions requested by the City in this regard.

THIS BID SUBMITTED BY:

Company (Legal Registration) Truck + Trailer Specialties, Inc.

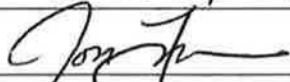
Address 1200 Victory Drive

City Howell State MI Zip 48843

Telephone (855) 710-3855 Fax (517) 552-3866

Representative's Name JON LUEA

Representative's Title Sales Representative

Authorized Signature 

E-mail JLUEA@TTSPEC.COM

Date 11/7/16

TRUCK & TRAILER Specialties, Inc.

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November 2, 2016

City of Novi
45175 Ten Mile Road
Novi, MI 48375-3024

Truck Equipment Bid Quotation



Chassis: 2017 International 7600 SBA 6x4 2010, Tandem Axle, CT: 138"

Contact: Mark Caracciolo, (586) 222-2940

Bid Opening: November 9, 2016 at 2:00 PM

Install SwapLoader Hooklift hoist model #SL-412 including the following:

40,000 pounds dumping and lifting capacity with gross weight evenly distributed in and/or on container/body

Hooklift shall be able to handle skid-mounted containers/bodies with lengths of 12-15 feet

Hooklift shall have a minimum of 60 degree dump angle

Skid-mounted containers/bodies shall be supported with a pair of 6 1/4" minimum diameter outside flanged rollers at the rear of the hoist, and be adjustable to accommodate bodies/containers with outside subframe rail widths of 40-1/2" or 41-5/8"

Hooklift operation:

The lift shall adjust weight distribution of the container/body horizontally on the chassis while remaining in the body locks and without lifting the container/body rails off the hoist frame
Hooklift has a dual rear pivot section incorporated into the hoist design to allow for both a true dump truck operation, with the container/body secured to the hooklift via body locks during the entire dump cycle, and increased mounting leverage at the beginning of the container lift cycle
Hooklift jib to reach rearward to the A-frame lifting bar by means of double articulating hinge points (dual rear pivot) incorporated into the hoist mechanism

All lift sections shall lock into a common rigid full-length frame to support the body/container when in a dump mode. This must be accomplished by mechanical operated latches, which lock the mast

It has a jib lockout valve to prevent jib operation while in dump mode

Hydraulic cylinders:

Dump/lift cylinders are double acting, twin cylinders, sized for the unit capacity with dual integral counterbalance valves. Dump/lift cylinders are 6" bore, 3" rod diameter and 56" stroke

Telescopic jib cylinder shall be double acting, single cylinder, sized for unit capacity with a single counterbalance valve. Jib cylinder to be a 4" bore, 2 1/2" rod diameter and 30" stroke

Hydraulic operating pressure will not to exceed 3600 PSI

Mainframe design:

The mainframe of the hoist is constructed of a "Z" rail configuration

The "Z" rail mainframe is to be a maximum of 10 1/2" in height and constructed of 1/4" thick A572 50 KSI steel

Hoist "Z" frame rails to include 6 (or 3 per side) 11-3/4" x 2-3/4" x 1/2" Nylatron wear pads for container/body support

The Nylatron pad will allow the containers/bodies to slide back and forth horizontally on the "Z" rail of the hoist with ease

Jib hook design:

Vertical Jib is constructed of a 9" x 9" x 1/2" wall square tube of A500 50 KSI steel

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Jib hook height is adjustable to either 53-7/8" or 61 3/4" from the bottom of the container/body subframe rails to the bottom of the A-frame lift bar

Hooklift warranty:

The complete mechanism, including hydraulics, will be factory warranted free of defects in material and workmanship for a period of forty-eight (48) months on parts, and twelve (12) months on labor from the date of installation

Install ProTech stainless steel fenders for tandem axle chassis including the following:

Fenders shall be constructed of 14 ga minimum 304 or 403 polished stainless steel

Stainless steel mounting brackets at the front and at the rear

The fender kit shall include a mounting bracket between the drives that joins two single radius 1/2 fenders so that when assembled the fenders are a double radius fender covering both front and rear drive tires

Flaps mounted at the front and at the rear of the fenders on rear axles

Install Monroe model 4512 Underbody Scraper including the following:

Moldboard is grade 50, hi-tensile steel, not heat-treated

All cylinder rods are Socatri-type, not nitrated

Replaceable trunnions

Piloted center bolt into hangerboard

Grease line kit is included

Cushion valve and j-50 relief valve included

Proximity switch for scraper position indication

Install 4" grip-strut scraper step, not bar grating, installed raised with step material

Install Kennametal single-insert carbide cutting edges

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

Installed roller pins, rollers mounted to hitch frame base

Front tow hooks to be mounted on frame with bumper cut-outs

Two expanded metal front bumper steps driver and passenger side

Expanded metal traction strip placed across the top of the front bumper

Chain box to be mounted on the driver's side of the front bumper

Install Fuel/Oil/Valve Enclosure Combination tanks including the following:

120 gallon fuel oil capacity, 35 gallon hydraulic oil capacity

Fuel/hydraulic tank/valve enclosure is 7 ga. type 201 stainless steel construction

