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SCHEDULE B - QUOTATION

**RFQ Title:** Supply and Delivery of Tandem Axle Dump Trucks with Winter Maintenance Equipment

**RFQ No.: 1220-040-2024-093**

**CONTRACTOR**

**Legal Name:**

**Contact Person and Title:**

**Business Address:**

**Business Telephone:**

**Business Fax:**

**Business E-Mail Address:**

**CITY OF SURREY**

City Representative: Sunny Kaila, Manager, Procurement Services

E-mail for PDF Files: [purchasing@surrey.ca](mailto:purchasing@surrey.ca)

1.If this Quotation is accepted by the City, a contract will be created as described in:

(a) the Agreement;

(b) the RFQ; and

(c) other terms, if any, that are agreed to by the parties in writing.

2.Capitalized terms used and not defined in this Quotation will have the meanings given to them in the RFQ. Except as specifically modified by this Quotation, all terms, conditions, representations, warranties and covenants as set out in the RFQ will remain in full force and effect.

3. I/We have reviewed the RFQ Attachment 1 – Agreement – Goods and Services. If requested by the City, I/we would be prepared to enter into that Agreement, amended by the following departures (list, if any):

**Section Requested Departure(s)**

**Please State Reason for the Departure(s):**

4. The City requires that the successful Contractor have the following in place **before providing the Goods and Services**:

1. Workers’ Compensation Board coverage in good standing and further, if an “Owner Operator” is involved, personal operator protection (P.O.P.) will be provided,

Workers' Compensation Registration Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

1. Prime Contractor qualified coordinator is Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

and Contact Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

1. Insurance coverage for the amounts required in the proposed Agreement as a minimum, naming the City as additional insured and generally in compliance with the City’s sample insurance certificate form available on the City’s Website at [www.surrey.ca](http://www.surrey.ca) search [Standard Certificate of Insurance](http://www.surrey.ca/files/DCT_Standard_Certificate_of_Insurance_2014.docx);

(d) City of Surrey or Intermunicipal Business License: Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

(e) If the Contractor’s Goods and Services are subject to GST, the Contractor’s GST Number is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; and

(f) If the Contractor is a company, the company name indicated above is registered with the Registrar of Companies in the Province of British Columbia, Canada, Incorporation Number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

As of the date of this Quotation, we advise that we have the ability to meet all of the above requirements **except as follows** (list, if any):

**Requested Departure(s):**

**Please State Reason for the Departure(s):**

5.The Contractor acknowledges that the departures it has requested in Sections 3 and 4 of this Quotation will not form part of the Agreement unless and until the City agrees to them in writing by initialing or otherwise specifically consenting in writing to be bound by any of them.

**Changes and Additions to Specifications:**

6. In addition to the warranties provided in the Agreement, this Quotation includes the following warranties:

7. I/We have reviewed the RFQ Attachment 1, Schedule A – Specifications of Goods and Scope of Services. If requested by the City, I/we would be prepared to meet those requirements, amended by the following departures and additions (list, if any):

**Requested Departure(s)**

**Please State Reason for the Departure(s):**

**Fees and Payments**

8.Contractors are encouraged to submit pricing based on the most recently available model year. The City will allow pricing adjustments based on price changes from the manufacturer. The Contractor will be expected to provide factory invoices to justify increases.

Please provide pricing on Section 9, Section 10 and Section 11 on the applicable trucks quoted. It is the intent of this Specification to provide for the purchase of two (more or less) new and unused **(Section 9) CNG Fueled Truck**, OR **(Section 10) Diesel Fueled Truck**, OR **(Section 11) Electric Vehicle (EV) Tandem Axle Truck**, or a combination of fuel types.

As part of their Quotation(s), Contractors should submit Schedule B-1, Schedule B-2 and Schedule B-3 - Preferred Technical Specifications Response Forms (as applicable) by completing the spreadsheet’s third right-most columns.

9 For **CNG Fueled Truck** option if selected by the City, the Contractor offers to supply to the City of Surrey the Goods and Services for the prices plus applicable taxes as follows:

9.1 Year, Make & Model: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9.2 Pricing:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **F.O.B.**  **Destination Prepaid** | | **Payment Terms:**  A cash discount of % will beallowed if invoices are paid within days, or the day of the month following, or net 30 days, on a best effort basis. | | **Ship Via:** |
| **Item** | **Particulars** | | | **Cost per Unit (CDN $)** |
| 1 | Cab and Chassis Price: | | | $ |
| 2 | Dump Box & Hitch | | | $ |
| 3 | IQAN, Hydraulics | | | $ |
| 4 | Snowplow including hitch | | | $ |
| 5 | Salt Spreader | | | $ |
| 6 | Province of B.C. Environmental Levy (Battery): | | | $ |
| 7 | Province of B.C. Advance Disposal Fee (Tires): | | | $ |
| 8 | Air Conditioning Surcharge: | | | $ |
| 9 | Other Fees/Levies (please state): | | | $ |
|  | a.) | | |  |
|  | b.) | | |  |
|  | c.) | | |  |
| 10 | **Subtotal:** | | | $ |
| 11 | **GST (5%)** | | | $ |
| 12 | **PST (7%)** | | | $ |
| 13 | **TOTAL QUOTATION PRICE FOR ONE UNIT:** | | | **$** |
| ***Pricing is firm until (state date):*** | | |  | |
| ***ALL PRICING IN CANADIAN DOLLARS*** | | | | |

9.3 The completed unit shall be delivered within \_\_ days after receipt of Purchase Order.

9.4 Please indicate volume discounts where applicable:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Vehicles purchased** | **2** | **3** | **4** | **5** | **6** | **7** |
| **Discount (% or $)** |  |  |  |  |  |  |

* 1. Please complete if applicable: British Columbia Certified 

9.6 Complete Vehicle: State Warranty (no less than one (1) year) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9.7 Extended Warranty Options: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9.8 Warranty repairs shall be performed at: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9.9 In addition to the warranties provided in the Draft Quotation Agreement, this Quotation includes the following warranties:

1. For **Diesel Fueled Truck** option if selected by the City, the Contractor offers to supply to the City of Surrey the Goods and Services for the prices plus applicable taxes as follows:

10.1 Year, Make & Model: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10.2 Pricing:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **F.O.B.**  **Destination Prepaid** | | **Payment Terms:**  A cash discount of % will beallowed if invoices are paid within days, or the day of the month following, or net 30 days, on a best effort basis. | | **Ship Via:** |
| **Item** | **Particulars** | | | **Cost per Unit (CDN $)** |
| 1 | Cab and Chassis Price: | | | $ |
| 2 | Dump Box & Hitch | | | $ |
| 3 | IQAN, Hydraulics | | | $ |
| 4 | Snowplow including hitch | | | $ |
| 5 | Salt Spreader | | | $ |
| 6 | Province of B.C. Environmental Levy (Battery): | | | $ |
| 7 | Province of B.C. Advance Disposal Fee (Tires): | | | $ |
| 8 | Air Conditioning Surcharge: | | | $ |
| 9 | Other Fees/Levies (please state): | | | $ |
|  | a.) | | |  |
|  | b.) | | |  |
|  | c.) | | |  |
| 10 | **Subtotal:** | | | $ |
| 11 | **GST (5%)** | | | $ |
| 12 | **PST (7%)** | | | $ |
| 13 | **TOTAL QUOTATION PRICE FOR ONE UNIT:** | | | **$** |
| ***Pricing is firm until (state date):*** | | |  | |
| ***ALL PRICING IN CANADIAN DOLLARS*** | | | | |

10.3 The completed unit shall be delivered within \_\_ days after receipt of Purchase Order.

10.4 Please indicate volume discounts where applicable:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Vehicles purchased** | **2** | **3** | **4** | **5** | **6** | **7** |
| **Discount (% or $)** |  |  |  |  |  |  |

* 1. Please complete if applicable: British Columbia Certified 

10.6 Complete Vehicle: State Warranty (no less than one (1) year) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10.7 Extended Warranty Options: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10.8 Warranty repairs shall be performed at: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10.9 In addition to the warranties provided in the Draft Quotation Agreement, this Quotation includes the following warranties:

1. For **Electric Vehicle (EV)Tandem Axle Truck** option if selected by the City, the Contractor offers to supply to the City of Surrey the Goods and Services for the prices plus applicable taxes as follows:

11.1 Year, Make & Model: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11.2 Pricing:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **F.O.B.**  **Destination Prepaid** | | **Payment Terms:**  A cash discount of % will beallowed if invoices are paid within days, or the day of the month following, or net 30 days, on a best effort basis. | | **Ship Via:** |
| **Item** | **Particulars** | | | **Cost per Unit (CDN $)** |
| 1 | Cab and Chassis Price: | | | $ |
| 2 | Dump Box & Hitch | | | $ |
| 3 | IQAN, Hydraulics | | | $ |
| 4 | Snowplow including hitch | | | $ |
| 5 | Salt Spreader | | | $ |
| 6 | Province of B.C. Environmental Levy (Battery): | | | $ |
| 7 | Province of B.C. Advance Disposal Fee (Tires): | | | $ |
| 8 | Air Conditioning Surcharge: | | | $ |
| 9 | Other Fees/Levies (please state): | | | $ |
|  | a.) | | |  |
|  | b.) | | |  |
|  | c.) | | |  |
| 10 | **Subtotal:** | | | $ |
| 11 | **GST (5%)** | | | $ |
| 12 | **PST (7%)** | | | $ |
| 13 | **TOTAL QUOTATION PRICE FOR ONE UNIT:** | | | **$** |
| ***Pricing is firm until (state date):*** | | |  | |
| ***ALL PRICING IN CANADIAN DOLLARS*** | | | | |

11.3 The completed unit shall be delivered within \_\_ days after receipt of Purchase Order.

11.4 Please indicate volume discounts where applicable:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **# Vehicles purchased** | **2** | **3** | **4** | **5** | **6** | **7** |
| **Discount (% or $)** |  |  |  |  |  |  |

* 1. Please complete if applicable: British Columbia Certified 

11.6 Complete Vehicle: State Warranty (no less than one (1) year) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11.7 Extended Warranty Options: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11.8 Warranty repairs shall be performed at: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11.9 In addition to the warranties provided in the Draft Quotation Agreement, this Quotation includes the following warranties:

**Time Schedule:**

1. Contractors should provide an estimated schedule, with major item descriptions and times indicating a commitment to provide the Goods and perform the Services within the time specified (use the spaces provided and/or attach additional pages, if necessary). Staggered delivery of units is acceptable permitted that Contractors approximate the quantity, and year and quarter the units are anticipated to be delivered in.

