

**Truck Equipment
Attachment A**

Outagamie County Quad Axle Truck Equipment Minimum Specification
Quantity of Two

NOTE: The equipment must be equal or exceed the following detailed specifications.

Mounting to be on two (2) trucks with usable CT of 158".

It is up to the body company and truck dealer to determine the detailed chassis layout.

<u>Description</u>	<u>Meets Specifications</u>		
	<u>Yes</u>	<u>No</u>	<u>Deviations</u>
<u>Dump Body:</u>			
17'- 0" long	_____	_____	_____
Sloping one piece sides 62" to 52"	_____	_____	_____
Side to floor radius shall be 18" to accept internal pre-wet tanks	_____	_____	_____
100% welded throughout	_____	_____	_____
U.S. Manufactured	_____	_____	_____
<u>Sides and Front:</u>			
Dog house not to take up more than 12" in depth of body	_____	_____	_____
3/16" AR450 steel; 190,000 psi tensile strength 150,000 psi yield strength	_____	_____	_____
Top rail to be dirt shedding, made of 3/16" 304 stainless steel	_____	_____	_____
Side rubrail made of 3/16" 304 stainless steel	_____	_____	_____
Rear corner post to be made of 3/16" 304 stainless steel	_____	_____	_____
Two oblong light holes cut in corner posts, bottom hole not to exceed 72" measured from the ground to the bottom of the hole	_____	_____	_____
Rear bolster to be made of 1/4" 304 stainless steel	_____	_____	_____
<u>Tailgate:</u>			
Tailgate to be 52" high	_____	_____	_____
Tailgate shall be sloped forward 12" and include an asphalt tail	_____	_____	_____
3/16" AR450 steel; 190,000 psi tensile strength 150,000 psi yield strength	_____	_____	_____
inner wall with 3/16" 304 stainless steel outer skin	_____	_____	_____
Integral dirt shedding top and all braces to be dirt shedding	_____	_____	_____
3.5" tubular perimeter 304 stainless steel structure	_____	_____	_____
1.5" thick stainless upper tailgate hinges with 1.25" greasable pins	_____	_____	_____
1" thick flame cut stainless lower latch fingers	_____	_____	_____
3.5" closed/closed air trip tailgate release cylinder mounted at rear between longills	_____	_____	_____
Air tailgate switch to be mounted in Force tower	_____	_____	_____
3/8" high tensile spreader chains	_____	_____	_____
D-ring mounted inside top of tailgate	_____	_____	_____
All tailgate hardware both above and below floor shall be stainless steel	_____	_____	_____
Stainless steel air foil bolted to top of tailgate to assist in keeping rear of body clean of snow buildup	_____	_____	_____

Floor and Understructure:

¼" AR450 steel; 190,000 psi tensile strength 150,000 psi yield strength
Longsills 9" high made of ¼" 304 stainless steel welded to floor 100%

_____	_____	_____
_____	_____	_____

Cabshield:

Designed to extend a minimum of 20" forward of headsheet
78" wide; 7 ga 304 stainless steel
100% welded to front headsheet

_____	_____	_____
_____	_____	_____
_____	_____	_____

Miscellaneous:

Electric operated vibrator shall be installed to underside of body
Two rung ladder mounted on driver side rear
Step inside body on driver side
Step mounted driver side front with grab handle
Heavy-duty rubber mud flaps frame mounted in front lead pusher
Heavy-duty rubber mud flaps body mounted behind drive tires
Aero 550 electric tarp system with under mount torsion style spring
Tarp assembly shall be mounted in aluminum enclosure behind cab shield
Two (2) tow hooks mounted front and rear
D-rings on sidewalls both front and rear inside body just below top rail
Fork style shovel holder mounted per county specifications
Body up light shall use mercury switch to activate light in cab
Body limit shall use mercury switch to control height of body
A 97Db electric back up alarm

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Preparation and Paint:

The entire body assembly shall be shot blasted to remove mill scale
Entire body to be double primed and sanded in between coats for a smooth finish
Top coat to be polyurethane omaha orange
Underside of body to be Ziebart undercoated

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Hoist:

NTEA class 120 rating
46 ton minimum capacity at 2000 psi
Single acting Mailhot trunnion mounted cylinder with a minimum of 6" bore
Rear hinge assembly shall be greaseable with removable pins
Two OSHA approved body safety props

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Front Mount Plows:**Truck Portion Plow Hitch:**

Hitch shall be low profile
Lift arm to fold flat for summer time operation
Receiver for pin and loop style plow hook up
Plow hookup must interchange with all plows in fleet
4" X 10" double acting lift cylinder with 2" rod with rust preventive treatment
Powder coated black

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Bumper to be bolted to frame when hitch is removed in summer time

Moldboard:

12' long x 48" high power reversible

Dual compression trip design

100% welded construction throughout

10 gauge roll formed moldboard

Integral shield

Minimum of **EIGHT** ½" x 4" tapered one piece flame cut ribs

Ribs to taper from 4" at bottom angle to 2" at top angle

½" plate welded to ribs for 1" bearing surface where push frame attaches

Horizontal support angles are to be 3" x 3" x ¼"

2" X 3" X 3/8" structural angle top angle

4" x 4" x 3/4" bottom angle with 1" thick hinge blocks welded to angle

Bottom angle to have 11/16" punched holes to match cutting edge

Spring support plates ¾" thick and allow for 3 moldboard pitch settings

12" rubber snow deflector with metal mounting strap bolted to top angle

36" orange markers at moldboard ends

¾" X 8" X 12' cutting edge

Plow moldboard must provide overlap between plow and wing preventing a trail between the two

Reverse Table

4" x 4" x 3/8" wall square tube **10'6"** long front push frame cross tube

Twelve 4" x 4.5" x ½" attaching ears to form **SIX** pivot points

Two rubber stops 1.5" x 5" x 6" SRB material, hardness 65 durometer

Two compression trip assemblies with 3.5" x ½" mechanical slide

Springs are made from AISI 5160H steel, ¾" diameter

Reversing cylinders are located above the semi-circle

Positioning of cylinders designed to almost eliminate side stresses to rods

Two 3" X 10" double acting reverse cylinders with 2" rods with rust preventive treatment

Abrasion resistant hydraulic hoses

Hoses are ½" ID rated at 3000 psi working and 12000 psi burst pressures

2.5" x 4" x 13.8 lb ship and car channel A-Frame

Loop bolted to push frame with oscillating capability

Crank style parking jack to support plow when un-hooked

Preparation and Paint:

The entire plow assembly shall be shot blasted to remove scale, rust, etc.

The moldboard shall be coated with a high quality polyurethane omaha orange top coat

The push frame shall be coated with high quality polyurethane black top coat

Front Mount Right Patrol Wing:

Double function design with a full trip capability

Wing shall be mounted so that it will fold closely to the truck and will provide sufficient tire clearance for turning left and right

Moldboard:

All welds to be 100% continuous

10' long (cutting edge)

Roll formed tapered moldboard made of 3/16" 100XF steel

Moldboard height shall be 29" toe to 39" at heel

Upper heel corner of moldboard to be cut at a 45 degree angle

4" X 4" X 1/2" structural bottom angle with 1" blocks welded to angle

2 1/2" X 1" formed channel top angle

Minimum 6 vertical 1/2" thick one piece tapered ribs, 4" bottom, 2.5" top

Cutting edge shall be 3/4" x 8" x 10'

Push arm attaching point will be 1" x 4" flat bar on edge welded

horizontally between the ribs

36" fluorescent flexible marker at wing heel

Rear push arms:

Dual heavy duty push arms required, push arm length must allow for a

heel adjustment between 6' – 8' measured from the heel cutting edge

to the steps on the side of the vehicle

Install tie rods to lower push arm to attached wing light wiring to

An extension spring shall be a part of the upper push arm assembly to

assist in the moldboard returning to its upright position

Front Lift Assembly:

The front lift assembly shall be of the non-post design

3" X 10" double acting lift cylinder with 2" rod with rust

preventive treatment

A torsion spring shall be a part of the front head assembly to assist in

the moldboard returning to its upright position

Wing lock to be incorporated into both toe/heel cylinders to prevent drift

Wing toe limit chain shall be installed

Marker to be mounted on front post to gauge height

Rear Wing Support:

Tubular frame work designed to be bolted to truck frame and

removable for summer time use

Preparation and Paint:

The entire wing assembly shall be shot blasted to remove scale, rust, etc.