Hydraulic valve enclosure built into left side of tank

Valve enclosure to have a weather tight door

Low-oil sensor in hydraulic tank and wired to a low oil shutdown system

Top of the tank Zinga-type, tank-mounted return line filter

Ball valve shutoff on case drain and supply ports

Sight and temperature gauge

Install 3-step egress & platform from streetside fender to combination reservoir tank

Step assemblies shall be painted red to match cab

Hydraulic tank will be full of AW32 hydraulic oil

"Fuel" and "Hydraulic Oil" stickers shall be installed on the tank

Install Central Hydraulic System including the following:

Force FASD45L piston pump – 6.0 CID

Front pump mounting bracket

Pump flange

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Low-oil shutdown block with override controls

Monroe-type low-oil sender in tank

Spicer drive line

Valve assembly is Force America Add-a-Fold with the following sections:

4 way EPC section for Hoist

4 way EPC section for Jib

4 way EPC section for Scraper with relief for down pressure

4 way EPC section for Scraper swing

4 way EPC section for Front Plow

4 way EPC section for Front Plow swing

4 way EPC section for Wing Plow

4 way EPC section for Pre-wet/Anti-Ice

3 way EPC section for Auger

3 way EPC section for Spinner

Force America CommandAll controller armrest compatible

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

Return line manifold

Install Control Center including the following:

Force America CommandAll controller SPJC Ultra series with a 6100 model spreader

The electronic controller shall be a single-handle design with a minimum of three miniature fully-proportional joysticks in the head of the handle to operate all cylinder functions

The primary joystick handle head shall include LED-backlit momentary push buttons for activation of remote standby and remote blast

The electronic spreader control shall be designed for precise, closed-loop control of granular and pre-wet liquid applications and operate on a CAN Bus protocol

The spreader control interface shall have two, color-coded, continuous rotation encoders for granular and spinner control

The spreader control display shall be a remotely-mounted, 7" diagonal color TFT LCD, with a low-profile 16:9 widescreen format and minimum of 800 x 480 pixel resolution

The operator menus shall be color-coded to match the encoder knobs on the operator interface

A proportional PWM driver and input module (Valve Module) shall be remotely mounted inside the hydraulic valve enclosure for control of both spreader control and joystick control outputs

Truck diagnostic calibration shall be completed prior to delivery

Supply one USB for firmware and Storing calibration data

Install Custom Chassis Lighting & Electrical including the following:

Three-hole, 6" oval, stainless steel light bars shall be mounted to the chassis just behind the fender on each side of the chassis including:

One (1) SoundOff LED Amber flasher mounted in each rear light box

One (1) SoundOff LED STT light mounted in each rear light box

One (1) SoundOff LED backup light mounted in each rear light box

LED marker light kit

One (1) Star model 9018LED-Amber/Green mini lightbar cab roof-mounted on a riser

Two (2) Weldex flood lights at rear

Two (2) Weldex scrapers lights, one each side

One (1) Weldex light for wing operation

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Plow lights and aluminum plow light brackets mounted on hood
Two (2) Whelan Micro Amber 6 LED Vertex part 3 01-0268715-10A self-powered,
mounted in front plow light bracket forward-facing, one on each side
Betts junction box and related wiring
Install Preco 1040 back-up alarm

Controls, Switches and Disconnects including the following:

OEM chassis and CommandAll switches shall control the emergency & work lighting

Chassis switches for the following:

- Scraper work lights
- Spreader work lights
- Wing work lights

Console switches for the following:

- Tarp in/out
- Air-tailgate

CommandAll programmable switch assembly installed for the following:

- Low-oil pump override
- Front flashers
- Rear flashers
- Spreader on/off
- Jib/Hoist & Wing on/off

Couplers for attachments shall be located behind the cab

An electrical plug for attachment lighting shall be located behind the cab and at the rear of the chassis for attachment hook up

Granular feedback as well as pre-wet shall be included in a disconnect mounted behind cab

Air controls for air trip tailgate shall be located at the rear of the chassis just behind fenders

The tarp system controls shall be wired to the rear of the chassis just behind the fenders and shall include a two-terminal electrical plug

Install Monroe model MJW-7' Mid-mounted 7' Junior Wing; parallelogram-type wing including the following:

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

Safety chain shall be installed for transport at any adjusted angle

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 is parallelogram design and shall mount directly ahead of the drive tire

Rear push arm is to be equipped with a 6" cushion spring

Hydraulic circuit for the wing shall be equipped with a sequencing valve for proper operation of the wing

Sequencing valve shall have built in, manually adjustable flow controls

Wing is to be equipped with stainless steel 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 at any adjusted angle

Install single stainless steel light box mounted on the end of the wing with a Buyers split

Green/Amber flashing light and LED marker light front-facing

Install recycled tire cutting edge with a carbide D-type curbguard

Install double-reinforced 1/2" thick rubber snow deflector

Proximity switch for wing position indication

Install Monroe model MP36R11-ISCT Snow Plow with mailbox trim on right-end including the following:

Integral shield style moldboard

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Roller kit for the front plow
Screw adjustable skid shoes to be mounted on the plow
A rubber snow shield to be mounted across the top of the plow
Blade guides
34" Husting plow-portion hitch

Install ¾" rear hitch plate and 20-ton pintle hook including the following:

The hitch plate is to have multiple holes for adjustment height of pintle hitch
There shall be two (2) ¾" D-rings welded on each side for tow chains
The rear hitch shall have support bracing welded for extra strength and stability
Electric plug 7-way
License plate frame and light

The pintle hitch should be model PH-20, mounting height TBD

Install RoadWatch Kit for Force America 6100 including the following:

RoadWatch road temperature sensor mounted on mirror & display mounted in-dash
Sensor cables for connecting to Force America 6100 spreader controller
Includes mounting, necessary wiring and installation

Install Fire Extinguisher and Triangle Kit

Install Conspicuity Tape as necessary on chassis and attachments

Install Electric Brake Controller

Install Flaming River Electrical Shutdown including the following:

3-minute timed delay
Enclosure with LED indicator light

Above installed and non-stainless steel painted: \$113,804.00 ea.

Base Attachment #1

V-box Spreader

Install Skid-mounted Monroe MCV-168-84-62 Dual Auger Combination Spreader including the following:

53-7/8" hook and skid assembly
Rollers at the end of the skid assembly
Skid assembly will be hot-dip galvanized
10 gauge 201 stainless steel hopper
45 degree sloped sides with 2" double crimped top edge
7 gauge 201 stainless steel longitudinals tied together with 3" formed channel cross-sills
Dual 7" auger conveyor system with planetary gearbox drive system
Integral speed sensor in one auger motor
Inverted-V installed over augers; 201 stainless
Front bearing grease extensions to rear
Auger units include a top-grate kit with lock-down provisions
Hopper length is 168 inches
Hopper width is 84 inches
Hopper height is 62 inches
Stainless steel hopper and spinner construction
Side-mount stainless steel fold-up ladder, driver-side
Tip-up rear adjustable spinner assembly, 201 stainless, poly disc
Right-hand stainless steel winch kit with brake for tip-up assembly

Install Pre-Wet System including the following:

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Twin 125 gal tanks
Remote vent kit for liquid tanks
Bulk fill and flusher kit
Crossover hose kit
7 GPM pre-wet pump with Dickey-John application rate sensor
Pre-wet spray tube installed in auger trough
Install all necessary supports and brackets
Install stainless steel pipe kit from the rear of the spreader to the front of the spreader and equip with stainless couplers for the auger, spinner and pre-wet circuits
LED marker light kit installed on the V-box spreader
Install two-hole 6" oval stainless steel light bar mounted at rear on each side for Star Amber & Star Green LED flashers with alternating flashing pattern
Install single-hole stainless steel light box at rear on each side for SoundOff STT light
Wire circuits to the front of the body for accessory lighting and application rate sensors
Install Betts junction box at the rear of the body
Install City-supplied "green warning triangle" at rear of V-box

Base Attachment #1 installed pricing: \$30,093.00 ea.

Base Attachment #2

Dump Body

Install Skid-mounted Crysteel Select 14' Stainless Steel Dump body including the following:

53-7/8" hook and skid assembly
Body sides and ends are constructed of 7 gauge type 201 stainless steel
84" wide body
Tailgate height is 46"
Side height at the rear is 36"
Western understructure with a SwapLoader skid assembly longitudinal
Body floor is 3/4" AR450
Air-operated tailgate with screw latch lock
Install turnbuckles in tailgate
Tailgate is 9-panel construction with 2 intermediate horizontal braces and 2 vertical intermediate braces and a boxed perimeter
12" cabshield constructed of 10 gauge stainless steel is included
Dump body sides and ends will be unpainted type 201 stainless steel
Body longitudinal and bottom of floor will be painted black
Rollers installed at the rear of the skid
3-hole tapered stainless steel light wedge boxes mounted on rear pillar posts:
Driver-side 3-hole top-to-bottom Star green, SoundOff STT, Star amber
Passenger-side 3-hole top-to-bottom Star amber, SoundOff STT, Star green
*Flashers hooked up to wig-wag corner to corner
LED body marker lights
Install Betts junction box at the rear of the body
Wire to plug assembly at the rear of the dump body light and tarp disconnect
Install Roll-Rite model 64000 tarp system including electrical disconnect kit
Includes aluminum tarp and tension bows
Wire to plug assembly at the rear of the dump body with plug
Mesh-type tarp cover included

Base Attachment #2 installed pricing: \$21,657.00 ea.