MILESTONE DATES \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ACTIVITY** | **SCHEDULE IN** | | | | | | | | | |
|  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

**Experience, Reputation and Resources:**

1. Contractor's relevant experience and qualifications in delivering Goods and Services similar to those required by the Agreement (use the spaces provided and/or attach additional pages, if necessary):

1. Contractor's references (name and telephone number) (use the spaces provided and/or attach additional pages, if necessary). The City's preference is to have a minimum of three references. Previous clients of the Contractor may be contacted at the City’s discretion.
2. Contractors should identify and provide the background and experience of all key personnel proposed to provide the Goods and Services (use the spaces provided and/or attach additional pages, if necessary):

**Key Personnel**

|  |  |
| --- | --- |
| Name: |  |
| Experience: |  |
| Dates: |  |
| Project Name: |  |
| Responsibility: |  |

1. Contractors should identify and provide the background and experience of all sub-contractors and material suppliers proposed to undertake a portion of the Goods and Services (use the spaces provided and/or attach additional pages, if necessary):

|  |  |  |  |
| --- | --- | --- | --- |
| *Description of Goods & Services* | *Sub-Contractors & Material Suppliers Names* | *Years of Working with*  *Contractor* | *Telephone Number and Email* |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. I/We the undersigned duly authorized representatives of the Contractor, having received and carefully reviewed the RFQ including without limitation the draft Agreement submit this Quotation in response to the RFQ.

**This Quotation** is offered by the Contractor this \_\_\_\_\_\_\_ day of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 202\_.

**CONTRACTOR**

I/We have the authority to bind the Contractor.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Full Legal Name of Contractor)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Signature of Authorized Signatory)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Print Name and Position of Authorized Signatory)

SCHEDULE B-1 – CNG FUELED TRUCK PREFERRED TECHNICAL SPECIFICATIONS RESPONSE FORM

These Specifications are the preferred Specifications necessary to establish functional and technical requirements. The Goods shall meet or exceed these Specifications. The City is relying on the Contractor to verify suitability and safety of materials, components, equipment, systems and items. Compatibility is of the essence and any modification, accessory, device, material or type of construction which may be necessary shall be considered to be a part of these Specifications whether detailed by item or not.

Set out in detail how your technical and functional solution meets the Specifications. Clearly identify any variance with the Specifications including where conflicts or deviations may exist between your proposed solution and the Specifications or substitutions are recommended. If no substitutions, deviations or conflicts are identified, the City will consider that the equipment offered is in strict compliance with these Specifications.

Contractors are directed to list complete manufacturers’ details of model proposed in the right-most column under manufacturers’ specifications.

Note: Other than entering data in the spaces provided, or including attachments as necessary, make changes to this form or submitting an alternate format is discouraged. If space is insufficient, additional pages may be added as necessary.

