

March 10, 2010

**Thank you for your interest in responding on the following Request for Bids (RFB):**

**SAN JUAN COUNTY PUBLIC WORKS**

**Request for Bids:  
ONE ASPHALT DISTRIBUTOR TRUCK  
Due Date: March 23, 2010**

Sealed Bids will be received and registered in the Reception Office of the County Council; 55 Second St N, 1<sup>st</sup> Floor, Friday Harbor, Washington 98250 until 10:00 am on Tuesday, March 23, 2010. They will then be publicly opened in the San Juan Council Hearing Room; located at 55 Second St N, 1<sup>st</sup> Floor, Friday Harbor, Washington 98250.

Additional specification packets are available at the San Juan County Public Works Department, 915 Spring Street, PO Box 729, Friday Harbor, WA 98250. Phone (360) 370-0500. Or online at: <http://www.sanjuanco.com/publicworks/Bids-and-Specs.aspx>

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# SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

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## EQUIPMENT PROPOSAL FORM

### SAN JUAN COUNTY, WASHINGTON

#### Request for Bids (RFB)

Sealed Bids will be received and registered in the Reception Office of the County Council; 55 Second St N, 1<sup>st</sup> Floor, Friday Harbor, Washington 98250 until 10:00am on Tuesday, March 23, 2010. to supply one Asphalt Distributor Truck. Such proposals will then be publicly opened and read in the San Juan Council Hearing Room; located at 55 Second St N, 1<sup>st</sup> Floor, Friday Harbor, Washington 98250.

Terms, conditions and instructions to the specifications are attached and made a part of the requirements. The truck shall include all items necessary for efficient operation whether or not specifically mentioned in these specifications.

ALL BIDS SHALL BE ACCOMPANIED BY A BID BOND OF NO LESS THAN 5% OF TOTAL BID PRICE SUBMITTED. The bid bond is to be executed by the Bidder and a surety company licensed to do business in the state of Washington.

ALL BIDS SHALL BE MARKED ON OUTSIDE OF ENVELOPE WITH: **“BIDS FOR ASPHALT DISTRIBUTOR TRUCK”**.

1. MAKE AND MODEL of the BASE VEHICLE, Including the Cab and Chassis with Asphalt Distributor as described in Part I & II of the technical specifications:

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Price F.O.B. San Juan County Shop on San Juan Island.  
Base Vehicle, As Per Part I and II.....\$\_\_\_\_\_

Washington State Sales Tax @ \_\_\_\_% .....\$\_\_\_\_\_

Federal Excise Tax shall not be included in the sales price

Total Sales Price with Sales Tax.....\$\_\_\_\_\_

DELIVERY DATE \_\_\_\_\_

PROPOSED BY \_\_\_\_\_

Phone \_\_\_\_\_ email: \_\_\_\_\_

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Street/PO Box

City/State/Zip

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Authorized Signature

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Printed or Typed Name

# SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

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## SECTION I - GENERAL REQUIREMENTS

### GENERAL DESCRIPTION

The equipment requested for this New (unused) 2000 Gallon Asphalt Distributor Truck will be used for applying all types of asphalt emulsions. The successful bidder shall verify the suitability of the specifications to this application.

Only new models in current production and in common usage that will meet or exceed the following requirements will be considered in the award.

### COMPLIANCE WITH SPECIFICATIONS

To be eligible for award, bidders must indicate in the space provided adjacent to each item, whether the equipment they are offering meets, exceeds or deviates from the desired technical specifications. If your answer deviates or exceeds you must qualify it with an explanation. (see pages 8 thru 23).

### ALTERNATIVES

Bids offering suitable and equivalent alternatives to these specifications may be considered, providing the full description and specifications of the alternates are submitted.

It is understood that no two equipment manufacturers design and engineer their products exactly alike. Therefore, minor specification variances from one manufacturer to the next are normal.

It is the County's intention to purchase equipment that is designed, engineered, and rated to satisfactorily perform in the application intended.

Minor variances from the technical specifications will be considered, provided that the primary performance requirements are met. San Juan County reserves the right to accept or reject any proposed minor variances that appear to serve its best interest.

### STANDARD EQUIPMENT

The equipment offered shall include all of the manufacturer's standard equipment for the equipment model offered in addition to the items required by the specifications.