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Base Attachment #3

Anti-Ice Tank

Install Skid-mounted Tank assembly including the following:

- 53-7/8" hook and skid assembly
- Rollers at the end of the skid assembly
- Skid assembly will be hot-dip galvanized
- 2350 gal tank with a 1.7 rated specific gravity
- Tank includes center wall baffle system
- Install agitation kit with eductor nozzles
- 3-lane, closed loop, non-tiered plumbing kit
- 190 gpm centrifugal pump with hydraulic motor (Needs 12 gpm for proper operation)
- Micro-Trak flow meter
- Three-lane electric boom valves
- Three-lane stainless steel wet booms with streamer nozzles; telescoping mount
- Plumb hydraulic circuit from the rear to the left front corner of the skid for hookup and disconnect just behind the cab
- Wire boom valve circuit, flow meter circuit and lighting circuit from rear of skid to left front corner of the skid for hook up just behind the cab
- Ball valve shutoff on the supply port
- Install two-hole stainless steel light box mounted at rear on each side for Star Amber & Star Green LED flashers with alternating flashing pattern
- Install single-hole stainless steel light box at rear on each side for SoundOff STT light
- Wire circuits to the front of the body for accessory lighting
- Install Betts junction box at the rear of the body

Base Attachment #3 installed pricing: \$22,133.00 ea.

Base Attachment #4

Flatbed

Install 14' Flatbed Stake Rack body including the following:

- 53-7/8" hook and skid assembly
- Steel drum rollers at the end of the skid assembly
- 96" wide flatbed includes a 3/16" tread plate deck
- 4" structural C-channel cross members on 12" centers
- 6" structural C-channel outside rail with stake pockets and outside tie rail
- 52" front bulkhead with knee braces
- Windows built into bulkhead with expanded metal screens
- 50" stake rack sides and rear
- LED body clearance lights
- Body is sandblasted and painted black
- Removable stake racks and bulkhead are powder-coated black

Base Attachment #4 installed pricing: \$11,007 ea.

Option #1 Rustproof top of floor in cab, remove floor mat and install rustproofing

Option #1 add: \$ 240.00 ea.

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Option #2 **Demonstration of system upon delivery**
Option #2 add: **\$ 200.00 ea.**

Payment Terms: Net 30. Pricing effective for 90 days.

FOB: City of Novi

Delivery: 270-300 days ARO

Exceptions

Dump body: Side height on the dump body is 36" at the front and at the rear

Anti ice unit: The flow meter is a Raven type flow meter. Not a Micro Trak.

Thank you for the opportunity to quote.

Respectfully submitted by,
Jon Luea/Dan Bowman



CITY OF NOVI
CHASSIS UPGRADES & SWAPLOADER ATTACHMENTS
SPECIFICATIONS



Chassis: 2017 International 7600 SBA 6x4 2010, Tandem Axle, CT: 138" (already on order)

All brands and models are to be bid as specified. No substitutions.

A. CHASSIS UPGRADES

1. Install SwapLoader Hooklift hoist model #SL-412 including the following:

- a. 40,000 pounds dumping and lifting capacity with gross weight evenly distributed in and/or on container/body
- b. Hooklift shall be able to handle skid-mounted containers/bodies with lengths of 12-15 feet
- c. Hooklift shall have a minimum of 60 degree dump angle
- d. Skid-mounted containers/bodies shall be supported with a pair of 6 1/4" minimum diameter outside flanged rollers at the rear of the hoist, and be adjustable to accommodate bodies/containers with outside subframe rail widths of 40-1/2" or 41-5/8"

Hooklift operation:

- a. The lift shall adjust weight distribution of the container/body horizontally on the chassis while remaining in the body locks and without lifting the container/body rails off the hoist frame
- b. Hooklift has a dual rear pivot section incorporated into the hoist design to allow for both a true dump truck operation, with the container/body secured to the hooklift via body locks during the entire dump cycle, and increased mounting leverage at the beginning of the container lift cycle
- c. Hooklift jib to reach rearward to the A-frame lifting bar by means of double articulating hinge points (dual rear pivot) incorporated into the hoist mechanism
- d. All lift sections shall lock into a common rigid full-length frame to support the body/container when in a dump mode. This must be accomplished by mechanical operated latches, which lock the mast
- e. It has a jib lockout valve to prevent jib operation while in dump mode

Hydraulic cylinders:

- a. Dump/lift cylinders are double acting, twin cylinders, sized for the unit capacity with dual integral counterbalance valves. Dump/lift cylinders are 6" bore, 3" rod diameter and 56" stroke
- b. Telescopic jib cylinder shall be double acting, single cylinder, sized for unit capacity with a single counterbalance valve. Jib cylinder to be a 4" bore, 2 ½" rod diameter and 30" stroke
- c. Hydraulic operating pressure will not to exceed 3600 PSI

Mainframe design:

- a. The mainframe of the hoist is constructed of a "Z" rail configuration
- b. The "Z" rail mainframe is to be a maximum of 10 ½" in height and constructed of 1/4" thick A572 50 KSI steel
- c. Hoist "Z" frame rails to include 6 (or 3 per side) 11-3/4" x 2-3/4" x 1/2" Nylatron wear pads for container/body support
- d. The Nylatron pad will allow the containers/bodies to slide back and forth horizontally on the "Z" rail of the hoist with ease

Jib hook design:

- a. Vertical Jib is constructed of a 9" x 9" x ½" wall square tube of A500 50 KSI steel
- b. Jib hook height is adjustable to either 53-7/8" or 61 ¾" from the bottom of the container/body subframe rails to the bottom of the A-frame lift bar