|  |  |  |  |
| --- | --- | --- | --- |
| **Preferred Technical Specifications** | **√**  **(Yes)** | **√**  **(No)** | **Manufacturers’ Specifications of Goods Offered. Contractor should complete all**  **spaces in this column.** |
| **A. EXTERIOR** | | | |
| 1. The chassis should have a weight rating of approximately 27,000 kgs GVWR should be no less than 36,000 kgs GCWR | □ | □ |  |
| 1. The wheelbase will be 220” approx. (To fit a 16’6” Dump Box approx.). Allow for hydraulic tank between cab and dump box. Please provide details. Chassis provider to confirm with body builder, and winter maintenance equipment supplier the optimal wheelbase | □ | □ |  |
| 1. Front bumper, full width and from either side of chassis rail, painted black, c/w two tow hooks | □ | □ |  |
| 1. Mirrors, two outside west coast style, heat and remote control switched from inside cab, stainless steel backs, c/w 2 auxiliary convex mirrors attached to main mirrors, one each side | □ | □ |  |
| 1. All lights to comply with BC Provincial/Federal Laws. | □ | □ |  |
| 1. Head lights high/low beam to be LED or upgraded to LED lamps and aligned. | □ | □ |  |
| 1. LED lights for directional lights (including 4-way flashers) | □ | □ |  |
| 1. Cab roof lights to be LED | □ | □ |  |
| 1. Mirrors to have LED lights | □ | □ |  |
| 1. Additional switching to be supplied for snowplow lighting package (lights supplied by the winter maintenance equipment supplier) | □ | □ |  |
| 1. Rear stop/tail/indicator lights LED, including license plate light | □ | □ |  |
| 1. Additional stop/tail/indicators lights will be included in the dump box | □ | □ |  |
| 1. Two additional LED reverse lights mounted either side of tow hitch | □ | □ |  |
| 1. Mud flaps to be installed behind the from wheels, and in front of and behind the tandem axle wheels | □ | □ |  |
| 1. If there is an option, the front fenders should be of the long option | □ | □ |  |
| 1. The cab shall be painted white | □ | □ |  |
| 1. Cab mounted grab handles – both sides | □ | □ |  |
| 1. Conventional cab with tilt hood and stationary grill, | □ | □ |  |
| 1. Aluminum flat roof cab, 114-inch BBC | □ | □ |  |
| 1. Cab to have drip moldings | □ | □ |  |
| 1. Composite exterior sun visor | □ | □ |  |
| 1. Horizontal exhaust with muffler, mounted right hand side, with tailpipe not exiting directly to the ground, to reduce dust nuisance | □ | □ |  |
| 1. Boot brushes to be mounted on the lower step on both sides of the truck | □ | □ |  |
| 1. Audible backup alarm, Grote part # 73040 97 dBA to be provided and installed | □ | □ |  |
| 1. Dual roof mounted polished air horns, as well as dual electric horns | □ | □ |  |
| 1. Right side lower door visibility window | □ | □ |  |
| 1. ABS and trailer light wiring to rear of chassis | □ | □ |  |
| 1. Two beacon lights mounted on dump box – LED amber Whelen (R2LPPA), (body supplier) | □ | □ |  |
| 1. Corrosion protection of frame. Cab protection shall also be applied – please provide details of offering | □ | □ |  |
| 1. 1-piece bonded heated wiper park solar green glass windshield | □ | □ |  |
| **B. CNG FUEL SYSTEM & TANKS** | | | |
| **Preferred Technical Specifications** | **√**  **(Yes)** | **√**  **(No)** | **Manufacturers’ Specifications of Goods Offered. Contractor should complete all**  **spaces in this column.** |
| 1. Fuel Tank – AGILITY INST - DRLG-PREP 45 DGE @ 3600 psi HDPE/CARBON fiber CNG   Agility tank, RH, 5th GEN, type 4 tank mounted on the **driver’s** side. The tank shall be mounted as far forward as possible below the driver’s door and tucked between cab steps and chassis rail. The tank shall have quality painted aluminum cover with integrated polished cab steps. 25-inch diameter tanks | □ | □ |  |
| 1. Fuel Tank - AGILITY INST - DRLG-PREP 45 DGE @ 3600 psi HDPE/CARBON FIBER   CNG Agility tank, LH, 5th GEN type 4 tank mounted on the **passenger’s** side of the truck. The tank shall be mounted as far forward as possible, below the passenger’s side door and tucked between cab steps and chassis rail. The tank shall have quality painted aluminum  cover with integrated polished cab steps. 25-inch diameter tanks. | □ | □ |  |
| 1. Left hand side CNG NGV1 standard fill receptacle and dust caps with additional high flow and defueler receptacles | □ | □ |  |
| **C. INTERIOR & INSTRUMENTS** | | | |
| 1. Driver’s seat, premium Isringhausen high back with air suspension, and two air lumbar, integrated cushion extension, tilt, and adjustable shock, with dual arm rests. | □ | □ |  |
| 1. Passengers seat, basic Isringhausen high back air suspension passenger seat with mechanical lumbar and integrated cushion extension, with dual arm rests | □ | □ |  |
| 1. High visibility orange seat belts will be provided. | □ | □ |  |
| 1. Heater/Defroster/Air Conditioning: Multiple speed | □ | □ |  |
| 1. Wipers, two speed plus variable intermittent settings | □ | □ |  |
| 1. Windscreen washers with two-gallon reservoir, electric pump, place so as not to contact 445/22.5 tires | □ | □ |  |
| 1. Windscreen shall be electrically heated | □ | □ |  |
| 1. Sun visors – 2 internal, driver, passenger padded | □ | □ |  |
| 1. Interior lights, dome mounted with switch and door activated, | □ | □ |  |
| 1. Instruments, full instrumentation as standard on bid model, including engine hour meter, tachometer, air gauges. Gauges are to be supplied as opposed to lights. Engine low level alarm system. Outside temperature gauge included. | □ | □ |  |
| 1. An electronic engine speed control to be supplied | □ | □ |  |
| 1. Electronic cruise control | □ | □ |  |
| 1. A diagnostic display with data linked to send warnings to service centre | □ | □ |  |
| 1. Drivers and passenger’s doors to have power windows | □ | □ |  |
| 1. Left-hand and right-hand electric door locks | □ | □ |  |
| 1. Fully insulated rubber floor mats for both driver and passenger | □ | □ |  |
| 1. Uniden CB radio to be supplied and installed in the overhead console | □ | □ |  |
| 1. An AM/FM stereo radio with Bluetooth | □ | □ |  |
| 1. Discussion with the suppliers of the IQAN system and the salt spreader shall take place prior to the fitment of any controls in the cab to confirm layout configuration. | □ | □ |  |
| 1. An aluminum storage box shall be fitted between the driver’s and passenger’s seats for the driver to store items. The box shall not interfere with any of the driver controls including gear shift, IQAN and salt spreader control displays. A cup holder should also be attached to the storage box | □ | □ |  |
| **D. CHASSIS, SUSPENSION, AXLES AND BRAKES** | | | |
| 1. Front axle – 20,000 lb drop single front axle rate set back configuration | □ | □ |  |
| 1. Front axle – 20,000 Ib taper leaf springs with shock absorbers | □ | □ |  |
| 1. Front brakes - Meritor 16.5x6 Q+ cast spider   cam front brakes, double anchor, fabricated shoes | □ | □ |  |
| 1. Haldex automatic front slack adjusters | □ | □ |  |
| 1. Non-asbestos front brake lining | □ | □ |  |
| 1. Conmet cast iron front brake drums | □ | □ |  |
| 1. Power steering pump, 4 - quart reservoir, power steering cooler | □ | □ |  |
| 1. TRW THP-60 power steering with RCH 45 auxiliary gear | □ | □ |  |
| 1. Rear axles – Meritor 46-146, 46,000 lb. tandem axle configuration |  |  |  |
| 1. Diff ratio 4.56 to 1 to be confirmed based off Allison scaan | □ | □ |  |
| 1. Driver controlled traction control on both tandem axles | □ | □ |  |
| 1. 1 - interaxle lock valve, 1 - driver controlled differential lock forward-rear axle valve and 1 - rear-rear axle valve | □ | □ |  |
| 1. MXL 18T Meritor extended lube main driveline with half round yokes | □ | □ |  |
| 1. MXL 17T Meritor extended lube interaxle driveline with half round yokes | □ | □ |  |
| 1. Hendrickson Primaxx Air 46,000 Ibs rear suspension | □ | □ |  |
| 1. Shock absorbers on tandem axle suspension | □ | □ |  |
| 1. 54” axle spacing | □ | □ |  |
| 1. Rear brakes - Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated shoes | □ | □ |  |
| 1. Non-asbestos rear brake linings | □ | □ |  |
| 1. Asphalt spreader clearance rear brake pot geometry | □ | □ |  |
| 1. Conmet cast iron rear brake drums | □ | □ |  |
| 1. Wabco long stroke 30/36 brake chambers installed on the drive axles | □ | □ |  |
| 1. Safety Check – air brake adjustment gauge fitted to all brake assembles | □ | □ |  |
| 1. Chassis rail shall be clear from the rear of the cab to allow for the installation CNG tanks either side of the truck | □ | □ |  |
| 1. Frame (24” front frame extension for snowplow) High tensile steel single straight frame rail, bolted with steel cross members.   Provide details: | □ | □ |  |
| **E. BRAKE SYSTEMS** | | | |
| 1. Wabco ABS 4S/4B | □ | □ |  |
| 2. 18.7 CFM air compressor with internal safety valve | □ | □ |  |
| 3. Air dryer with heater mounted inboard chassis rail | □ | □ |  |
| 4. Pull cables on air tanks for easy accessibility  for drivers | □ | □ |  |
| 5. Air tanks to be mounted on inside of chassis rail | □ | □ |  |
| 6. Air connections to end of frame with glad hands for truck and dust covers | □ | □ |  |
| **F. WHEELS & TIRES** | | | |
| 1. 2 – Alocoa 22.5” x 13” 10-hub pilot 4.68 inset aluminum disc front wheels | □ | □ |  |
| 2. 8 – Alocoa 22.5” x 8.25” 10-hub pilot aluminum disc rear wheels | □ | □ |  |
| 3. Polish outside of front wheels | □ | □ |  |
| 4. Polish outside of outer rear wheels | □ | □ |  |
| 5. Front tires – Michelin XZY-3, 445/65R22.5 20ply radials | □ | □ |  |
| 6. Rear tires – Michelin XDS211R22.5 14 ply radial | □ | □ |  |
| **G. ENGINE & ENGINE ACCESSORIES** | | | |
| 1. Cummins ISX12N 400 HP @1800 rpm, 1450lb-ft @ 1200 rpm | □ | □ |  |
| 2. Engine to meet or exceed current Federal and Provincial engine emission standards | □ | □ |  |
| 3. 12-volt 160-amp brushless alternator | □ | □ |  |
| 4. 3 - batteries with minimum of 3000 CCA with night switch | □ | □ |  |
| 5. Battery box to be supplied with aluminum cover. The batteries will likely have to be moved and located in an appropriate area due to the mounting CNG tanks, dump box  and hydraulic control components. | □ | □ |  |
| 6. Engine fan clutch | □ | □ |  |
| 7. Antifreeze to -34F, (nitrite and silicate free) extended life coolant | □ | □ |  |