### ACCEPTANCE

No part or parts defective in construction or deficient in any of the requirements of these specifications will be considered as being an accepted consequence of the failure of any employee of San Juan County to point out said defects prior to acceptance of the equipment by San Juan County. Bidder shall include in the bid price the following guarantees or warranties:

# SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

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## Warranty

- a. The successful bidder hereby warrants that for a period of up to (5) years for the chassis and (5) year for the distributor system, with specifically identified warranty exclusions or limitations as provided by the vehicle and equipment manufacturer(s) from the date the units are put into service. A copy of the warranties offered with the exclusions and limitations identified shall be provided with the bidder's proposal. The contractor will, at their own expense, and without any cost whatsoever (parts, labor, travel, shipping) to the County, replace all defective parts and make any repairs that may be required or made necessary by reason of defective design, material or workmanship.
- b. San Juan County may avail itself of the bidder's standard warranty if more beneficial to the County. The pricing for the extended warranties offered in this proposal is \$\_\_\_\_\_ for each unit purchased. (Attach a separate letter if a break-down of the warranty pricing can be identified and state whether the County may pick specific items versus a complete extended warranty package.) Letter attached: \_\_\_ yes \_\_\_ no

## PARTS AND SERVICE

### 1. Service Capability:

To be eligible for award, bidder must be a factory authorized dealer and have facilities, skilled personnel, and parts available to completely service, maintain, overhaul and repair the Base Truck, offered within the local area (100 miles of Anacortes WA inside the U.S.). Parts and Service for the Distributor must be supported in the same way, but may be delegated to one or more manufacturers or authorized distributors who have warranty service agreements for the products offered. San Juan County requests that a letter be attached to your response explaining how all products that will be proposed will be supported during the warranty period and life cycle of the system, which would likely extend for 20 years. Letter attached: \_\_\_ yes \_\_\_ no

### 2. Parts Availability:

The bidder shall maintain an adequate stock of normal replacement parts and shall direct ship within 24 hours or hand deliver within 72 hours to a designated SJC shop. Telephone number where calls will be accepted to order parts:\_\_\_\_\_ (You may attach a supplemental letter to address each of the sources for the truck body and distributor. Letter attached: \_\_\_ Yes \_\_\_ No

### 3. Price Warranty:

The manufacturer and bidder shall guarantee that prices for equipment and parts will be as low as such equipment and parts sold to any other user purchasing in like grade and quantity, and that if at any time the prices are reduced or increased to the general trade, it is understood that San Juan County shall not pay a higher price than any other user effective with the date of such price reduction or increase to the general trade.

# SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

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## 4. Post Delivery Inspection:

Bidder shall include in the bid price the cost of a post delivery inspection service of the equipment, approximately sixty (60) days after it is placed in service. The inspection service shall be performed at a San Juan County Yard and include the following:

1. Check all operating systems for proper operation and adjustment.
2. Check equipment visually for leaks and material defects.
3. Repair or make arrangements for repair if needed.

## 5. Warranty Repair Cost:

**Vendor shall furnish San Juan County no-charge invoices for all work performed under the warranty described in these specifications. Each invoice shall itemize parts used and show labor charges.**

## GOVERNMENT REGULATIONS

The equipment shall be designed and built in compliance with all applicable local, Washington State, and Federal regulations.

## DESCRIPTION OF EQUIPMENT OFFERED

Bidders shall insert a detailed description (and product literature) of the equipment offered in the space provided for each item in the equipment specifications if it varies in any way. If more space is needed, additional sheets shall be attached.

## PRE-AWARD INSPECTION

Prior to bid award, the successful bidder(s) shall furnish the same model of equipment as the item bid for inspection and testing if requested by the County. The successful bidder shall incur the cost of transporting two (2) County employees to the equipment location, if not within the 100 mile area of Anacortes, WA.

## DELIVERY

San Juan County requests delivery within fifty (50) days of purchase order. The complete unit must be delivered within the number of days shown on bid after the date the purchase order is issued. If unable to meet fifty days give best available date.

### A. Liquidated Damages

All time limits stated in the purchase order are of the essence. Should delivery not be completed on or before the time stipulated, it is mutually agreed by and between the successful bidder and the County of San Juan that:

A delay would seriously affect the public and the operation of the San Juan County Public Works Department, that a reduction in the unit price of Seventy-Five Dollars (\$75.00) per calendar day for each and every day for each unit which

## SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

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exceeds the delivery time set forth in the purchase order is the nearest measure of damages for each delay that can be fixed at this time. Therefore, the County and the successful bidder hereby establish said reduction in the unit price of Seventy-Five Dollars (\$75.00) per calendar day for each and every day of the unit as liquidated damages and not as a penalty or forfeiture for the breach of agreement to complete delivery by the successful bidder on or before the time specified in the purchase order. San Juan County may choose to wave or modify liquidated damages with the successful bidder if a mutual agreement can be reached.

- B. Should the successful bidder be obstructed or delayed in completing delivery of, by any default, act, or omission of the County, or by strikes, fires, act of God, or by the inability to obtain materials, equipment or labor due to Federal Government restrictions, then the time of completion shall be extended for such periods as maybe agreed upon by the County and the successful bidder. Shall there be insufficient time to grant such extensions prior to completion date of the contract, the County may, at the time of acceptance of the equipment, waive liquidated damages which may have accrued for failure to complete the work on time, due to any of the above, after hearing evidence as to the reasons for such delay and making a finding as to the cause of same.
- C. In the event that the successful bidder is on strike at the time of the award of the bid, the County reserves the option to accept the first acceptable bid from a manufacturer that is not on strike.