Hooklift warranty:

- a. The complete mechanism, including hydraulics, will be factory warranted free of defects in material and workmanship for a period of forty-eight (48) months on parts, and twelve (12) months on labor from the date of delivery

2. Install ProTech stainless steel fenders for tandem axle chassis including the following:

- a. Fenders shall be constructed of 14 ga minimum 304 or 403 polished stainless steel
- b. Stainless steel mounting brackets at the front and at the rear
- c. The fender kit shall include a mounting bracket between the drives that joins two single radius ½ fenders so that when assembled the fenders are a double radius fender covering both front and rear drive tires
- d. Flaps mounted at the front and at the rear of the fenders on rear axles

3. Install Monroe model 4512 Underbody Scraper including the following:

- a. Moldboard is grade 50, hi-tensile steel, not heat-treated

- b. All cylinder rods are Socatri-type, not nitrated
- c. Replaceable trunnions
- d. Piloted center bolt into hangerboard
- e. Grease line kit is included
- f. Cushion valve and j-50 relief valve included
- g. Proximity switch for scraper position indication
- h. Install 4" grip-strut scraper step, not bar grating, installed raised with step material
- i. Install Kennametal single-insert carbide cutting edges

4. Install 34" Hustling-type Front Hitch including the following:

- 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. Installed roller pins, rollers mounted to hitch frame base
- e. Front tow hooks to be mounted on frame with bumper cut-outs
- f. Two expanded metal front bumper steps driver and passenger side
- g. Expanded metal traction strip placed across the top of the front bumper
- h. Chain box to be mounted on the driver's side of the front bumper

5. Install Fuel/Oil/Valve Enclosure Combination tanks including the following:

- a. 120 gallon fuel oil capacity, 35 gallon hydraulic oil capacity
- b. Fuel/hydraulic tank/valve enclosure is 7 ga. type 201 stainless steel construction
- c. Hydraulic valve enclosure built into left side of tank
- d. Valve enclosure to have a weather tight door
- e. Low-oil sensor in hydraulic tank and wired to a low oil shutdown system
- f. Top of the tank Zinga-type, tank-mounted return line filter
- g. Ball valve shutoff on case drain and supply ports
- h. Sight and temperature gauge
- i. Install 3-step egress & platform from street side fender to combination reservoir tank
- j. Step assemblies shall be painted RED
- k. Hydraulic tank will be full of AW32 hydraulic oil
- l. "Fuel" and "Hydraulic Oil" stickers shall be installed on the tank

6. Install Central Hydraulic System including the following:

- a. Force FASD45L piston pump – 6.0 CID
- b. Front pump mounting bracket
- c. Pump flange
- d. Low-oil shutdown block with override controls
- e. Monroe-type low-oil sender in tank

- f. Spicer drive line
- g. Valve assembly is Force America Add-a-Fold with the following sections:
 - 4 way EPC section for Hoist
 - 4 way EPC section for Jib
 - 4 way EPC Scraper with relief for down pressure
 - 4 way EPC section for Scraper swing
 - 4 way EPC section for Front Plow
 - 4 way EPC section for Front Plow swing
 - 4 way EPC section for Wing Plow
 - 4 way EPC section for Pre-wet/Anti-Ice
 - 3 way EPC section for Auger
 - 3 way EPC section for Spinner
- h. Force America CommandAll controller armrest compatible
- i. All necessary hoses and fittings will be Parker-type
- j. Stainless steel piping will be used to extend the spreader, spinner, pre-wet and return oil circuits to the rear of the chassis
- k. Return line manifold

7. Install Control Center including the following:

- a. Force America CommandAll controller SPJC Ultra series with a 6100 model spreader
- b. The electronic controller shall be a single-handle design with a minimum of three miniature fully-proportional joysticks in the head of the handle to operate all cylinder functions
- c. The primary joystick handle head shall include LED-backlit momentary push buttons for activation of remote standby and remote blast
- d. The electronic spreader control shall be designed for precise, closed-loop control of granular and pre-wet liquid applications and operate on a CAN Bus protocol
- e. The spreader control interface shall have two, color-coded, continuous rotation encoders for granular and spinner control
- f. The spreader control display shall be a remotely-mounted, 7" diagonal color TFT LCD, with a low-profile 16:9 widescreen format and minimum of 800 x 480 pixel resolution
- g. The operator menus shall be color-coded to match the encoder knobs on the operator interface
- h. A proportional PWM driver and input module (Valve Module) shall be remotely mounted inside the hydraulic valve enclosure for control of both spreader control and joystick control outputs
- i. Truck diagnostic calibration shall be completed prior to delivery
- j. Supply one USB for firmware and Storing calibration data