| **H. TRANSMISSION** | | | |
| 1. Allison 4500 RDS automatic transmission with PTO provision, 6 speed | □ | □ |  |
| 2. PTO mounting, LH side and top RH side of main transmission | □ | □ |  |
| 3. Transmission oil check and fill with electronic oil level check | □ | □ |  |
| 4. Synthetic transmission fluid (TES-295 compliant) | □ | □ |  |
| 5. Transmission cooler provided | □ | □ |  |
| **I. FILTERS, BELTS AND SERIAL NUMBERS** | | | |
| 1. Filters: All filters for the first major service for complete truck to be provided. | □ | □ |  |
| 2. Belts, a list of part numbers for all belts used on truck. | □ | □ |  |
| **J. TRAINING** | | | |
| 1. At dealer expense, provide training for drivers (1 per truck) and training for  mechanic. All expenses paid by dealer. | □ | □ |  |
| 2. Provide the City of Surrey with access to  diagnostic software to trouble shoot and repair faults | □ | □ |  |
| **K. STANDARDS** | | | |
| 1. Vehicle must comply with government regulations and requirements:  * Federal Government Motor Vehicle Standards * BC Motor Vehicle Act and Regulations * BC Workers’ Compensation Board Regulations * BC Emissions Standards * Vehicle shall be delivered with CVIP * Vehicle shall be delivered, plated and insured through the City of Surrey’s * Insurance Broker | □ | □ |  |
| **L. STANDARD WARRANTY (provide details)** | | | |
| * Engine * Power Train * Chassis * Corrosion | □ | □ |  |
| **M. EXTENDED WARRANTY (provide specific details & costs), MISCELLANEOUS** | | | |
| 1. Provide extended warranty and costs for:  * Engine, * Engine emission components * Transmission, power train * Chassis * Dump Box | □ | □ |  |
| 1. Operators Manuals / Service Manuals  * 1 – Service manual or CD with software * A build sheet shall be provided detailing (but not limited to the following): * VIN * Engine details including serial number * Transmission details including serial number * Diff details including serial number * Oil types and quantities for all components * Tire make, type and size * Engine belts details * Filter list for all components * Battery details * Beacon light make * Body and hydraulic components * Salt Spreader * Snowplow | □ | □ |  |
| 1. Keys: 3 sets with each unit | □ | □ |  |
| 1. Basic First Aid Kit (Old Level 1 kit) (HardCase) | □ | □ |  |
| 1. 5 lb. Fire Extinguisher – Mounted | □ | □ |  |
| **N. DUMP BOX AND ACCESSORIES** | | | |
| 1. Aluminum dump box with high lift and tarp system | □ | □ |  |
| 1. Internal length 197” | □ | □ |  |
| 1. Floor length 198” | □ | □ |  |
| 1. Overall length including cab guard 216.9” | □ | □ |  |
| 1. Internal width 89” | □ | □ |  |
| 1. External overall width 99 ¼” | □ | □ |  |
| 1. Overall height including cab guard 80” | □ | □ |  |
| 1. One piece horizontal rib sides 3/16” 5052 aluminum, 36” high | □ | □ |  |
| 1. 2” x 9 ½” sideboards painted black | □ | □ |  |
| 1. Sides lined with ¾” plywood | □ | □ |  |
| 1. High mount cab guard 64” wide, mounted on top of bulkhead, 89” wide, | □ | □ |  |
| 1. Two Whelen R2LPPA LED beacon lights mounted on top of cab guard | □ | □ |  |
| 1. A minimum of two grab handles either side of the dump box at the front by the steps on body and cab guard | □ | □ |  |
| 1. Tailgate 3/16 5052 aluminum | □ | □ |  |
| 1. Floor, ½” 5086 aluminum flat floor, with 3/8” 5086 Aluminum sacrificial overlay plate | □ | □ |  |
| 1. Longsills - single piece formed long sills with continuous welds and rear doubler reinforcement, ¼” 5052 aluminum formed 7 ¼ “high | □ | □ |  |
| 1. A close-up of a metal container     Description automatically generatedHigh lift tail gate, 38” arm | □ | □ |  |
| 1. Tailgate 44” high, 90 ½ ” wide, with a lifting bracket in the centre of the tail gate | □ | □ |  |
| 1. One piece alloy cast Tailgate High lift pivot with integral safety lock | □ | □ |  |
| 1. Electric operated roller tarp system   A metal object with a metal object on the side  Description automatically generated with medium confidence | □ | □ |  |
| 1. Steps either side of body as per photo above approx. 42” long | □ | □ |  |
| 1. 4 – aluminum lugs to be welded to the driver’s side of the body to retain hydraulic hoses and electrical cabling from the hydraulic valving to various equipment mounted in the dump box   A close-up of a metal surface  Description automatically generated | □ | □ |  |
| 1. Fender over rear tandems approx. 110” | □ | □ |  |
| 1. Shovel holder on drivers side of body | □ | □ |  |
| 1. Steps at front of body on either side   A close-up of a truck  Description automatically generated | □ | □ |  |
| 1. Alloy cast hoist A frame mounts and fittings | □ | □ |  |
| 1. 156” stroke, 6” diameter, 4 stage hydraulic cylinder | □ | □ |  |
| 1. 10” hoist bed for mounting cylinder | □ | □ |  |
| 1. Box safety prop mounted to hoist bed | □ | □ |  |
| 1. Box guides mounted to the chassis | □ | □ |  |
| 1. Box hinge assembly with 2” pins | □ | □ |  |
| 1. Tow apron with pintle hock, LED reverse lights, wiring connections   The back of a truck  Description automatically generated | □ | □ |  |
| 1. Electrical trailer plugs, 1 – 7 pin SAE J560, and 1 - 7 pin SAE J560 AUX. | □ | □ |  |
| 1. Two LED rectangle reversing lights | □ | □ |  |
| 1. Wiring shall be Sealco sealed wiring harness with AMP connectors | □ | □ |  |
| 1. Lighting shall be LED Optronics with integral reflex lens for all body lighting | □ | □ |  |
| 1. The pintle hock should be a Premier 2300 sack reducing coupling | □ | □ |  |
| **O. IQAN HYDRAULIC SYSTEM** | | | |
| 1. Parker IQUAN Control system MD4-7/MFJS must be provided to match the system with the City’s other tandem trucks | □ | □ |  |
| 1. Parker PAVC65 load sense variable displacement piston pump 30 gpm @ 1800 rpm | □ | □ |  |
| 1. Parker 890 series hot shift PTO with direct pump mount and wet splines | □ | □ |  |
| 1. IQAN MD4-7 master display unit dash mounted with 7” colour touchscreen display | □ | □ |  |
| 1. J1939 CAN bus communication | □ | □ |  |
| 1. LC5 multi-function joystick with thumbwheel, 4 buttons, and trigger | □ | □ |  |
| 1. Pressure compensated load sense closed centre hydraulic valve fully proportional electrical control | □ | □ |  |
| 1. Stainless steel valve enclosure frame mounted | □ | □ |  |
| 1. 10 micron return line filter | □ | □ |  |
| 1. Parker 28P series pressure line filter | □ | □ |  |
| 1. Parker FLR2 series return filter | □ | □ |  |
| 1. Tema multi coupler for hydraulic and electrical connections to spreader, anti ice, and asphalt patcher | □ | □ |  |
| 1. 37 gallon hydraulic reservoir with sight glass mounted behind cab on drivers side | □ | □ |  |
| 1. Hydraulic oil level sensor with on screen display and audible warning | □ | □ |  |
| 1. Poly electrical enclosure housing the XC43 and XC41 input / output modules | □ | □ |  |
| 1. LED lighting inside electrical enclosure | □ | □ |  |
| 1. Eaton multiplexed vehicle electrical centre with 16 fuses and 8 auxiliary lighting relays | □ | □ |  |
| 1. Auxiliary lighting controlled on touch screen | □ | □ |  |
| 1. Solid state proximity switches for body up indication, max height hoist cut out, and plow down | □ | □ |  |
| 1. 12 volt air solenoid and in cab controls for tailgate release | □ | □ |  |
| 1. Custom programming for City of Surrey trucks and various equipment carried on the truck | □ | □ |  |
| 1. Full electrical and hydraulic schematics for all components including spreader and anti ice units | □ | □ |  |
| 1. On-site training and support upon delivery | □ | □ |  |
| 1. Discuss placement of TEMA to match existing City of Surrey trucks | □ | □ |  |
| **FUNCTIONS INCLUDE** | | | |
| 1. All proportional hydraulic controls for conveyor, spinner, plow up/down, plow left/right, underbody plow up/down’ underbody plow left/right, hoist, pony, anti ice, dust control, prewet, asphalt patcher, and high lift tail gate | □ | □ |  |
| 1. Closed loop ground speed based control and data logging of all granular and liquid products | □ | □ |  |
| 1. J1939 data transmission provided for 3rd party transmission | □ | □ |  |
| 1. Hoist is disabled when coupler is connected or travelling above 20 kph | □ | □ |  |
| 1. Hoist and Pony controls can be detented in the lower position | □ | □ |  |
| 1. Tailgate cannot be opened above 20 kph and automatically locks at 30 kph | □ | □ |  |
| 1. Electric tarp system (sold with body) is controlled on screen and disabled above 20 kph | □ | □ |  |
| 1. Selectable operation screens including spreader, anti ice (3 lane – 2 tier), dump body, pony trailer, asphalt patcher, and dust control | □ | □ |  |
| 1. Emergency lights come on automatically when spreading material | □ | □ |  |
| 1. On screen diagnostics and real time measurements of all inputs, outputs, commands, and calculations. | □ | □ |  |
| **P. SALT SPREADER WITH PRE-WET** | | | |
| 1. State make and model of units to be supplied | □ | □ |  |
| 1. The unit should consist of a 201 stainless steel body, dual auger discharge/feed conveyor, top grate kit, tip-up spinner assembly, power drive, complete operating unit and all components necessary to make a | □ | □ |  |
| 1. The spreader should be of a “V” box design with capacity of approximately 10 yards, with the capability spreading salt. | □ | □ |  |
| 1. The hopper body length should be approx. 15 feet, with a bolt-on, replaceable flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement The hopper body length should be approx. 15 feet, with a bolt-on, flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement | □ | □ |  |
| 1. The unit should be manufactured from 10 gauge 201 stainless steel with a 2” double crimped top edge for rigidity | □ | □ |  |
| 1. The body sides should have not less than forty-five degree slope to insure free flow of material to the dual auger conveyor system. | □ | □ |  |
| 1. The body and conveyor longitudinal assembly should be 100% electrically welded with a | □ | □ |  |
| 1. 10 gauge stainless steel formed side supports which extend the full side angle height on the hopper and spaced approximately (2) two foot centers should be installed. | □ | □ |  |
| 1. The channel cross sills should be 3”, formed 201 stainless steel channel that tie the lower edge of the longitudinal rail to each side support. | □ | □ |  |
