State of Illinois

Department of Transportation

Bureau of Business Services

**Specifications & Questionnaire for a Trailer Mounted Anti-Ice 3,100 Gallon Capacity**

September 2018

This specification is designed to aid the Department of Transportation in the purchase of an efficient and dependable trailer mounted anti-ice applicator mounted on a tandem axle, single point suspended trailer for winter maintenance operations.

All bidders are expected to quote upon a manufacturer's latest standard conventional model complete with all standard equipment plus any optional or special equipment required meeting the following specifications.

Each bidder shall submit with his bid **two sets** of descriptive literature and specifications describing **all** the equipment and options proposed. This information shall be clearly marked to indicate the make, model, and accessories proposed to be furnished.

Bidders quoting on specified equipment must submit with their bid.

* The manufacturer of the equipment proposed has been actively involved in the manufacture of the equipment called for in the Bid for a period of not less than 5 years.
* Parts and service for the equipment proposed are readily available within the State of Illinois.

It is the responsibility of each bidder to complete and return this questionnaire with the bid.

**Unless otherwise specified, the proposed equipment shall be complete in all parts and ready for immediate use upon delivery.**

**Bidders are advised to carefully read these specifications as changes have been made since the last solicitation issue.**

**Proposed with this Bid:**

|  |  |
| --- | --- |
| Make: |       |
| Model: |       |
| Manufactured by: |       |
| Bidder: |       |
|       |
| Contact name: |       |
| Telephone: |       |
| Email: |       |

**Trailer:**

Tag trailer, Tandem axle, dual wheel, eight (8) pneumatic tires, for the supported mounting of a single or joined poly tank(s).

|  |  |
| --- | --- |
| Number of tires:  |       |
| Number of axles:  |       |

Complies: Yes [ ]  No [ ]

**The trailer’s capacity shall be calculated as:**

The ability to transport 40,000 lbs. minimum load capacity at a highway speed of 55 M.P.H.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Load capacity at 55 mph:  |       | Lbs. |

The trailer frame, tongue, crossmembers, tank supports, etc. shall be fabricated then coated with hot dipped galvanizing material, to provide extended life while exposed to corrosive chemicals in winter maintenance operations. The axles, tires, wheels are exempt from this requirement.

Complies: Yes [ ]  No [ ]

**Frame:**

Main beams shall be wide flange beams pierced to allow full through crossmember installation.

Complies: Yes [ ]  No [ ]

All frame members shall be 50,000 psi. minimum steel mainrails from front to drawbar to rear of trailer.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Steel rating:  |       | PSI |

Main beams shall be 14" X 22 lbs. per foot wide flange beam minimum.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Main beam:  |       x       | Lbs. |

Crossmembers shall be a minimum 4” I-beams on 16” centers or 6” I-beams on 22” centers rated to meet trailer GVW specifications.

Complies: Yes [ ]  No [ ]

|  |  |  |  |
| --- | --- | --- | --- |
| Crossmember size: |       | @ |       |

Side rails shall be minimum 6" structural channel of 9.8 lb. /ft minimum.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| Channel size:  |       |
| Weight/ length:  |       |

**Tank Platform:**

Platform height dimension is critical. Trailers considered must have loaded platform height built to this specification no greater than 36"

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Loaded height:  |       | Inches |

The tank platform shall be constructed of heavy formed or structural channel spaced to provide full support to the underside of the tank.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| Describe construction:  |       |
|       |

Trailer Width - 96" minimum 102” maximum

|  |  |  |
| --- | --- | --- |
| Width:  |       | Inches |

The trailer shall be approximately 25’ in overall length.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Overall length: |       | Feet/Inches |

**Tongue:**

The tongue shall extend approximately 116” ahead of the tank. Length shall allow for swing clearance on IDOT dump trucks equipped with an under the tailgate salt spreader or other winter attachments.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Length:  |       | Feet/Inches |

The tongue shall be an “A”-frame, designed with ample safety factor to withstand a minimum 20 percent of the rated gross vehicle weight of the trailer.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Load rating percentage:  |       | Percent |

**Toolbox:**

Toolbox located on tongue with lockable lid. The toolbox shall not protrude above the top of the mounting frame member.

