

**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 longsills | — | — | _____ |
| 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:

1/4" AR450 steel; 190,000 psi tensile strength 150,000 psi yield strength
Longsills 9" high made of 1/4" 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** $\frac{1}{2}$ " x 4" tapered one piece flame cut ribs
Ribs to taper from 4" at bottom angle to 2" at top angle
 $\frac{1}{2}$ " plate welded to ribs for 1" bearing surface where push frame attaches
Horizontal support angles are to be 3" x 3" x $\frac{1}{4}$ "
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 $\frac{3}{4}$ " 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
 $\frac{3}{4}$ " 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 $\frac{1}{2}$ " 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 $\frac{1}{2}$ " mechanical slide
Springs are made from AISI 5160H steel, $\frac{3}{4}$ " 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 $\frac{1}{2}$ " 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 1/2" sealed, self-aligning, relubable 4 bolt flange bearing | — | — | _____ |
| Auger is driven by direct driven hydraulic motor | — | — | _____ |
| The motor is 45 cubic inch, 1 1/4" 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 | — | — | _____ |
|---|---|---|-------|

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 | — | — | _____ |
|--|---|---|-------|

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.