| 1. A stainless steel bolt-on 6” x 9.0# wide flange “H” beam should be elevated 3” above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top screens | □ | □ |  |
| 1. The top screens should be constructed of 3/8” rods welded to form a 2.5” square mesh which is formed by a combination of ¼” x 1-1/2” flat steel and 2” angle iron with the edge supports reinforced by ¼” x 1” flat steel bars. | □ | □ |  |
| 1. Each section should be secured to the “H” beam with two (2) non-freeze 5/8” rod hinges. There should be no fewer than four individual screen assemblies per spreader. | □ | □ |  |
| 1. The spreader box should feature a hydraulic inter-lock system to prevent opening the top grates while hydraulic pressure is present. | □ | □ |  |
| 1. A heavy duty 5/8” stainless steel lift loop should be provided at each corner. | □ | □ |  |
| 1. The body longitudinal and auger trough should be manufactured from 7- gauge 201 stainless steel. | □ | □ |  |
| 1. The trough for the augers should be removable, with an inverted V center to isolate each auger, manufactured of 7 gauge 201 stainless steel. | □ | □ |  |
| 1. There should be two 7” O.D. step-flighted right hand and left hand helical augers, running longitudinally within the body, feeding material the length of the hopper to discharge to the spinner. | □ | □ |  |
| 1. The augers should consist of a 4” schedule 80 tube with 2” cold rolled idler shaft and flighting welded the full length. The flighting should be ½” thick. End shafts should be designed to accept a remote speed sensor. | □ | □ |  |
| 1. Height adjustable stainless steel inverted V should cover the augers to reduce loading on the augers | □ | □ |  |
| 1. The augers should be driven by a hydraulic motor, with case drain, directly coupled by a splined shaft to a planetary gear box geared appropriately. | □ | □ |  |
| 1. The gear box drive shaft should be direct- coupled to the augers | □ | □ |  |
| 1. The idler end of the augers should be supported by 2” 4-bolt flange, heavy duty, and dust-sealed, self-aligning ball bearings. These bearings should be greaseable. | □ | □ |  |
| 1. Remote grease lines should be installed, from the bearings to the rear of the hopper to allow for regular greasing | □ | □ |  |
| 1. A stainless steel, load bearing protective grid with a non-slip surface should be bolted at the rear above the augers. A stainless steel protective shield should be over the front idlers. | □ | □ |  |
| 1. A reinforced rear panel should have material shields that follows the contour of the augers and is designed to prevent material leakage when the augers are idle. | □ | □ |  |
| 1. The material should be guided from the augers to the distribution disc by means of two internal adjustable 10 gauge 201 stainless steel material deflectors | □ | □ |  |
| 1. The entire spinner assembly should be manufactured of not less than 10 gauge 201 stainless steel and should be adjustable in height. | □ | □ |  |
| 1. The spinner assembly unit should be removable from the hopper to allow for replacement should the vehicle be hit from behind | □ | □ |  |
| 1. The distributor disc should be at least 20” in diameter. This stainless steel or poly disc should be mounted on a cast iron replaceable hub connected directly to the top mounted motor. The motor should have the “Seal Saver” feature. Should consider 20” poly spinner disc. | □ | □ |  |
| 1. Manually adjustable internal deflectors should control the spread pattern from left to right by controlling where the material drops on the disc. | □ | □ |  |
| 1. A speed senor should be installed on the augers to control the application rate through the IQAN system | □ | □ |  |
| 1. The hopper should be supplied with stainless steel slip-in leg mounting kit for ease of loading and unloading of unit to truck deck | □ | □ |  |
| 1. A tailgate latch kit should be supplied and installed | □ | □ |  |
| 1. A chain binder mounting kit should be supplied | □ | □ |  |
| **PRE-WET TANKS & COMPONENTS** | | | |
| 1. It is the intent of this specification to describe an on board pre-wetting system for dispensing measured amounts of brine and other chemicals used in snow and ice control. | □ | □ |  |
| 1. All components and construction shall use non- ferrous and corrosion resistant materials | □ | □ |  |
| 1. The system should include and be complete with pump, pump control, nozzles, hoses, tanks, fittings, wiring and mounting hardware | □ | □ |  |
| 1. A single 12 VDC sealed pump / motor combination rated at 3 GPM, should have a positive displacement, three chamber diaphragm design with integral 45 PSI shut off switch. | □ | □ |  |
| 1. Motor should be of the permanent magnet design. Pump components should be constructed of polypropylene, viton, and santoprene. | □ | □ |  |
| 1. The pump should be mounted near the rear of the spreader in a NEMA fiberglass enclosure. The enclosure should be mounted in a location that should not hinder normal spreader maintenance or operation. | □ | □ |  |
| 1. Electrical connections and wiring should be hard wired within enclosure. Wire harnesses should incorporate element resistant weather pak connectors with disconnects at rear of truck and console. The above mentioned greatly reducing installation and maintenance time while increasing product life and dependability. | □ | □ |  |
| 1. A minimum of two saddle tanks should be supplied and mounted to the spreader unit with a minimum capacity of 100 US gal each | □ | □ |  |
| 1. The tanks should be constructed of a rotationally molded and UV stabilized polypropylene material (natural color) and have a minimum .350” wall thickness. | □ | □ |  |
| 1. Each tank should have a minimum of (2) 5” fill caps, and be lanyard retained. | □ | □ |  |
| 1. Each tank should have inlet ports(s) capable of accepting bulk fill of no less than 2” diameter hose connection and should be vented. | □ | □ |  |
| 1. Each tank with be molded with gallon markings | □ | □ |  |
| 1. There should be a crossover line between the two tanks with a minimum line diameter of 1- 1/4” | □ | □ |  |
| 1. A flush kit should be provided to flush product from the tanks | □ | □ |  |
| 1. The tanks should be supplied with stainless steel mounting kits to mount to the V box spreader | □ | □ |  |
| 1. The tanks should have an outlet for a suction line to the pump of 1/2” diameter. The hoses should be of EPDM material | □ | □ |  |
| 1. A ¾” filter with 304 stainless steel reinforced screen and clean-out plug should be installed in the suction line | □ | □ |  |
| 1. Plumbing components should be constructed of heavy duty glass reinforced polypropylene or brass, except check valves. | □ | □ |  |
| 1. The (2) brass spray nozzles 3GPM should be located in the spinner chute assembly of the salt spreader. | □ | □ |  |
| 1. 5-PSI check valves should be installed in the nozzles to prevent siphoning of the liquid chemical | □ | □ |  |
| **CONTROLLER** | | | |
| 1. The system should have a closed loop flow meter | □ | □ |  |
| 1. A PWM amplifier should be used for the electric motor speed control | □ | □ |  |
| 1. System shall be fully compatible with Parker IQAN control system | □ | □ |  |
| 1. All programming changes to the IQAN system to include pre-wet operations shall be included in the Quotation price. | □ | □ |  |
| 1. The salt spreader and pre-wet tanks shall be wired and matched to the existing City trucks via a TEMA male multi-connections coupler for all hydraulic functions, and electrical & lighting functions | □ | □ |  |
| 1. The unit shall be setup to control the application rate of salt and pre-wet solution, and be calibrated prior to delivery | □ | □ |  |
| 1. All controllers are to be included as part of the installation | □ | □ |  |
| **Q. FRONT MOUNT PLOW AND QUICK HITCH** | | | |
| 1. State make and model of plow and quick hitch | □ | □ |  |
| **QUICK HITCH** | | | |
| 1. True one man hitch system | □ | □ |  |
| 1. Plow force in direct line with frame (34-1/2” wide to push at truck frame width) | □ | □ |  |
| 1. Dependable 2 point connection | □ | □ |  |
| 1. Tapered design jaw boxes allow for horizontal and vertical misalignment when attaching plow | □ | □ |  |
| 1. Low profile truck portion in non-tilt configuration | □ | □ |  |
| 1. Custom front bumpers included | □ | □ |  |
| 1. Lift arm folds flat for summer storage with no tools | □ | □ |  |
| 1. Heavy duty 1” x 4” thrust arm kit to distribute load to frame | □ | □ |  |
| 1. Adjustable lift arm with 3 point chain lift | □ | □ |  |
| 1. Double acting lift cylinder 4" bore x 10" stroke with 2” diameter rod | □ | □ |  |
| 1. Designed for “Level Lift System” | □ | □ |  |
| 1. LED snow plow lights with heated lenses hood mounted on stainless steel brackets | □ | □ |  |
| **SNOWPLOW** | | | |
| 1. Mouldboard is 11' in length and 41" high | □ | □ |  |
| 1. 9' 0" Cutting width at 35 degrees | □ | □ |  |
| 1. 10 gauge mouldboard thickness | □ | □ |  |
| 1. 14" push height | □ | □ |  |
| 1. Integral shield to reduce blow by | □ | □ |  |
| 1. Dual compression spring full trip mouldboard | □ | □ |  |
| 1. Powder coat paint in Omaha Orange | □ | □ |  |
| 1. Snow Ski, not wheels | □ | □ |  |
| 1. Full length snow deflector | □ | □ |  |
| 1. Curb guards on each end | □ | □ |  |
| **STANDARD FEATURES:** | | | |
| 1. Power reverse with two 3” x 10” reversing cylinders, | □ | □ |  |
| 1. Cushion valve, | □ | □ |  |
| 1. Six - 1/2 " x 4" tapered one piece flame cut ribs, | □ | □ |  |
| 1. 2" x 3" x 3/8" top angle, | □ | □ |  |
| 1. Heavy duty 4" x 4" x 3/4" bottom angle with 1/2” gussetts between holes, | □ | □ |  |
| 1. 5/8” x 8” standard AASHO top punched cutting edge, | □ | □ |  |
| 1. Horizontal bracing, built in “level lift” system to keep plow level even when angled fully, | □ | □ |  |
| 1. 4" x 4" x 3/8" cross tube, | □ | □ |  |
| 1. 3 1/2" x 3 1/2" x 1/2" semi-circle, | □ | □ |  |
| 1. Two rubber stops 1-1/2” x 5” x 6” to absorb shock when mouldboard trips, | □ | □ |  |
| 1. Mouldboard pitch adjustable to 5, 10, or 20 angle of attack, | □ | □ |  |
| 1. 100% welded, | □ | □ |  |
| 1. Shot blasted prior to painting, | □ | □ |  |
| 1. Installation manual. | □ | □ |  |