### F.O.B. POINT

Bid price submitted shall include delivery of the completed unit as follows: One 2000 Gallon Asphalt Distributor Truck to the San Juan County Shop, on San Juan Island, contact Mike Copas, (360) 370-0505 or (360) 298-4283.

### METHOD OF AWARD

It is the intention of the County to make award on a total package basis and bidders are encouraged to submit complete bid proposals. However, if unforeseen circumstances occur, San Juan County reserves the right to award on an individual item basis or in any manner that is considered to be in its best interest.

Award of this contract is subject to funding availability.

San Juan County also reserves the right to make no award at its discretion.

### BRAND NAME EQUIPMENT SPECIFIED

Any reference to a brand name product is intended to indicate an acceptable quality level and provide reference as to the type of equipment desired. An equal quality product may be acceptable.

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## EXPERIENCE WITH PRODUCTS OFFERED

San Juan County in writing these specifications did not intend to call out items or components that would be custom, unique or prototypes. The bidder shall provide products from suppliers or manufacturers that are experienced with asphalt distributor applications who have previously engineered and sold those products that specifically fit this Asphalt Distributor Truck.

## OPTIONAL PRICING

Bidders are requested to provide optional pricing for some items. This optional pricing may be considered when evaluating who has the low responsible bid, providing a fair comparison can be established. In addition, there is a section at the end of each bid item that allows the bidder to voluntarily offer non-requested options, but as stated in that section, these will not be considered in the award process. However, San Juan County reserves the right to avail itself to purchase an option if it appears to be in the County's best interest to do so.

## COOPERATIVE PURCHASES

The Washington State Interlocal Cooperative Act RCW 39.34, provides that other governmental agencies may purchase goods and services on this solicitation or contract in accordance with the terms and prices indicated therein if all parties are willing. Are you willing to extend this contract in accordance with RCW 39.34? Yes\_\_\_\_No\_\_\_\_

## STATEMENT OF ORIGIN

Units shall be delivered with a statement of origin and title application completely filled out.

## TERMINATION

The County may cancel any purchase order/contract, or any part thereof, by written notice at any time without penalty if the vendor fails to comply with the terms, instructions, specifications, delivery completion date, or to perform the work with diligence.

## ADDITIONAL INFORMATION

If additional information is desired, please contact Mike Copas, San Juan County ER&R Division, at (360) 370-0505 or (360) 298-4283.

# SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

## PART I: ASPHALT DISTRIBUTOR TRUCK

Description	Check If As Specified	Describe Fully If Not As Specified
<b>Part I, Item A – Truck Cab and Chassis</b>		
Item A: Truck Cab and Chassis 37,000 Gross Vehicle Weight Rating, 2010 Model Year or newer. The chassis shall be rated for medium duty or better. <b>State Make and Model proposed:</b>		
1. General configuration, use and performance		
1.1. 14,000 Lb. GAWR-F (Front), 23,000 Lb. GAWR-R (Rear), 37,000 Lb. GVWR (Gross Vehicle Weight Rating).		
1.2. Minimum Performance Characteristics: In the lowest gear the truck will have an operational speed of 2 MPH at minimum of 1,200 engine RPM (this shall be calculated without torque converter slippage and without the need to apply the brakes). In the highest gear the truck will have an operational speed of 60 MPH at 80% of the maximum or governed engine RPM. The truck, when loaded to 37,000 Lbs. shall be capable of starting on a grade of 39% (optimal conditions providing that wheel spin does not occur). Although an automatic transmission is preferred a standard transmission that meets or exceeds all of the specifications is acceptable (must exceed engine hp and torque output).		
1.3. Turning radius is critical to the easy operation of this truck.		
1.4. Set back axle		
2. Engine and related equipment		
2.1. A turbocharged and after cooled in-line diesel 6 cylinder engine, 7.0 Liter displacement or greater, with a minimum rating of 260 Gross Horsepower at 2,200 RPM and 800 Lb./Ft. torque at 1,200 RPM shall be provided.		

## SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

Description	Check If As Specified	Describe Fully If Not Specified
<b>Part I, Item A – Truck Cab and Chassis</b>		
2.2. The engine shall be equipped with the following components: 2.2.1. 120 Amp alternator or greater 2.2.2. 15.5 CFM air compressor 2.2.3. 1000 Sq. In. or larger radiator 2.2.4. Long life coolant hoses (such as EPDM or silicone) 2.2.5. Engine fan with an on/off drive system 2.2.6. Manual fan over-ride switch on dash 2.2.7. Engine coolant filter, spin-on style, with ball valves on inlet and outlet. 2.2.8. The battery box location under the cab 2.2.9. Remote jump studs (power and ground) 2.2.10. Battery disconnect switch(s)		
3. Transmission 3.1. Although an automatic transmission is preferred a standard transmission that meets or exceeds all of the specifications stated is acceptable (must exceed engine hp and torque output). Please show pricing and availability for all transmission options offered. 3.2. Preferred standard transmission: Eaton Fuller.		
4. Front Axle, 14,000 Lb. capacity. (GAWR-F) 4.1. 16,000 Lb. spring suspension 4.2. Shock absorbers 4.3. Power steering 4.4. S-cam drum front brakes 16"x6" 4.5. Front brake shields 4.6. Automatic slack adjusters - clearance sensing		
5. Rear Drive Axle: 5.1. 23,000 Lb. capacity 5.2. Gearing to provide the speeds as called out in specification item number 1.2 that meets the need to provide extremely low speed and highway speed operations for this truck. 5.3. Rear suspension: 23,000 Lb. capacity 5.4. Rear shock absorbers 5.5. S-cam rear brakes, 16.5"x7" 5.6. Rear brake shields 5.7. Automatic slack adjusters - clearance sensing. 5.8. Type 30/30 self-breathing or life-seal long stroke brake chambers		

## SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

Description Part I, Item A – Truck Cab and Chassis	Check If As Specified	Describe Fully If Not Specified
<p>6. Air Brake System – Antilock 4S/4M with Automatic Traction Control enhancement.</p> <p>6.1. Air dryer with spin-on cartridge.</p> <p>6.2. Air tanks shall be located below the frame rails or under the cab (outboard the rails) to provide mechanic’s access to the vehicle wiring, hydraulic and air lines that are located inside the frame rails.</p> <p>6.3. Air tanks shall have both manual and remotely operated drain valves (such as remote cable valves).</p>		
<p>7. Wheelbase and other dimensions.</p> <p>7.1. 188-192 In. wheel base with a clear cab to rear axle. Distributor manufacturer to decide CA length for best weight distribution.</p> <p>7.2. Heavy duty ¼” C-channel full width swept back front bumper shall be provided</p> <p>7.3. Two front tow hooks</p>		
<p>8. Frame and chassis components:</p> <p>8.1. Main rail rating 2,000,000 RBM per rail or more</p> <p>8.2. Huck bolt style fasteners for cross members and front and rear suspension components.</p> <p>8.3. Single 50 gallon aluminum fuel tank mounted under the cab with no back of cab protrusion. Accessible from driver’s side.</p> <p>8.4. Primary fuel/water separator in addition to secondary filter</p> <p>8.5. Fuel system primer pump</p>		
<p>9. Truck Cab and Fenders:</p> <p>9.1. Aluminum or composite conventional style cab.</p> <p>9.2. Windshield, side and rear glass: Largest available, including all high visibility options such as lower side windows drop down wing windows, etc.</p>		
<p>9.3. Tilting composite hood with tilt assist system</p> <p>9.3.1. Bug screen or expanded metal stone guard</p> <p>9.3.2. Rubber fender wheel well extenders and mud flaps or extended splash shields at the rear of the fenders shall be provided.</p> <p>9.3.3. Rubber or composite shielding shall protect the headlights and wiring and the side of the engine.</p> <p>9.3.4. Sound deadening shall be provided under the hood and on the firewall.</p>		

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<b>Description</b>	<b>Check If As Specified</b>	<b>Describe Fully If Not As Specified</b>
<b>Part I, Item A – Truck Cab and Chassis</b>		
10. Cab Exterior Equipment: <ul style="list-style-type: none"> <li>10.1. Single or dual air horns with shields, dual electric horns.</li> <li>10.2. Halogen headlamps</li> <li>10.3. Roof mounted dual beacon amber strobe with lighted rocker switch.</li> <li>10.4. LED series recessed mount marker and rear tail lights.</li> <li>10.5. 4-way or dual-axis power adjustable mirrors with integral heaters with separate heated convex mirrors.</li> <li>10.6. Additional RH front fender convex mirror and swing-arm bracket</li> <li>10.7. Door windows shall be power operated with driver access to both windows.</li> <li>10.8. Door locks manual or power operated</li> </ul>		

## SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

Description Part I, Item A – Truck Cab and Chassis	Check If As Specified	Describe Fully If Not As Specified
<p>11. Cab Interior Equipment:</p> <p>11.1. Vinyl or easy wipe clean interior package that includes a padded headliner, back panel and full door panels shall be provided.</p> <p>11.2. The maximum available insulation to reduce noise shall be provided so the operator can hear 2-way radio and phone operations without undue volume.</p> <p>11.3. Battery disconnect or “kill” switch shall be mounted in cab close to door and clearly marked.</p> <p>11.4. Dash shall be of ergonomic wrap around design unless it impedes distributor controls.</p> <p>11.5. Door activated dome light(s). Dome light(s) shall be activated by opening either door.</p> <p>11.6. HVAC system (air conditioning) for maximum heat and defrosting capability</p> <p>11.7. Manual shut-off valves for the heater lines near the engine</p> <p>11.8. Safety equipment:</p> <p style="padding-left: 20px;">11.8.1. 5-Lb. fire extinguisher</p> <p style="padding-left: 20px;">11.8.2. Safety triangle set</p> <p style="padding-left: 20px;">11.8.3. Back wall mounted console for paperwork and operator manuals.</p> <p>11.9. High back air suspension driver’s seat</p> <p style="padding-left: 20px;">11.9.1. Dual arm rests</p> <p style="padding-left: 20px;">11.9.2. Vinyl or similar easy wipe clean covering, no fabric</p> <p style="padding-left: 20px;">11.9.3. 3-point retracting seat belt</p> <p>11.10. High back non-suspension passenger seat</p> <p style="padding-left: 20px;">11.10.1. Without arm rests</p> <p style="padding-left: 20px;">11.10.2. Vinyl or similar easy wipe clean covering, no fabric</p> <p style="padding-left: 20px;">11.10.3. 3-point retracting seat belt</p> <p>11.11. Tilt and telescoping adjustable steering column.</p> <p>11.12. 18 In. steering wheel.</p>		

## SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

Description	Check If As Specified	Describe Fully If Not As Specified
<b>Part I, Item A – Truck Cab and Chassis</b>		
12. Electrical: <ul style="list-style-type: none"> <li>12.1. Standard instruments, plus:                             <ul style="list-style-type: none"> <li>12.1.1. Air cleaner restriction indicator</li> <li>12.1.2. Transmission temperature</li> <li>12.1.3. Engine hour meter</li> </ul> </li> <li>12.2. Standard switches plus:                             <ul style="list-style-type: none"> <li>12.2.1. (6) unlabeled spare switches</li> <li>12.2.2. Output wiring shall be outside of the cab and labeled</li> <li>12.2.3. Each switch must have a 10-amp rating</li> </ul> </li> <li>12.3. AM/FM radio with Weather Band, two speakers, standard antenna.</li> <li>12.4. Battery Power, Ignition Power and Ground studs located in or below the dash for accessory item.</li> </ul>		
13. Wheels and Tires: <ul style="list-style-type: none"> <li>13.1. Front: 315/80R22.5 Bridgestone R294 mounted on aluminum non-polished wheels</li> <li>13.2. Rear: 11R22.5 Bridgestone R250F mounted on aluminum non-polished wheels</li> <li>13.3. Aluminum rear hubs</li> </ul>		
14. Maximum Chassis Weight: Shall not exceed 11,000 Lbs. before fuel or operator. (As-Built Factory Weight Slip.)		
15. Paint: Polyurethane Single Stage Enamel <ul style="list-style-type: none"> <li>15.1. Cab: Dupont Safety Yellow #43536</li> <li>15.2. Provide paint standard for approval (post bid requirement)</li> <li>15.3. Frame: Black</li> <li>15.4. Front bumper: Prefer polished aluminum or chrome.</li> </ul>		
16. Manufacturer's Warranty: <ul style="list-style-type: none"> <li>16.1. Basic Vehicle Coverage including Electrical System and Instruments: 5 Years/50,000 Miles</li> <li>16.2. Engine, Transmission and Drive Train Components: 5 Years/50,000 Miles</li> <li>16.3. 5 Year Battery and Towing/Roadside Assistance warranty shall also be provided</li> <li>16.4. The bidder shall submit with this proposal a copy of the factory warranty policies which will call out all exclusions and limitations for the basic and extended warranty coverage offered</li> </ul>		
17. Manuals: One full set of shop and parts manuals. Standard operation and maintenance manuals, CD's preferred		

## SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

Description Part I, Item A – Truck Cab and Chassis	Check If As Specified	Describe Fully If Not As Specified
18. Spare Filters: One full set of spare filters and one fan belt for each vehicle ordered shall be provided: 18.1. All engine filters, including air filter 18.2. Transmission filter set (if applicable) 18.3. HVAC filter (if applicable)		
19. A log-on ID and Password to the manufacturer’s service and parts web based system to check for part numbers, field service bulletins and vehicle recalls shall be provided by the successful bidder. In addition, a 24-hour toll free help number for the manufacturer shall also be provided.		
20. Other Chassis Options Available and Pertinent for this bid or truck purpose only. (Describe in the spaces that follow) The bidder is not required to offer any additional options. Voluntarily offered options will not be considered until after the award has been made to the lowest responsible bidder and shall be beneficial in nature to the purchaser and not change the scope or outcome of the original bid.		
		<b>Option Price</b>
Supplemental page(s) or letter enclosed: ___ Yes ___ No		

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## PART II: ASPHALT DISTRIBUTOR SYSTEM

### SPECIFICATIONS ASPHALT DISTRIBUTOR

#### A. FUNCTIONS:

The distributor shall be able to accurately apply all types of bituminous materials, as well as be equipped with valves and plumbing to perform the following functions:

1. Load tank with pump suction. \_\_\_\_\_
  2. Circulate material in tank. \_\_\_\_\_
  3. Circulate material in spray bar. \_\_\_\_\_
  4. Spray at a constant desired rate regardless of variance in truck speed and spray bar width. \_\_\_\_\_
  5. Return material to tank from spray bar or hand spray by pump action. \_\_\_\_\_
  6. Transfer material from an outside source to another outside source without material entering tank. \_\_\_\_\_
  7. Pump material back to supply source. \_\_\_\_\_
  8. Clean out pump, spray bar, hand spray, and piping. \_\_\_\_\_
- NOTE:** Provisions shall be made for easily draining the circulation system independently of the tank, for flushing spray bar, circulating system, and asphalt pump with suitable solvent.

#### B. TANK CAPACITY AND CONSTRUCTION:

1. Tank shall have minimum capacity of 2000 gallons. \_\_\_\_\_
2. Shape of tank shall be elliptical cross sections, with long axis horizontal. Size of oval and length of tank to be selected by the manufacturer to give the best load distribution on the truck chassis provided. \_\_\_\_\_
3. The tank body shall be grade A steel tank, the shell to be ten gauge and the heads and baffles seven gauge. \_\_\_\_\_
4. The baffle plates shall fit the shape of the main body and support the main body of tank as well as controlling the motion of the liquid material that is being transported. Each baffle shall have an opening at the top and bottom to allow fluid to flow freely to the tank sump. \_\_\_\_\_
5. Staggered crawl holes twenty inches in diameter shall be placed in each baffle for the purpose of inspection and cleaning. \_\_\_\_\_
6. A well on top of the tank shall be provided with a \_\_\_\_\_

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minimum wall height of six inches. A twenty inch manhole shall be located inside the well with a hinged quick opening cover and fitted with a high temperature gasket. A three inch diameter overflow pipe shall be fitted inside the well, flush with the tank shell to drain through the bottom of the tank clearing all chassis members.

7. Tank body shall be insulated with a minimum of two inch mineral wool (Note: Fiberglass and foam are not acceptable) insulation. The insulation shall be protected and sealed from the elements by an aluminum jacket with a minimum thickness of .040. The front and rear tank heads shall have a minimum of 2 inches of mineral wool insulation and protected by .120 gauge aluminum and sealed from the elements.
8. The tank shall have a rear mounted ladder and top mounted grip strut (no-slip) catwalk 24 inches wide plus five-inch border around the dome well.  
**NOTE:** Diamond plate not acceptable.
9. A float type gauge shall be installed with a scale (reading in 50 gallon increments) mounted on the driver's side, readable from the ground and the cab rearview mirror. Included shall be a measuring stick reading in 50-gallon increments.
10. A sampling valve shall be located on the rear of the tank.
11. A heated 4" plug valve shall be located at the rear head of the tank for positive cut-off of material between tank and bitumen pump.
12. Hose storage tray shall be provided in easy reach from ground level on the driver's side of the tank.
13. Tank mounting shall be single blade bolster design, resiliency (steel spring) attached to the frame in five positions to allow for any twisting motion, expansion, or contraction.
14. Fenders shall be full dual flanged aluminum with regulation flaps.

## C. HEATING SYSTEM:

1. Dual (2) eight inch "U" type flues shall run the full length of the tank. The inlet of the flue shall be on the same horizontal plane as the outlet to allow heating with a minimum amount of material in the tank. The flues shall have internal stainless steel liners, two feet long on the burner end and a stainless steel stack on the exhaust end.
2. An integral high pressure burner, atomizing and solid state ignition type using diesel fuel supplied from the trucks main fuel supply by means of a fuel pump driven by an electric motor.

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## D. POWER UNIT:

1. Hydrostatic transmission will consist of an infinitely variable electronic displacement control axial piston pump with a minimum displacement of 55cc (3.35cu. in.) per revolution driven by a transmission PTO. (Crank drive optional) **NOTE:** There shall be a relief valve incorporated in the hydrostatic transmission for the purpose of safety and protection of major components. The axial piston motor must be equipped with loop flushing valves, and a displacement of 75cc (4.57cu. in.) or an optional 25cc (1.52cu. in.) motor with a 4 to 1 gearbox.

\_\_\_\_\_

## E. HEATED BITUMEN PUMP:

1. The heated bitumen pump shall be of the gear type with four inch inlet and outlet capable of dispensing 400 gallons per minute running clockwise or counterclockwise, driven by the hydrostatic transmission. Shaft shall be sealed with a Teflon replaceable seal. **NOTE:** Packing type seal is not acceptable
2. Hot truck engine coolant heat loop shall include; asphalt pump, asphalt valves & flush system.

\_\_\_\_\_

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## F. HYDRAULIC FLUID RESERVOIR:

1. Shall have a minimum capacity of 15 gallons with a sight level gauge. Included in the return line shall be a spin on ten-micron filter element located in easy reach for servicing. Tank shall be mounted to the frame of the truck.