Complies: Yes [ ]  No [ ]

**Load Transfer:**

The trailer shall be capable of transferring a minimum of 15 percent and a maximum of 20 percent of its load to the towing vehicle.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Weight transfer:  |       | % with centered load. |

The trailer shall be clearly marked, visible on both sides, where 15 percent and 20 percent of the load transfer occurs.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| Describe marking:  |       |

**Brakes:**

Type- All wheels full air, anti-lock meeting Federal requirements 4S2M system.

Effective Lining Area - As required for 40,000 lb. rating

Complies: Yes [ ]  No [ ]

The trailer shall utilize a single air tank mounted so as not to interfere with the operation of the device.

Complies: Yes [ ]  No [ ]

**Brake Connections:**

One standard air brake connector kit shall be provided with each trailer. The glad hands shall be Meritor Wabco part number 952 201 018 0 filtered units or IDOT approved equal

Complies: Yes [ ]  No [ ]

The trailer shall be furnished with bright colored, coiled air lines at the "A" frame.

Complies: Yes [ ]  No [ ]

**Breakaway System:**

An emergency breakaway system with manual release shall be provided with each trailer.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| If NO, please describe:  |       |
|       |

**Axles:**

Type – Two each 22,500 lbs. axle capacity minimum with oil bath hubs. Capacity at Ground - 40,000 lbs. minimum. Axle spacing shall be approximately 49” center to center.

Complies: Yes [ ]  No [ ]

Component:

|  |  |
| --- | --- |
| Make:  |       |
| Model: |       |
| Capacity: |       |
| Axle spacing center to center: |       | Inches |

**Suspension:**

Type– Hutchens, Holland Duralite or equal adjustable suspension as required and recommended for tandem axle configuration.

Total Capacity at Ground - 40,000 lbs. minimum

|  |  |
| --- | --- |
| Suspension type:  |       |

Complies: Yes [ ]  No [ ]

Component:

|  |  |
| --- | --- |
| Make:  |       |
| Model: |       |
| Capacity: |       | Lbs. |

**Wheels:**

Type - Dual, cast spoke or steel disc

Rim Size - 17.5 X 6.75 HC minimum

Wheel Seals - Oil type

Complies: Yes [ ]  No [ ]

Component:

|  |  |
| --- | --- |
| Make:  |       |
| Model: |       |
| Size: |       |

One spare tire and wheel provided and mounted in a location where it does not interfere with the operation of the anti-icing or the turning movement of the trailer.

Complies: Yes [ ]  No [ ]

**Tires:**

Type- Tubeless, radial, trailer, designed primarily for on highway use.

Size - 215/75R X 17.5, Load Range H or as needed to meet load capacity.

Component:

|  |  |
| --- | --- |
| Make:  |       |
| Model: |       |
| Size: |       |

**Hitch:**

Type - Pintle eye for use with Premier Model 2200

Capacity – 100,000 lbs. Gross trailer weight. Minimum 15,000 lbs. Tongue weight, Inside diameter 3 in.

Height – set to mount at 30” above ground level, must provide some adjustment, to ensure level operation.

Complies: Yes [ ]  No [ ]

Component:

|  |  |
| --- | --- |
| Make:  |       |
| Model: |       |
| Adjustment height: |       | to |       | Inches |

**Safety Chains:**

Type - 1/2" steel chain, Grade 70, with matching rated hooks

Location - Outside of hitch frame.

Complies: Yes [ ]  No [ ]

**Fenders:**

The wheels of each axle shall be covered by bolt-on poly or fabricated fenders, covered with non-slip material, capable of bearing 500 pounds of weight, each fender.

Complies: Yes [ ]  No [ ]

**Landing Stand/Parking Jack:**

Mounted in a position to not interfere with snow and ice equipment mounted on the truck. The jack shall be 2-speed, screw adjustable, rated for the capacity of the loaded trailer.

Complies: Yes [ ]  No [ ]

Component:

|  |  |
| --- | --- |
| Make:  |       |
| Model: |       |
| Capacity: |       | Lbs. |

**Electrical System:**

Type - 12 volt

Complies: Yes [ ]  No [ ]

**Wiring and Lights:**

Wiring shall be complete 12 volt system with sealed modular wiring harness. All connections shall be in a weatherproof junction box. All lights shall be LED style, mounted in shock-proof mountings, complying with all “Vehicle Code” guidelines and statutes. All holes shall be grommetted and sealed junction boxes provided when necessary. There shall be no connections made outside of sealed junction boxes. Quick-disconnected splices, soldered and covered with shrink-wrap are not acceptable.