#### [END OF PAGE]

SCHEDULE B-2 – DIESEL FUELED TRUCK PREFERRED TECHNICAL SPECIFICATIONS RESPONSE FORM

These Specifications are the preferred Specifications necessary to establish functional and technical requirements. The Goods shall meet or exceed these Specifications. The City is relying on the Contractor to verify suitability and safety of materials, components, equipment, systems and items. Compatibility is of the essence and any modification, accessory, device, material or type of construction which may be necessary shall be considered to be a part of these Specifications whether detailed by item or not.

Set out in detail how your technical and functional solution meets the Specifications. Clearly identify any variance with the Specifications including where conflicts or deviations may exist between your proposed solution and the Specifications or substitutions are recommended. If no substitutions, deviations or conflicts are identified, the City will consider that the equipment offered is in strict compliance with these Specifications.

Contractors are directed to list complete manufacturers’ details of model proposed in the right-most column under manufacturers’ specifications.

Note: Other than entering data in the spaces provided, or including attachments as necessary, make changes to this form or submitting an alternate format is discouraged. If space is insufficient, additional pages may be added as necessary.

|  |  |  |  |
| --- | --- | --- | --- |
| **Preferred Technical Specifications** | **√**  **(Yes)** | **√**  **(No)** | **Manufacturers’ Specifications of Goods Offered. Contractor should complete all**  **spaces in this column.** |
| **A. EXTERIOR** | | | |
| 1. The chassis should have a weight rating of approximately 27,000 kgs GVWR should be   no less than 50,000 kgs GCWR | □ | □ |  |
| 1. The wheelbase will be 220” approx. (To fit a 16’6” Dump Box approx.). Allow for hydraulic tank between cab and dump box. Please provide details. Chassis provider to confirm with Body builder, and winter maintenance equipment supplier the optimal wheelbase | □ | □ |  |
| 1. Front bumper, full width and from either side of chassis rail, painted black, c/w two tow   hooks | □ | □ |  |
| 1. Mirrors, two outside west coast style, heat and remote control switched from inside cab, stainless steel backs, c/w 2 auxiliary convex mirrors attached to main mirrors, one each   side | □ | □ |  |
| 1. All lights to comply with BC Provincial/Federal Laws. | □ | □ |  |
| 1. Head lights high/low beam to be LED or upgraded to LED lamps and aligned. | □ | □ |  |
| 1. LED lights for directional lights (including 4-   way flashers) | □ | □ |  |