8. Install Custom Chassis Lighting & Electrical including the following:

- a. Three-hole, 6" oval, stainless steel light bars shall be mounted to the chassis just behind the fender on each side of the chassis including:
 - One (1) SoundOff LED Amber flasher mounted in each rear light box
 - One (1) SoundOff LED STT light mounted in each rear light box
 - One (1) SoundOff LED backup light mounted in each rear light box
- b. LED marker light kit
- c. One (1) Star model 9018LED-Amber/Green mini lightbar cab roof-mounted on a riser
- d. Two (2) Weldex flood lights at rear
- e. Two (2) Weldex scrapers lights, one each side
- f. One (1) Weldex light for wing operation
- g. Plow lights and aluminum plow light brackets mounted on hood
- h. Two (2) Whelan Micro Amber 6 LED Vertex part 3 01-0268715-10A self-powered, mounted in front plow light bracket forward-facing, one on each side
- i. Betts junction box and related wiring
- j. Install Preco 1040 back-up alarm

Controls, Switches and Disconnects including the following:

- a. OEM chassis and CommandAll switches shall control the emergency & work lighting
- b. Chassis switches for the following:
 - Scraper work lights
 - Spreader work lights
 - Wing work lights
- c. Console switches for the following:
 - Tarp in/out
 - Air-tailgate
- d. CommandAll programmable switch assembly installed for the following:
 - Low-oil pump override
 - Front flashers
 - Rear flashers
 - Spreader on/off
 - Jib/Hoist & Wing on/off
- e. Couplers for attachments shall be located behind the cab
- f. An electrical plug for attachment lighting shall be located behind the cab and at the rear of the chassis for attachment hook up
- g. Granular feedback as well as pre-wet shall be included in a disconnect mounted behind cab

- h. Air controls for air trip tailgate shall be located at the rear of the chassis just behind fenders
- i. The tarp system controls shall be wired to the rear of the chassis just behind the fenders and shall include a two-terminal electrical plug

9. Install Monroe model MJW-7' Mid-mounted 7' Junior Wing; parallelogram-type wing including the following:

- a. 7' moldboard length, 27" intake height, 28" discharge height
- b. Safety chain shall be installed for transport at any adjusted angle
- c. Wing Post shall be mounted just ahead of the front drive tire with the rear push arm mounted behind the rear drive tire
- d. Wing Post is parallelogram design and shall mount directly ahead of the drive tire
- e. Rear push arm is to be equipped with a 6" cushion spring
- f. Hydraulic circuit for the wing shall be equipped with a sequencing valve for proper operation of the wing
- g. Sequencing valve shall have built in, manually adjustable flow controls
- h. Wing is to be equipped with stainless steel hydraulic disconnects for easy removal
- i. Wing will also be equipped with a cushioned rubber stop to prevent it from hitting the body when placed in the stored position at any adjusted angle
- j. Install single stainless steel light box mounted on the end of the wing with a Buyers split Green/Amber flashing light and LED marker light front-facing
- k. Install recycled tire cutting edge with a carbide D-type curbguard
- l. Install double-reinforced 1/2" thick rubber snow deflector
- m. Proximity switch for wing position indication

10. Install Monroe model MP36R11-ISCT Snow Plow with mailbox trim on right-end including the following:

- a. Integral shield style moldboard
- b. Roller kit for the front plow
- c. Screw adjustable skid shoes to be mounted on the plow
- d. A rubber snow shield to be mounted across the top of the plow
- e. Blade guides
- f. 34" Husting plow-portion hitch

11. Install 3/4" rear hitch plate and 20-ton pintle hook including the following:

- a. The hitch plate is to have multiple holes for adjustment height of pintle hitch
- b. There shall be two (2) 3/4" D-rings welded on each side for tow chains

- c. The rear hitch shall have support bracing welded for extra strength and stability
- d. Electric plug 7-way
- e. License plate frame and light
- f. The pintle hitch should be model PH-20, mounting height TBD

12. Install RoadWatch Kit for Force America 6100 including the following:

- a. RoadWatch road temperature sensor mounted on mirror & display mounted in-dash
- b. Sensor cables for connecting to Force America 6100 spreader controller
- c. Includes mounting, necessary wiring and installation

13. Install Fire Extinguisher and Triangle Kit

14. Install Conspicuity Tape as necessary on chassis and attachments

15. Install Electric Brake Controller

16. Install Flaming River Electrical Shutdown including the following:

- a. 3-minute timed delay
- b. Enclosure with LED indicator light

B. BASE ATTACHMENTS

BASE ATTACHMENT #1

V-box Spreader

1. Install Skid-mounted Monroe MCV-168-84-62 Dual Auger Combination Spreader including the following:

- a. 53-7/8" hook and skid assembly
- b. Rollers at the end of the skid assembly
- c. Skid assembly will be hot-dip galvanized
- d. 10 gauge 201 stainless steel hopper
- e. 45 degree sloped sides with 2" double crimped top edge
- f. 7 gauge 201 stainless steel longitudinals tied together with 3" formed channel cross-sills
- g. Dual 7" auger conveyor system with planetary gearbox drive system
- h. Integral speed sensor in one auger motor
- i. Inverted-V installed over augers; 201 stainless
- j. Front bearing grease extensions to rear
- k. Auger units include a top-grate kit with lock-down provisions
- l. Hopper length is 168 inches