All lights, wiring, and junction boxes shall combine to form a sealed waterproof system similar to Truck-Lite's 50800 series or equal for commercial vehicles utilizing standard production wiring harnesses where practical.

Component:

|  |  |
| --- | --- |
| Make:  |       |
| Model: |       |

A full lighting package shall be included in the tail channel immediately after the rear axle and mounted in stainless steel boxes with stainless steel hardware.

Complies: Yes [ ]  No [ ]

All lamp connections and all junction box post connections shall be treated with a corrosion inhibitor.

Complies: Yes [ ]  No [ ]

All wiring passing through metal shall be protected by formed rubber grommets.

Complies: Yes [ ]  No [ ]

***Note:*** Use of garden or other styles of hose as grommeting is ***not*** acceptable.

All wiring shall be secured utilizing rubber coated clamps bolted to the frame at 18" minimum spacing.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| If NO, describe: |       |
|       |

**Truck Connection for Lighting and Electrical:**

Type: 7-way SAE connector, ATA approved.

Complies: Yes [ ]  No [ ]

A seven (7)-wire receptacle for trailer light jumper cable shall be furnished.

Complies: Yes [ ]  No [ ]

**Lights and Reflectors:**

Must meet all Federal and State regulations and comply with the Illinois Law and Vehicle Code in effect at the time of manufacture.

Complies: Yes [ ]  No [ ]

**Tank:**

The single tank shall provide a minimum capacity of 3,100 gallons.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Capacity: |       | Gallons |

The tank shall be rated to transport solutions weighing 14-pounds per gallon.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Tank rating: |       | Lbs./Gallon |

The tank shall contain baffling devices (wiffle-ball type) in a quantity required to inhibit sloshing or instability while in transit.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| Describe device: |       |
|       |

The tank shall fill from the top through a single 2” hose. The fill hoses join and share a centrally located ON/OFF ball valve, cam-lock nipple and cap.

Complies: Yes [ ]  No [ ]

The tank shall be designed to accept a fill rate of 200-gallons per minute.

Complies: Yes [ ]  No [ ]

|  |  |  |
| --- | --- | --- |
| Fill rating: |       | Gallons/Minute |

To adjust the fill rate, each fill hose shall be equipped with a 2-inch, ON/OFF ball valve.

Complies: Yes [ ]  No [ ]

***Note:*** The transfer pump to fill the tank(s) to be supplied by others.

The tank shall drain by gravity from the front or rear, near the leg of the tank, on the curbside of the trailer.

Complies: Yes [ ]  No [ ]

The tank shall have a shut off valve located to permit service to the pump without entirely draining the tank.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| If NO, describe: |       |
|       |

The tank shall be equipped with top mounted lid with vent. The vent shall be sized to provide the fill rate specified.

Complies: Yes [ ]  No [ ]

The rear tank face shall have conspicuity tape installed to comply with Federal requirements. The words “LIQUID DEICER” shall be stenciled on the rear face in a minimum 4” block letters.

Complies: Yes [ ]  No [ ]

**Pump and Plumbing:**

The pump provided must be sized by the supplier to provide the specified flow rate for the anti-icing device while operating on the available oil supply provided by the valve section from the Illinois Department of Transportation truck. These components will be reviewed with representative of the Department prior to construction to ensure they function with our existing equipment.

Complies: Yes [ ]  No [ ]

Component:

|  |  |
| --- | --- |
| Make:  |       |
| Model: |       |
| Describe: |       |
|       |

An operator adjustable ground speed control system shall be included. The system shall include the proper flow meter, wiring harness, boom switches, etc. Installation is the responsibility of the bidder.

Complies: [ ]  Yes [ ]  No

***Note:*** This control is necessary if this device is to be used with a truck incapable of operation through a spreader control other than the Force America system presently in use by IDOT.

All hydraulic hoses and fittings shall be rated for use with systems operating at 3,000 PSI.