|  |  |  |  |
| --- | --- | --- | --- |
| 1. Cab roof lights to be LED | □ | □ |  |
| 1. Mirrors to have LED lights | □ | □ |  |
| 1. Additional switching to be supplied for   snowplow lighting package (lights supplied by the winter maintenance equipment supplier) | □ | □ |  |
| 1. Rear stop/tail/indicator lights LED, including license plate light | □ | □ |  |
| 1. Additional stop/tail/indicators lights will be included in the dump box | □ | □ |  |
| 1. Two additional LED reverse lights mounted either side of tow hitch | □ | □ |  |
| 1. Mud flaps to be installed behind the from wheels, and in front of and behind the   tandem axle wheels | □ | □ |  |
| 1. If there is an option, the front fenders should be of the long option | □ | □ |  |
| 1. The cab shall be painted white | □ | □ |  |
| 1. Cab mounted grab handles – both sides | □ | □ |  |
| 1. Conventional cab with tilt hood and stationary grill, | □ | □ |  |
| 1. Aluminum flat roof cab, 114-inch BBC | □ | □ |  |
| 1. Cab to have drip moldings | □ | □ |  |
| 1. Composite exterior sun visor | □ | □ |  |
| 1. Vertical Exhaust, with muffler guard, and guarding around any exposed pipe which could pose a burn hazard | □ | □ |  |
| 1. Boot brushes to be mounted on the lower step on both sides of the truck | □ | □ |  |
| 1. Audible backup alarm, Grote part # 73040 97 dBA to be provided and installed | □ | □ |  |
| 1. Dual roof mounted polished air horns, as well as dual electric horns | □ | □ |  |
| 1. Right side lower door visibility window | □ | □ |  |
| 1. ABS and trailer light wiring to rear of chassis | □ | □ |  |
| 1. Two beacon lights mounted on dump box – LED amber Whelen (R2LPPA), | □ | □ |  |
| 1. Corrosion protection of frame. Cab protection shall also be applied – please provide details of offering | □ | □ |  |
| 1. 1-piece bonded heated wiper park solar green glass windshield | □ | □ |  |
| **B. DIESEL FUEL TANK** | | | |
| * 1. Polished aluminum tank with a minimum capacity of 80 gallons | □ | □ |  |
| **C. INTERIOR & INSTRUMENTS** | | | |
| **Preferred Technical Specifications** | **√**  **(Yes)** | **√**  **(No)** | **Manufacturers’ Specifications of Goods Offered. Contractor should complete all**  **spaces in this column.** |
| 1. Driver’s seat, premium Isringhausen high back with air suspension, and two air lumbar, integrated cushion extension, tilt,  and adjustable shock, with dual arm rests. | □ | □ |  |
| 2. Passengers seat, basic Isringhausen high back air suspension passenger seat with  mechanical lumbar and integrated cushion extension, with dual arm rests | □ | □ |  |
| 3. High visibility orange seat belts will be provided. | □ | □ |  |
| 4. Heater/Defroster/Air Conditioning: Multiple speed | □ | □ |  |
| 5. Wipers, two speed plus variable intermittent settings | □ | □ |  |
| 6. Windscreen washers with two-gallon reservoir, electric pump | □ | □ |  |
| 7. Windscreen shall be electrically heated | □ | □ |  |
| 8. Sun visors – 2 internal, driver, passenger padded | □ | □ |  |
| 9. Interior lights, dome mounted with switch and door activated | □ | □ |  |
| 10. Instruments, full instrumentation as standard on bid model, including engine hour meter, tachometer, air gauges. Gauges are to be supplied as opposed to lights. Engine low  level alarm system. Outside temperature gauge included. | □ | □ |  |
| 11. An electronic engine speed control to be supplied | □ | □ |  |
| 12. Electronic cruise control | □ | □ |  |
| 13. A diagnostic display with data linked to send warnings to service centre | □ | □ |  |
| 14. Drivers and passenger’s doors to have power windows | □ | □ |  |
| 15. Left-hand and right-hand electric door locks | □ | □ |  |
| 16. Fully insulated rubber floor mats for both driver and passenger | □ | □ |  |
| 17. Uniden CB radio to be provided and installed in the overhead console | □ | □ |  |
| 18. An AM/FM stereo radio with Bluetooth | □ | □ |  |
| 19. Discussion with the suppliers of the IQAN system and the salt spreader shall take place prior to the fitment of any controls  in the cab to confirm layout configuration. | □ | □ |  |
| 20. An aluminum storage box shall be fitted between the driver’s and passenger’s seats for the driver to store items. The box shall not interfere with any of the driver controls including gear shift, IQAN and salt spreader control displays. A cup holder should also be attached to the storage box | □ | □ |  |
| **D. CHASSIS, SUSPENSION, AXLES AND BRAKES** | | | |
| 1. Front axle – 20,000 lb drop single front axle rate set back configuration | □ | □ |  |
| 1. Front axle – 20,000 Ib taper leaf springs with shock absorbers | □ | □ |  |
| 1. Front brakes - Meritor 16.5x6 Q+ cast spider   cam front brakes, double anchor, fabricated shoes | □ | □ |  |
| 1. Haldex automatic front slack adjusters | □ | □ |  |
| 1. Non-asbestos front brake lining | □ | □ |  |
| 1. Conmet cast iron front brake drums | □ | □ |  |
| 1. Power steering pump, 4 - quart reservoir, power steering cooler | □ | □ |  |
| 1. TRW THP-60 power steering with RCH 45 auxiliary gear | □ | □ |  |
| 1. Rear axles – Meritor 46-146, 46,000 lb. tandem axle configuration | □ | □ |  |
| 1. Diff ratio 4.56 to 1 to be confirmed based off Allison scaan | □ | □ |  |
| 1. Driver controlled traction control on both tandem axles | □ | □ |  |
| 1. 1 - interaxle lock valve, 1 - driver controlled differential lock forward-rear axle valve and 1 - rear-rear axle valve | □ | □ |  |
| 1. MXL 18T Meritor extended lube main driveline with half round yokes | □ | □ |  |
| 1. MXL 17T Meritor extended lube interaxle driveline with half round yokes | □ | □ |  |
| 1. Hendrickson Primaxx Air 46,000 Ibs rear suspension | □ | □ |  |
| 1. Shock absorbers on tandem axle suspension | □ | □ |  |
| 1. 54” axle spacing | □ | □ |  |
| 1. Rear brakes - Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated shoes | □ | □ |  |
| 1. Non-asbestos rear brake linings | □ | □ |  |
| 1. Asphalt spreader clearance rear brake pot geometry | □ | □ |  |
| 1. Conmet cast iron rear brake drums | □ | □ |  |
| 1. Wabco long stroke 30/36 brake chambers installed on the drive axles | □ | □ |  |
| 1. Safety Check – air brake adjustment gauge fitted to all brake assembles | □ | □ |  |
| 1. Frame (24” front frame extension for snowplow) High tensile steel single straight frame rail, bolted with steel cross members.   Provide details | □ | □ |  |
| 1. Clear frame behind the cab with inboard air tanks | □ | □ |  |
| **E. BRAKE SYSTEMS** | | | |
| 1. Wabco ABS 4S/4B | □ | □ |  |
| 2. 18.7 CFM air compressor with internal safety valve | □ | □ |  |
| 3. Air dryer with heater mounted inboard chassis rail | □ | □ |  |
| 4. Pull cables on air tanks for easy accessibility  for drivers | □ | □ |  |
| 5. Air tanks to be mounted on inside of chassis rail | □ | □ |  |
| 6. Air connections to end of frame with glad hands for truck and dust covers | □ | □ |  |
| **F. WHEELS & TIRES** | | | |
| 1. 2 – Alocoa 22.5” x 13” 10-hub pilot 4.68 inset aluminum disc front wheels | □ | □ |  |
| 2. 8 – Alocoa 22.5” x 8.25” 10-hub pilot aluminum disc rear wheels | □ | □ |  |
| 3. Polish outside of front wheels | □ | □ |  |
| 4. Polish outside of outer rear wheels | □ | □ |  |
| 5. Front tires – Michelin XZY-3, 445/65R22.5 20ply radials | □ | □ |  |
| 6. Rear tires – Michelin XDS211R22.5 14 ply radial | □ | □ |  |
| **G. ENGINE & ENGINE ACCESSORIES** | | | |
| 1. Engine to meet or exceed current Federal and Provincial engine emission standards | □ | □ |  |
| 1. 450 HP 13-litre engine (approx.) @1900 rpm electronically controlled, peak torque 1650   ft./lb @ 900 rpm, | □ | □ |  |
| 1. Engine brake, controlled from cab, with 3 stage setting | □ | □ |  |
| 1. Racor or similar fuel/water separator | □ | □ |  |
| 1. Provide complete engine spec/data sheet - options | □ | □ |  |
| 1. 12-volt 160-amp brushless alternator | □ | □ |  |
| 1. 3 - batteries with minimum of 3000 CCA with night switch | □ | □ |  |
| 1. Battery box to be supplied with aluminum cover. The batteries will likely have to be moved and located in an appropriate area due to the mounting, dump box and hydraulic control components. | □ | □ |  |
| 1. Engine fan clutch | □ | □ |  |
| 1. Antifreeze to -34F, (nitrite and silicate free) extended life coolant | □ | □ |  |
| **H. TRANSMISSION** | | | |
| 1. Allison 4500 RDS automatic transmission with PTO provision, 6 speed | □ | □ |  |
| 2. PTO mounting, LH side and top RH side of main transmission | □ | □ |  |
| 3. Transmission oil check and fill with electronic oil level check | □ | □ |  |
| 4. Synthetic transmission fluid (TES-295 compliant) | □ | □ |  |
| 5. Transmission cooler provided | □ | □ |  |
| **I. FILTERS, BELTS AND SERIAL NUMBERS** | | | |
| 1. Filters: All filters for the first major service for complete truck to be provided. | □ | □ |  |
| 2. Belts, a list of part numbers for all belts used on truck. | □ | □ |  |
| **J. TRAINING** | | | |
| 1. At dealer expense, provide training for  drivers (1 per truck) and training for mechanic. All expenses paid by dealer. | □ | □ |  |
| 2. Provide the City of Surrey with access to diagnostic software to trouble shoot and  repair faults | □ | □ |  |
| **K. STANDARDS** | | | |
| 1. Vehicle must comply with government regulations and requirements:  * Federal Government Motor Vehicle Standards * BC Motor Vehicle Act and Regulations * BC Workers’ Compensation Board Regulations * BC Emissions Standards * Vehicle shall be delivered with CVIP * Vehicle shall be delivered, plated and insured through the City of Surrey’s Insurance Broker | □ | □ |  |
| **L. STANDARD WARRANTY (provide details)** | | | |
| * Engine * Power Train * Chassis * Corrosion | □ | □ |  |
| **M. EXTENDED WARRANTY (provide specific details & costs), MISCELLANEOUS** | | | |
| 1. Provide extended warranty and costs for:    * Engine,    * Engine emission components    * Transmission, power train    * Chassis    * Dump Box | □ | □ |  |
| 1. Operators Manuals / Service Manuals    * 1 – Service manual or CD with software    * A build sheet shall be provided detailing (but not limited to the following):    * VIN    * Engine details including serial number    * Transmission details including serial number    * Diff details including serial number    * Oil types and quantities for all components    * Tire make, type and size    * Engine belts details    * Filter list for all components    * Battery details    * Beacon light make    * Body and hydraulic components    * Salt Spreader    * Snowplow | □ | □ |  |
| 3. Keys: 3 sets with each unit | □ | □ |  |
| 4. Basic First Aid Kit (Old Level 1 kit) (HardCase) | □ | □ |  |
| 5. 5 lb. Fire Extinguisher – Mounted | □ | □ |  |
| **N. DUMP BOX AND ACCESSORIES** | | | |
| 1. Aluminum dump box with high lift and tarp system | □ | □ |  |
| 1. Internal length 197” | □ | □ |  |
| 1. Floor length 198” | □ | □ |  |
| 1. Overall length including cab guard 216.9” | □ | □ |  |
| 1. Internal width 89” | □ | □ |  |
| 1. External overall width 99 ¼” | □ | □ |  |
| 1. Overall hright including cab guard 80” | □ | □ |  |
| 1. One piece horizontal rib sides 3/16” 5052 aluminum, 36” high | □ | □ |  |
| 1. 2” x 9 ½” sideboards painted black | □ | □ |  |
| 1. Sides lined with ¾” plywood | □ | □ |  |
| 1. High mount cab guard 64” wide, mounted on top of bulkhead, 89” wide, | □ | □ |  |
| 1. Two Whelen R2LPPA LED beacon lights mounted on top of cab guard | □ | □ |  |
| 1. A minimum of two grab handles either side of the dump box at the front by the steps on body and cab guard | □ | □ |  |
| 1. Tailgate 3/16 5052 aluminum | □ | □ |  |
| 1. Floor, ½” 5086 aluminum flat floor, with 3/8” 5086 Aluminum sacrificial overlay plate | □ | □ |  |
| 1. Longsills - single piece formed long sills with continuous welds and rear doubler reinforcement, ¼” 5052 aluminum formed 7 ¼ “high | □ | □ |  |
| 1. High lift tail gate, 38” arm   A close-up of a metal container  Description automatically generated | □ | □ |  |
| 1. Tailgate 44” high, 90 ½ ” wide, with a lifting bracket in the centre of the tail gate | □ | □ |  |
| 1. One piece alloy cast Tailgate High lift pivot with integral safety lock | □ | □ |  |
| 1. A metal object with a metal object on the side     Description automatically generated with medium confidenceElectric operated roller tarp system | □ | □ |  |
| 1. Steps either side of body as per photo above approx. 42” long | □ | □ |  |
| 1. 4 – aluminum lugs to be welded to the driver’s side of the body to retain hydraulic hoses and electrical cabling from the hydraulic valving to various equipment mounted in the dump box   A close-up of a metal shelf  Description automatically generated | □ | □ |  |
| 1. Fender over rear tandems approx. 110” | □ | □ |  |
| 1. Shovel holder on drivers side of body | □ | □ |  |
| 1. Steps at front of body on either side   A close-up of a truck  Description automatically generated | □ | □ |  |
| 1. Alloy cast hoist A frame mounts and fittings | □ | □ |  |
| 1. 156” stroke, 6” diameter, 4 stage hydraulic cylinder | □ | □ |  |
| 1. 10” hoist bed for mounting cylinder | □ | □ |  |
| 1. Box safety prop mounted to hoist bed | □ | □ |  |
| 1. Box guides mounted to the chassis | □ | □ |  |
| 1. Box hinge assembly with 2” pins | □ | □ |  |
| 1. Tow apron with pintle hock, LED reverse lights, wiring connections   The back of a truck with lights and a chain  Description automatically generated | □ | □ |  |
| 1. Electrical trailer plugs, 1 – 7 pin SAE J560, and 1 - 7 pin SAE J560 AUX. | □ | □ |  |
| 1. Two LED rectangle reversing lights | □ | □ |  |
| 1. Wiring shall be Sealco sealed wiring harness with AMP connectors | □ | □ |  |
| 1. Lighting shall be LED Optronics with integral reflex lens for all body lighting | □ | □ |  |
| 1. The pintle hock should be a Premier 2300 sack reducing coupling | □ | □ |  |
| 1. **IQAN HYDRAULIC SYSTEM** | | | |