- m. Hopper width is 84 inches
- n. Hopper height is 62 inches
- o. Stainless steel hopper and spinner construction
- p. Side-mount stainless steel fold-up ladder, driver-side
- q. Tip-up rear adjustable spinner assembly, 201 stainless, poly disc
- r. Right-hand stainless steel winch kit with brake for tip-up assembly

2. Install Pre-Wet System including the following:

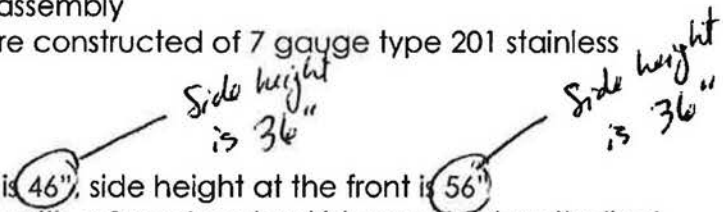
- a. Twin 125 gal tanks
- b. Remote vent kit for liquid tanks
- c. Bulk fill and flusher kit
- d. Crossover hose kit
- e. 7 GPM pre-wet pump with Force Control application rate sensor
- f. Pre-wet spray tube installed in auger trough
- g. Install all necessary supports and brackets
- h. Install stainless steel pipe kit from the rear of the spreader to the front of the spreader and equip with stainless couplers for the auger, spinner and pre-wet circuits
- i. LED marker light kit installed on the V-box spreader
- j. Install two-hole 6" Oval stainless steel light bar mounted at rear on each side for Star Amber & Star Green LED flashers with alternating flashing pattern
- k. Install single-hole stainless steel light box at rear on each side for SoundOff STT light
- l. Wire circuits to the front of the body for accessory lighting and application rate sensors
- m. Install Betts junction box at the rear of the body
- n. Install City-supplied "green warning triangle" at rear of V-box

BASE ATTACHMENT #2

Dump Body

1. Install Skid-mounted Crysteel Select 14' Stainless Steel Dump body including the following:

- a. 53-7/8" hook and skid assembly
- b. Body sides and ends are constructed of 7 gauge type 201 stainless steel
- c. 84" wide body
- d. Tailgate height is 46"
- e. Side height at the rear is 46", side height at the front is 56"
- f. Western understructure with a SwapLoader skid assembly longitudinal
- g. Body floor is 1/4" AR450
- h. Air-operated tailgate with screw latch lock Install turnbuckles in tailgate



- i. Tailgate is 9-panel construction with 2 intermediate horizontal braces and 2 vertical intermediate braces and a boxed perimeter
- j. 12" cabshield constructed of 10 gauge stainless steel is included
- k. Dump body sides and ends will be unpainted type 201 stainless steel
- l. Body longitudinal and bottom of floor will be painted black
- m. Rollers installed at the rear of the skid
- n. 3-hole tapered stainless steel light wedge boxes mounted on rear pillar posts:
 - Driver-side 3-hole top-to-bottom Star green, SoundOff STT, Star amber
 - Passenger-side 3-hole top-to-bottom Star amber, SoundOff STT, Star green
 - Flashers hooked up to wig-wag corner to corner
- o. LED body marker lights
- p. Install Betts junction box at the rear of the body
- q. Wire to plug assembly at the rear of the dump body light and tarp disconnect
- r. Install Roll-Rite model 64000 tarp system including electrical disconnect kit
- s. Includes aluminum tarp and tension bows
- t. Wire to plug assembly at the rear of the dump body with plug
- u. Mesh-type tarp cover included

BASE ATTACHMENT #3
Anti-Ice Tank

1. Install Skid-mounted Tank assembly including the following:

- a. 53-7/8" hook and skid assembly
- b. Rollers at the end of the skid assembly
- c. Skid assembly will be hot-dip galvanized
- d. 2350 gal tank with a 1.7 rated specific gravity
- e. Tank includes center wall baffle system
- f. Install agitation kit with educator nozzles
- g. 3-lane, closed loop, non-tiered plumbing kit
- h. 190 gpm centrifugal pump with hydraulic motor (Needs 12 gpm for proper operation)
- i. Micro-Trak flow meter *Quoting Raven-type flow meter*
- j. Three-lane electric boom valves
- k. Three-lane stainless steel wet booms with streamer nozzles; telescoping mount
- l. Plumb hydraulic circuit from the rear to the left front corner of the skid for hookup and disconnect just behind the cab
- m. Wire boom valve circuit, flow meter circuit and lighting circuit from rear of skid to left front corner of the skid for hook up just behind the cab
- n. Ball valve shutoff on the supply port
- o. Install two-hole stainless steel light box mounted at rear on each side for Star Amber & Star Green LED flashers with alternating flashing pattern

- p. Install single-hole stainless steel light box at rear on each side for SoundOff STT light
- q. Wire circuits to the front of the body for accessory lighting
- r. Install Betts junction box at the rear of the body