The moldboard shall be coated with a high quality polyurethane omaha

orange top coat

The front post, rear push arm assembly and mounting hardware shall be

coated with a high quality polyurethane black top coat

Tailgate Spreader:

Constructed of 201 stainless steel

Assembly is all 3/16" with 1/4" endplates

All seams are continuously welded

Full width auger located below dump body floor

Full opening unobstructed bottom clean out has three 1/2" solid hinges

Auger to have 3/8" x 6" reverse flighting with a 4" pitch

Auger is supported by heavy duty 1 ½” sealed, self-aligning, relubable
4 bolt flange bearing
Auger is driven by direct driven hydraulic motor
The motor is 45 cubic inch, 1 ¼” 14 spline shaft with 7/8” o-ring ports
Motor shaft coupler shall be stainless steel
Auger sensor incorporated into auger drive motor
Full stainless steel side shields to support tailgate and keep salt from
spilling out, pinned to tailgate instead of being bolted
Free swinging spinner with poly disc
Hydraulic motor to include seal saver poly block

In Bed Liquid Tank System:

Install and plumb as far forward as possible, two in bed tanks 750 gallon each with stainless tubular structure to hold tanks in place
The tank(s) must be properly vented for bottom filling and include 2" male cam lok bulk fill coupling

Anti-Ice System:

304 stainless steel center spray bar with a minimum of eight (8) solid stream non-adjustable downstream nozzles and one at end on far left shall be provided

Manual shut off allowing right half of boom

The spray bar attaches to stainless framework under tailgate spreader

A closed loop flow meter rated at 70 GPM minimum shall be installed to maintain proper application rates for anti-icing

The anti-icing product pump must be a 70 GPM centrifugal pump with a 2" (minimum) suction and a 1-1/2" (minimum) discharge port

The hydraulic motor shall be integral with the anti-ice pump

The hydraulic motor will require no more than 12 gpm @ 2000 psi, and must be capable of working with a load sensing system

All wiring and hydraulic hoses shall be routed away from pinch points, sharp corners and heat sources

Wire harnesses "outside the cab" shall meet IP68 and NEMA 6 standards and shall include IP68 rated connections

The system will be capable of self-loading/unloading liquids from and/or to a ground based tank or mobile nurse tank

The system must have provisions for re-circulating product back to the tank for agitation.

Proper valving must be supplied so you can flush the pump, liquid plumbing, booms and nozzles

All fittings must be glass-filled polypropylene, brass or stainless steel

Adequately sized plumbing shall be provided for all Anti-icer or De-icer suction and pressure lines

The anti-ice pump and electric ball valve for the center lane is to be installed on stainless steel framework that will be easily removable from truck frame for summer time operations

Pre-Wet System:

7 gpm hydraulic driven pre-wet pump with flow meter mounted in fiberglass enclosure with plumbing to spinner
Pre-wet pump enclosure installed on stainless steel framework that will be

easily removable from truck frame for summer operations

Hydraulic System:

Force America Comandall Ultra 3 joystick controller (no equal)
Force Ultra switch pack will operate tarp, vibrator and air trip tailgate
Force America 6100 spreader control (no equal)
AVL/GPS installed and activated
All Precise functions activated and operate properly, plow up/down, spreader, prewet, and anti-icing
Force America wireless temperature sensor wired through 6100 display
Eaton crank shaft driven load sense hydraulic pump
Pump driveline shall be balanced prior to installation grease fitting installed in u-joint end cap (one per u-joint)
40 gallon oil reservoir and vertical valve enclosure mounted on integral framework behind the cab, made of 100% 304 stainless steel
Distance from back of cab to front of body must be 24" or less
In-tank return line filter
In cab low oil light and alarm
High pressure filter with restriction indicator in cab
Hydraulic valve to be a Force America Add a Fold design:
(SA 40 gpm hoist; DA 21 gpm plow angle; DA 21 gpm plow up/down; DA 21 gpm right wing toe; DA 21 gpm right wing heel; SA 14 gpm spinner; SA 14 gpm auger; SA 14 gpm pre-wet; SA 21 gpm anti-ice
Step shall be incorporated off of valve enclosure to allow operator to look inside body