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## G. FEED LINES:

2. Shall be stainless steel with o-ring swivel connections.

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## H. SPRAY BAR SYSTEM:

# SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

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1. The spray bar shall be:
  - a) Full circulating type, meaning that all materials shall circulate throughout the interior of the bar structure, for the purpose of keeping the bituminous material at even temperature, and the poppet type valves free of cooling material that may cause plugging of the spray nozzles. NOTE: Minimum ID circulation path shall not be less than 1 7/8".
  - b) Have enclosed poppet valves. NO EXCEPTIONS:
  - c) Have an overall working length of 16 feet, when wings are extended. NOTE: The center section shall be one piece and not exceed 8 feet in length while in transport mode.
  
2. The wings shall be:
  - a) 4 feet in length and fold at 2 foot increments, rotary relieving type with a built in "break-away" feature to prevent damage to the spray bar system. A cotter pin shall be incorporated as a shear pin (a bolt or roll pin is not acceptable) when struck by a foreign object during normal operations.
  - b) There shall be a "tilt switch" on each folding segment to prevent spraying when lifted to the vertical position.
  - c) While in the transport mode, the wings shall be fully supported. (16' or wider).
  
3. The line marker valves (2) shall be located on the outer most part of the right (1) wing and the left (1) wing and controlled by electric over air cylinder from the cab mounted control center console.
  
4. The spray bar valves shall be:
  - a) Totally enclosed poppet type within the spray bar (no exceptions).
  - b) Controlled from the cab mounted control center, in. one foot or three valve increments by electrical air cylinders.
  - c) All air-lines shall be wire braided and have a 3000 lb. rating.
  
5. The complete spray bar including wings shall:
  - a) Shift a minimum of 12 inches to the left or right of center. Have vertical movement of 12 inches minimum. All motions shall be made by hydraulic cylinders actuated from switches located on the control panel in the cab and on the control panel located at the rear of the distributor.
  - b) Incorporate a hydraulic lock-out valve to hold the bar at any height within this range. A mechanically adjustable stop shall be provided to limit downward travel. **NOTE:** Cast iron parts are not acceptable in the spray system.

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## I. ASPHALT VALVE SELECTOR

1. Shall be mounted on left side of truck away from the rear of the truck. This valve selector must be all pneumatic no solenoid valves can be used on the valve selector system.
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## J. CAB MOUNTED CONTROL PANEL:

1. A Computerized rate control module shall be installed within easy reach of the operator. This module must contain a Motorola HC11 or HC12 series CMOS microprocessor, a digital display, and all switches and digital indicators necessary to establish and automatically maintain a spread rate. All these controls and indicators must reside within one easily replaced box.

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2. This module must provide all of the following features:
  - a) It must be promptly replaceable by one person within 2 minutes, with no more complexity than removing two mounting bolts and one connector.
  - b) It must contain all toggle switches to control spread rate, pump idle rate, spray bar size and movement, both horizontal and vertical, and wing movements. Toggle switches must be of high quality, field replaceable without soldering.
  - c) It must provide automatic control of pump speed to maintain a desired spread rate, and compensate for changes in spray bar width, truck speed, and reasonable changes in engine RPM.
  - d) It must provide digital adjustment of spread rate with a resolution of 0.01 GSY, by means of a single spring loaded toggle switch. It must provide similar digital adjustment for idle (recalculate) speed.
  - e) The computerized rate control must be capable of self calibrating EDC hydraulic valve thresholds, without operator entry of start parameters. It must be all digital, and employ no operational amplifiers or analog comparators, nor utilize internal negative power supply systems. It shall utilize an efficient PWM (pulse-width modulated) output circuit to energize a proportional EDC valve, with PWM resolution better than 1 part out of 5000.
  - f) An illuminated vacuum florescent display shall provide digital indications of spread rate, GPM, FPM, Idle GPM, Gallons used, square yards sprayed and feet traveled. Metric display capability shall be included. The fluorescent display shall provide a minimum of 48 characters.
  - g) Safety reminder messages shall be available on the digital display.