Complies: Yes [ ]  No [ ]

All hydraulic lines shall be run to the front of the trailer and extend a minimum of 8-feet beyond the pintle eye (or long enough to connect to the towing truck). The hoses shall be supported, clamped, bundled and tied to prevent chaffing and damage.

Complies: Yes [ ]  No [ ]

The quick-coupler ends to be used will be provided by the receiving location.

Complies: Yes [ ]  No [ ]

The spray boom shall consist of two vertical sections and a horizontal section. The sections shall be constructed of minimum 1 1/2” schedule 40 stainless steel pipe. Each section shall be fitted with nozzles and each section shall include check valves to prevent leaking when not in use.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| Describe: |       |
|       |

Note: IDOT will consider the use of properly supported schedule 80 poly as equal.

Each boom lane section left, right, and center will be supplied through an adjustable check valve to prevent liquid in the hose from “dribbling” out when the application is not in use. All nozzles will be balanced to ensure the anti-icing /de-icing liquid is distributed equally to all lanes being sprayed.

Complies: [ ]  Yes [ ]  No

The nozzle arrangements must be capable of application rate of 60 gallons per lane mile at 50 MPH over three (3) travel lanes.

Complies: Yes [ ]  No [ ]

The boom shall be capable of application through any section or combination of sections as selected by the operator.

Complies: Yes [ ]  No [ ]

**Manuals:**

Three (3) copies of all operators’ manuals, parts lists, and warranty information shall be provided at time of delivery to each district receiving one or more units.

Complies: Yes [ ]  No [ ]

One (1) set of “Service or Shop” Manuals shall be provided to each delivery location.

Complies: Yes [ ]  No [ ]

***Note:*** The manuals, parts lists, and service or shop manuals listed above may be furnished on DVD in lieu of paper.

Instruction must be performed by qualified factory or dealer personnel covering the operation, routine service, and maintenance of the equipment. The training shall be provided upon delivery, or immediately thereafter. The training shall be for all personnel in the assigned headquarters location of the equipment.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| Describe Training:  |       |
|       |
|       |

***Note:*** *This is not a sales call*. Training not meeting IDOT expectations will be cause to generate a “Complaint-to-Vendor”.

**Requirements Covering Items Detailed Above:**

The trailer shall be furnished complete with all safety components that are required by the current Federal Safety Standards for the size trailer proposed.

Complies: Yes [ ]  No [ ]

All equipment cataloged as standard or safety related shall be furnished and in place and shall be included in the purchase price of the unit. Any parts, tools, and/or accessories not specifically called for but required for proper operation shall be provided.

Complies: Yes [ ]  No [ ]

The component parts of the unit shall be of proper size and design to safely withstand maximum stresses imposed by a capacity load, and the manufacturers rated loads for chains and bearings shall not be exceeded when the unit is loaded with such loads.

Complies: Yes [ ]  No [ ]

Standard tool kits shall be supplied if required.

Complies: Yes [ ]  No [ ]  [ ]  Not required

Full coverage warranty for a minimum **12 months** shall be provided. Bidder shall attach copy of warranty with bid.

Complies: Yes [ ]  No [ ]

|  |  |
| --- | --- |
| Describe warranty:  |       |

Transportation to complete any warranty repair required for the equipment and/or specified accessories or options shall be the responsibility of the bidder or dealer acting as his agent.

Complies: Yes [ ]  No [ ]

**Repair Parts and Service:**

Since continuous operation of this trailer is of the utmost importance and many times of an emergency nature, it is necessary that the successful bidder be in a position to render prompt parts and service within the State of Illinois.

|  |  |
| --- | --- |
| List sources for parts and service :  |       |
|       |
|       |
|       |

The vendor or manufacturer of the unit which is considered for award shall, at the request of the State of Illinois, demonstrate this equipment within the receiving District in the State of Illinois in the presence of authorized state personnel to prove out any features which may be in question.

Complies: Yes [ ]  No [ ]

**Delivery:**

This equipment is to be delivered in first-class operating condition with acceptance subject to Department of Transportation inspection and approval.

|  |  |
| --- | --- |
| If NO to any portion, please explain:  |       |
|       |
|       |

**Bid Package:**

Bidders will need to send two copies of each of the following with their bid response.

1. Bid Document
2. Specification Questionnaire
3. Descriptive Literature