BASE ATTACHMENT #4
14' Flatbed Stake Rack

- 1. Install 14 ft. Flatbed Stake Rack body including the following:**
 - a. 53-7/8" hook and skid assembly
 - b. Steel drum rollers at the end of the skid assembly
 - c. 96" wide flatbed includes a 3/16" tread plate deck
 - d. 4" structural C-channel cross members on 12" centers
 - e. 6" structural C-channel outside rail with stake pockets and outside tie rail
 - f. 52" front bulkhead with knee braces
 - g. Windows built into bulkhead with expanded metal screens
 - h. 50" stake rack sides and rear
 - i. LED body clearance lights
 - j. Body is sandblasted and painted black
 - k. Removable stake racks and bulkhead are powder-coated black



**CITY OF NOVI
INSURANCE REQUIREMENTS
ATTACHMENT A**

1. The Contractor shall maintain at its expense during the term of this Contract, and supply proof, the following insurance:
 - A. **Commercial General Liability Insurance** on an "Occurrence Basis" with limits of liability not less than **\$1,000,000** (One Million Dollars) per occurrence and/or aggregate combined single limit, Personal Injury, Bodily Injury and Property Damage.
 - B. **Motor Vehicle Liability Insurance**, including applicable No-Fault coverage, with limits of liability not less than **\$1,000,000** (One Million Dollars) per occurrence combined single limit Bodily Injury and Property Damage. Coverage shall include all owned, all non-owned, and all hired vehicles.
 - C. **Worker's Compensation Insurance**, including Employer's Liability coverage, in accordance with all applicable statutes of the State of Michigan.
2. All policies shall name the Contractor as the insured and shall be accompanied by a commitment from the insurer that such policies shall not be canceled or reduced without at least thirty (30) days prior notice date to the City; alternately, contractor may agree to provide notice of such cancellation or reduction.
3. The City of Novi shall be named as Additional Insured for General Liability and Auto Liability. Certificates of Insurance evidencing such coverage shall be submitted to City of Novi, Purchasing Department, 45175 Ten Mile Road, Novi, Michigan 48375-3024 prior to commencement of performance under this Contract and at least fifteen (15) days prior to the expiration dates of expiring policies. A current certificate of insurance must be on file with the City for the duration of the contract. Said coverage shall be PRIMARY COVERAGE rather than any policies and insurance self-insurance retention owned or maintained by the City. Policies shall be issued by insurers who endorse the policies to reflect that, in the event of payment of any loss or damages, subrogation rights under those contract documents will be waived by the insurer with respect to claims against the City
4. The Contractor shall be responsible for payment of all deductibles contained in any insurance required hereunder.
5. If, during the term of this Contract, changed conditions or other pertinent factors should in the reasonable judgment of the City render inadequate insurance limits, the Contractor will furnish on demand such additional coverage as may reasonably be required under the circumstances. All such insurance shall be effected at the Contractor's expense, under valid and enforceable policies.

issued by the insurers of recognized responsibility which are well-rated by national rating organizations and are acceptable to the City.

6. If any work is sublet in connection with this Contract, the Contractor shall require each subcontractor to effect and maintain at least the same types and limits of insurance as fixed for the Contractor.
7. The provisions requiring the Contractor to carry said insurance shall not be construed in any manner as waiving or restricting the liability of the Contractor under this contract.
8. The City has the authority to vary from the specified limits as deemed necessary.

ADDITIONAL REQUIREMENTS

HOLD HARMLESS/INDEMNITY

1. The Contractor agrees to fully defend, indemnify and hold harmless the City, its City Council, its officers, employees, agents, volunteers and contractors from any claims, demands, losses, obligations, costs, expenses, verdicts, and settlements (including but not limited to attorney fees and interest) resulting from:
 - A. Acts or omissions by the Contractor, its agents, employees, servants and contractors in furtherance of execution of this Agreement, unless resulting from the sole negligence and tort of the City, its officers, employees, agents and contractors.
 - B. Violations of state or federal law involving whether administrative or judicial, arising from the nature and extent of this Agreement.
 - C. The Contractor agrees to defend the City from and against any and all actions or causes of action, claims, demands or whatsoever kind or nature arising from the operations of the Contractor and due to the acts or omissions of the Contractor or its agents, including, but not limited to, acts of omissions alleged to be in the nature of gross negligence or willful misconduct. The Contractor agrees to reimburse the City for reasonable attorney fees and court costs incurred in the defense of any actions, suits, claims or demands arising from the operations of the Contractor under this Agreement due to the above-referenced acts or omissions.
2. The Contractor agrees that it is its responsibility and not the responsibility of the City to safeguard the property and materials used in performing this Contract. Further the Contractor agrees to hold the City harmless for any loss of such property and materials used in pursuant to the Contractor's performance under this Contract.

3. The Contractor shall not discriminate against any employee, or applicant for employment because of religion, race, color, national origin, age, sex, height, weight, handicap, ancestry, place of birth, sexual preference or marital status. The Contractor further covenants that it will comply with the Civil Rights Act of 1973, as amended; and the Michigan Civil Rights Act of 1976 (78. Stat. 252 and 1976 PA 453) and will require a similar covenant on the part of any consultant or subcontractor employed in the performance of this contract.