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- h) This cab module must communicate with a valve control module by means of a single serial cable. All power and signal paths for fpm, gpm, logging, calibration, setup, and valve control must flow through this cable, so that all parameters and data are available to any module connected to the network. The cable must be readily available modular CAT-5 cable, protected by conduit along the truck chassis. Redundant spare cable must be installed.
  - i) Serial communications between cab and valve modules must comply with RS-485 standard specifications, allowing two-wire bidirectional operation in high EMI noise environment, and rejecting common mode noise. Two RJ-II connectors shall be provided on each module to allow for a daisy chained network, which provides sharing of system data to optional printers.
  - j) RS-232, RS-232C specifications communications between CAB and Rear Mounted modules shall NOT be acceptable. External RS-232 to RS-485 adapters shall NOT be acceptable.
2. All spraying functions and bar movement shall be controlled by switches located on the panel, which include:
- a) Master switch enable spray bar valves to move open or closed in response to their individual switches. Also sets equalizer valves open when switch is on, closed when switch is off.
  - b) Pump switch actuates hydraulic cylinder that controls direction of hydrostatic pump,
  - c) Swing switch sideways motion of spray bar.
  - d) Lift switch up down motion of entire spray bar.
  - e) Left wing switch wing to pivot 90 degrees.
  - f) Right wing switch wing to pivot 90 degrees.
  - g) Main bar switches causes groups of three spray (poppet type) valves in main spray bar to open and close,
  - h) Left wing switch causes groups of three (poppet type) valves in left wing to open and close,
  - i) Right wing switch causes groups of three (poppet type) valves in right wing to open or close,
  - j) j. Left line marker switch left hand ( driver side) marker valve to turn on or off.
  - k) k. Right line marker switch right hand ( curbside) marker valve to turn on or off.
  - l) PTO switch acts with direct air to engage or disengage power take off.
  - m) Beacon switch activates beacon warning light

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4. Gauges and LCD (minimum 0.2 inch letter and numbers) digital readouts:
  - a) Recording bituminous meter-indicates forward progress in feet per minute and total sq. yd. covered
  - b) GPM meter bituminous pump flow rate in gallons per minute and total gallon sprayed.
  - c) Ground speed shall be measured by the ring gear Sensor in the truck rear axle ring gear. **NOTE:** radar and fifth wheels are not acceptable. A tight seal must be used to prevent contamination to the gears and other internal parts and fluid.

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## K. REAR MOUNTED CONTROL PANEL:

1. Controls on rear panel shall include:
  - a) Swing switch sideways motion of spray bar.
  - b) Lift switch up and down motion of entire spray bar.
  - c) Left wing switch pivot up and down.
  - d) Right wing switch pivot up and down.
  - e) Panel shall be equipped with rain cover.
  
2. A computerized valve control module must be installed near the hydraulic and pneumatic valve manifolds. This valve control module must also be field replaceable in 5 minutes with simple tools.
  - a) The valve control module shall provide the following features:
    - a. It must contain a Motorola HC11 or HC12 series CMOS microprocessor. This processor is required for high noise immunity, low operating current, and EEPROM memory for easy upgrades. It also contains an automatic hardware watchdog timer, which instantly restores program control in case spikes or glitches are encountered on the truck electrical system.
  - b) It must utilize rugged, short circuit-proof, current-limited and thermally protected outputs for all valves operated by The Computerized Rate Control. These outputs shall withstand prolonged accidental mis-wiring and short circuits, and self-restore when the fault is removed.
  - c) GPM and FPM inputs must employ zero speed capable Hall-effect sensors. The FPM sensor must utilize the rear axle ring gear for reliable motion detection. The GPM sensor must utilize a sensor plate or gear directly attached to the cargo pump shaft. All sensor inputs **MUST** be opto-isolated. It shall

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# SAN JUAN COUNTY DISTRIBUTOR TRUCK SPECIFICATION

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exclusively use RS-485 specification communications, and have two RJ-II type connectors.

- d) It shall have plug-in connectors with screw terminal strips built into the connectors.
- e) It must be all digital, and employ no operational amplifiers or analog comparators, nor utilize internal negative power supply systems.

## L. WASH DOWN SYSTEM:

- 1. Solvent under pressure shall be routed to a 25 foot long hose and shall be fitted with an on-off valve. \_\_\_\_\_

## M. BITUMINOUS HAND SPRAY SYSTEM:

- 1. 50' rubber 3/4" I.D. high temperature asphalt hose, reel mounted. \_\_\_\_\_
- 2. 5 foot aluminum, 2 nozzle hand-wand with cold handles and drip free valve, connected to hose with a 360 degree swivel \_\_\_\_\_

## N. TRANSFER VALVE:

- 1. A-3 inch gate valve shall be provided on both lines, where hoses are connected for load, unload, and transfer of bituminous products. \_\_\_\_\_

## O. BITUMINOUS PUMP AND SPRAY BAR FLUSHING:

- 2. A valve shall be located on the bitumen pump to allow diesel fuel from a heated flush tank to flow through the spray bar for the purpose of flushing it clean of residual bitumen. The bar fuel shall be returned to the flush fuel tank by a second, valve located on the systems spray bar circulate line. \_\_\_\_\_

## P. ASPHALT VALVE SELECTOR

- 1. All asphalt valves shall be heated by engine coolant and air operated. Operation shall be from a lockable console outside the cab on the Driver's side of the unit. Unit shall incorporate a lockout system where by only the appropriate valves for the desired function can be opened. \_\_\_\_\_

## Q. PAINT:

- 1. All non aluminum components shall be painted with \_\_\_\_\_