Hoses and Fittings:

Lines and fittings on those lines running forward to plow and wings and rearward to spreader, pre-wet and anti-ice shall be stainless steel with whip hoses on each end
Lines and fittings for pressure and load sense between pump and valve shall be stainless steel with whip hoses on each end
Hoses must be sized accordingly to provide optimum performance of all hydraulic equipment. JIC and ORB fittings required
All connections for wing and spreader shall have caps and plugs to be used when equipment is removed
Plow angle quick coupler shall be stainless steel

Lighting and Electrical:

Fiberglass enclosure housing all solenoids, relays and circuit breakers
All wiring is soldered, heat shrunk and in protective loom
Junction box must be mounted to cross-member between tandems for easily access
All FMVSS 108 lighting to be L.E.D
LED stop/turn/tail (w/ integrated backup lights) between rear hinge
LED stop/turn/tail (w/ integrated backup lights) recessed in rear corner posts
Two LED flood lights wired to backup switch mounted to tailgate spreader
Provide and install custom hood mounted stainless plow light brackets
Amber work light for spreader (wired into chassis marker light circuit)
Amber work light for wing (factory chassis dash switch)

Wire wing strobe to rear wing support and terminate with weather pack (wired into wing work light switch)	_____	_____	_____
Relocate push button transmission control to left side of control tower	_____	_____	_____
LED stop/turn/tail and 3-ID lighting integrated into tailgate spreader	_____	_____	_____

Warning Lights:

Whelen R1PHPA highlighter mounted on 8" bracket, visible from the rear (factory chassis dash switch)	_____	_____	_____
Run wiring to each front corner of cab shield and include support bracket for customer installed lights (factory chassis dash switch)	_____	_____	_____
Soundoff LED (EOVREBZA) strobes recessed in rear corner posts (factory chassis dash switch)	_____	_____	_____
Soundoff LED (EOVREBZA) strobe mounted to wing heel connected to same factor chassis dash switch as amber work light for wing	_____	_____	_____

Chipper bar:

Chipper bar matching counties current fleet	_____	_____	_____
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Manuals:

Parts manual specific to serial # of plow, wing and spreader (generic manuals not acceptable)	_____	_____	_____
Bill of materials which includes all part #'s used in the build (including serial #'s) shall be included	_____	_____	_____
All information provided on jump drive	_____	_____	_____

Training:

Equipment installer to provide training on operation and calibration of all equipment upon delivery of completed unit	_____	_____	_____
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Warranty:

Two full winter season's parts and labor on all equipment	_____	_____	_____
Body and hoist to come with 5 year warranty	_____	_____	_____

Explain warranty deviations:

Performance Bond

The successful proposer will be required to deposit a certified check or a performance Bond equal to ten (10) percent of the net proposal, Payable to Outagamie County Highway Department to guarantee delivery date and equipment "as proposed" as specified in proposal. Certified Check or Performance Bond is to be forfeited to Outagamie County Highway Department if delivery date or proposed specifications are not met, including failure to comply with said proposal conditions.

Two (2) Dump Boxes and Two (2) Hydraulic Systems

Make _____ Model _____ Price _____

Two (2) Power Reverse Trip Blade Snow Plows

Make _____ Model _____ Price _____

Two (2) Tailgate Type Salt Spreaders

Make _____ Model _____ Price _____

Two (2) Liquid Systems

Make _____ Model _____ Price _____

Two (2) Right Side Wings

Make _____ Model _____ Price _____

Delivered Price – Two Quad axles \$ _____

Delivery Date: _____ **FIRM DATE REQUIRED**

No State or Federal taxes to be included in proposal prices.

Respectfully Submitted,

Name of Company

Mailing Address

City, State, Zip Code

Name of Representative Phone No.