| 1. Parker IQUAN Control system MD4-7/MFJS must be provided to match the system with the City’s other tandem trucks | □ | □ |  |
| 1. Parker PAVC65 load sense variable displacement piston pump 30 gpm @ 1800 rpm | □ | □ |  |
| 1. Parker 890 series hot shift PTO with direct pump mount and wet splines | □ | □ |  |
| 1. IQAN MD4-7 master display unit dash mounted with 7” colour touchscreen display | □ | □ |  |
| 1. J1939 CAN bus communication | □ | □ |  |
| 1. LC5 multi-function joystick with thumbwheel, 4 buttons, and trigger | □ | □ |  |
| 1. Pressure compensated load sense closed centre hydraulic valve fully proportional electrical control | □ | □ |  |
| 1. Stainless steel valve enclosure frame mounted | □ | □ |  |
| 1. 10 micron return line filter | □ | □ |  |
| 1. Parker 28P series pressure line filter | □ | □ |  |
| 1. Parker FLR2 series return filter | □ | □ |  |
| 1. Tema multi coupler for hydraulic and electrical connections to spreader, anti ice, and asphalt patcher | □ | □ |  |
| 1. 37 gallon hydraulic reservoir with sight glass mounted behind cab on drivers side | □ | □ |  |
| 1. Hydraulic oil level sensor with on screen display and audible warning | □ | □ |  |
| 1. Poly electrical enclosure housing the XC43 and XC41 input / output modules | □ | □ |  |
| 1. LED lighting inside electrical enclosure | □ | □ |  |
| 1. Eaton multiplexed vehicle electrical centre with 16 fuses and 8 auxiliary lighting relays | □ | □ |  |
| 1. Auxiliary lighting controlled on touch screen | □ | □ |  |
| 1. Solid state proximity switches for body up indication, max height hoist cut out, and plow down | □ | □ |  |
| 1. 12 volt air solenoid and in cab controls for tailgate release | □ | □ |  |
| 1. Custom programming for City of Surrey trucks and various equipment carried on the truck | □ | □ |  |
| 1. Full electrical and hydraulic schematics for all components including spreader and anti ice units | □ | □ |  |
| 1. On-site training and support upon delivery | □ | □ |  |
| 1. Discuss placement of TEMA to match existing City of Surrey trucks | □ | □ |  |
| **FUNCTIONS INCLUDE** | | | |
| 1. All proportional hydraulic controls for conveyor, spinner, plow up/down, plow left/right, underbody plow up/down’ underbody plow left/right, hoist, pony, anti ice, dust control, prewet, asphalt patcher, and high lift tail gate | □ | □ |  |
| 1. Closed loop ground speed based control and data logging of all granular and liquid products | □ | □ |  |
| 1. J1939 data transmission provided for 3rd party transmission | □ | □ |  |
| 1. Hoist is disabled when coupler is connected or travelling above 20 kph | □ | □ |  |
| 1. Hoist and Pony controls can be detented in the lower position | □ | □ |  |
| 1. Tailgate cannot be opened above 20 kph and automatically locks at 30 kph | □ | □ |  |
| 1. Electric tarp system (sold with body) is controlled on screen and disabled above 20 kph | □ | □ |  |
| 1. Selectable operation screens including spreader, anti ice (3 lane – 2 tier), dump body, pony trailer, asphalt patcher, and dust control | □ | □ |  |
| 1. Emergency lights come on automatically when spreading material | □ | □ |  |
| 1. On screen diagnostics and real time measurements of all inputs, outputs, commands, and calculations. | □ | □ |  |
| 1. **SALT SPREADER WITH PRE-WET** | | | |
| 1. State make and model of units to be supplied | □ | □ |  |
| 1. The unit should consist of a 201 stainless steel body, dual auger discharge/feed conveyor, top grate kit, tip-up spinner assembly, power drive, and all components necessary to make a complete operating unit | □ | □ |  |
| 1. The spreader should be of a “V” box design with capacity of approximately 10 yards, with the capability spreading salt. | □ | □ |  |
| 1. The hopper body length should be approx. 15 feet, with a bolt-on, replaceable flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement The hopper body length should be approx. 15 feet, with a bolt-on, flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement | □ | □ |  |
| 1. The unit should be manufactured from 10 gauge 201 stainless steel with a 2” double crimped top edge for rigidity | □ | □ |  |
| 1. The body sides should have not less than (45) forty-five degree slope to insure free flow of material to the dual auger conveyor system. | □ | □ |  |
| 1. The body and conveyor longitudinal assembly should be 100% electrically welded with a continuous weld between the outside joints. | □ | □ |  |
| 1. 10-gauge stainless steel formed side supports which extend the full side angle height on the hopper and spaced approximately (2) two foot centers should be installed. | □ | □ |  |
| 1. The channel cross sills should be 3”, formed 201 stainless steel channel that tie the lower edge of the longitudinal rail to each side support. | □ | □ |  |
| 1. A stainless steel bolt-on 6” x 9.0# wide flange “H” beam should be elevated 3” above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top 11. screens | □ | □ |  |
| 1. The top screens should be constructed of 3/8” rods welded to form a 2.5” square mesh which is formed by a combination of ¼” x 1-1/2” flat steel and 2” angle iron with the edge supports reinforced by ¼” x 1” flat steel bars. | □ | □ |  |
| 1. Each section should be secured to the “H” beam with two (2) non-freeze 5/8” rod hinges. There should be no fewer than four individual screen assemblies per spreader. | □ | □ |  |
| 1. The spreader box should feature a hydraulic inter-lock system to prevent opening the top grates while hydraulic pressure is present. | □ | □ |  |
| 1. A heavy duty 5/8” stainless steel lift loop should be provided at each corner. | □ | □ |  |
| 1. The body longitudinal and auger trough should be manufactured from 7- gauge 201 stainless steel | □ | □ |  |
| 1. The trough for the augers should be removable, with an inverted V center to isolate each auger, manufactured of 7 gauge 201 stainless steel. | □ | □ |  |
| 1. There should be two 7” O.D. step-flighted right hand and left hand helical augers, running longitudinally within the body, feeding material the length of the hopper to discharge to the spinner. | □ | □ |  |
| 1. The augers should consist of a 4” schedule 80 tube with 2” cold rolled idler shaft and flighting welded the full length. The flighting should be ½” thick. End shafts should be designed to accept a remote speed sensor. | □ | □ |  |
| 1. Height adjustable stainless steel inverted V should cover the augers to reduce loading on the augers | □ | □ |  |
| 1. The augers should be driven by a hydraulic motor, with case drain, directly coupled by a splined shaft to a planetary gear box geared | □ | □ |  |
| 1. The gear box drive shaft should be direct- coupled to the augers | □ | □ |  |
| 1. The idler end of the augers should be supported by 2” 4-bolt flange, heavy duty, and dust-sealed, self-aligning ball bearings. These bearings should be greaseable. | □ | □ |  |
| 1. Remote grease lines should be installed, from the bearings to the rear of the hopper to allow for regular greasing | □ | □ |  |
| 1. A stainless steel, load bearing protective grid with a non-slip surface should be bolted at the rear above the augers. A stainless steel protective shield should be over the front idlers | □ | □ |  |
| 1. A reinforced rear panel should have material shields that follows the contour of the augers and is designed to prevent material leakage when the augers are idle. | □ | □ |  |
| 1. The material should be guided from the augers to the distribution disc by means of two internal adjustable 10 gauge 201 stainless steel material deflectors | □ | □ |  |
| 1. The entire spinner assembly should be manufactured of not less than 10 gauge 201 stainless steel and should be adjustable in height. | □ | □ |  |
| 1. The spinner assembly unit should be removable from the hopper to allow for replacement should the vehicle be hit from behind | □ | □ |  |
| 1. The distributor disc should be at least 20” in diameter. This stainless steel or poly disc should be mounted on a cast iron replaceable hub connected directly to the top mounted motor. The motor should have the “Seal Saver” feature. Should consider 20” poly spinner disc. | □ | □ |  |
| 1. Manually adjustable internal deflectors should control the spread pattern from left to right by controlling where the material drops on the disc. | □ | □ |  |
| 1. A speed senor should be installed on the augers to control the application rate through the IQAN system | □ | □ |  |
| 1. The hopper should be supplied with stainless steel slip-in leg mounting kit for ease of loading and unloading of unit to truck deck | □ | □ |  |
| 1. A tailgate latch kit should be supplied and installed | □ | □ |  |
| 1. A chain binder mounting kit should be supplied | □ | □ |  |
| **PRE-WET TANKS & COMPONENTS** | | | |
| 1. It is the intent of this specification to describe an on board pre-wetting system for dispensing measured amounts of brine and other chemicals used in snow and ice control. | □ | □ |  |
| 1. All components and construction shall use non- ferrous and corrosion resistant materials | □ | □ |  |
| 1. The system should include and be complete with pump, pump control, nozzles, hoses, tanks, fittings, wiring and mounting hardware | □ | □ |  |
| 1. A single 12 VDC sealed pump / motor combination rated at 3 GPM, should have a positive displacement, three chamber diaphragm design with integral 45 PSI shut off switch. | □ | □ |  |
| 1. Motor should be of the permanent magnet design. Pump components should be constructed of polypropylene, viton, and santoprene. | □ | □ |  |
| 1. The pump shall be mounted near the rear of the spreader in a NEMA fiberglass enclosure. The enclosure shall be mounted in a location that will not hinder normal spreader maintenance or operation. | □ | □ |  |
| 1. Electrical connections and wiring should be hard wired within enclosure. Wire harnesses should incorporate element resistant weather pak connectors with disconnects at rear of truck and console. The above mentioned greatly reducing installation and maintenance time while increasing product life and dependability. | □ | □ |  |
| 1. A minimum of two saddle tanks should be supplied and mounted to the spreader unit with a minimum capacity of 100 US gal each | □ | □ |  |
| 1. The tanks should be constructed of a rotationally molded and UV stabilized polypropylene material (natural color) and have a minimum .350” wall thickness. | □ | □ |  |
| 1. Each tank should have a minimum of (2) 5” fill caps, and be lanyard retained. | □ | □ |  |
| 1. Each tank should have inlet ports(s) capable of accepting bulk fill of no less than 2” diameter | □ | □ |  |
| 1. Each tank with be molded with gallon markings | □ | □ |  |
| 1. There should be a crossover line between the two tanks with a minimum line diameter of 1- 1/4” | □ | □ |  |
| 1. A flush kit should be provided to flush product from the tanks | □ | □ |  |
| 1. The tanks should be supplied with stainless steel mounting kits to mount to the V box spreader | □ | □ |  |
| 1. The tanks should have an outlet for a suction line to the pump of 1/2” diameter. The hoses should be of EPDM material | □ | □ |  |
| 1. A ¾” filter with 304 stainless steel reinforced screen and clean-out plug should be installed in the suction line | □ | □ |  |
| 1. Plumbing components should be constructed of heavy duty glass reinforced polypropylene or brass, except check valves. | □ | □ |  |
| 1. The (2) brass spray nozzles 3GPM should be located in the spinner chute assembly of the salt spreader. | □ | □ |  |
| 1. 5-PSI check valves should be installed in the nozzles to prevent siphoning of the liquid chemical. | □ | □ |  |
| **CONTROLLER** | | | |
| 1. The system should have a closed loop flow meter | □ | □ |  |
| 1. A PWM amplifier should be used for the electric motor speed control | □ | □ |  |
| 1. System shall be fully compatible with Parker IQAN control system | □ | □ |  |
| 1. All programming changes to the IQAN system to include pre-wet operations shall be included in the Quotation price. | □ | □ |  |
| 1. The salt spreader and pre-wet tanks shall be wired and matched to the existing City trucks via a TEMA male multi-connections coupler for all hydraulic functions, and electrical & lighting functions | □ | □ |  |
| 1. The unit shall be setup to control the application rate of salt and pre-wet solution, and be calibrated prior to delivery | □ | □ |  |
| 1. All controllers are to be included as part of the installation | □ | □ |  |
| 1. **FRONT MOUNT PLOW AND QUICK HITCH** | | | |
| 1. State make and model of plow and quick hitch | □ | □ |  |
| **QUICK HITCH** | | | |
| 1. True one man hitch system | □ | □ |  |
| 1. Plow force in direct line with frame (34-1/2” wide to push at truck frame width) | □ | □ |  |
| 1. Dependable 2 point connection | □ | □ |  |
| 1. Tapered design jaw boxes allow for horizontal and vertical misalignment when attaching plow | □ | □ |  |
| 1. Low profile truck portion in non-tilt configuration | □ | □ |  |
| 1. Custom front bumpers included | □ | □ |  |
| 1. Lift arm folds flat for summer storage with no tools | □ | □ |  |
| 1. Heavy duty 1” x 4” thrust arm kit to distribute load to frame | □ | □ |  |
| 1. Adjustable lift arm with 3 point chain lift | □ | □ |  |
| 1. Double acting lift cylinder 4" bore x 10" stroke with 2” diameter rod | □ | □ |  |
| 1. Designed for “Level Lift System” | □ | □ |  |
| 1. LED snow plow lights with heated lenses hood mounted on stainless steel brackets | □ | □ |  |
| **SNOWPLOW** | | | |
| 1. Mouldboard is 11' in length and 41" high | □ | □ |  |
| 1. 9' 0" Cutting width at 35 degrees | □ | □ |  |
| 1. 10 gauge mouldboard thickness | □ | □ |  |
| 1. 14" push height | □ | □ |  |
| 1. Integral shield to reduce blow by | □ | □ |  |
| 1. Dual compression spring full trip mouldboard | □ | □ |  |
| 1. Powder coat paint in Omaha Orange | □ | □ |  |
| 1. Snow Ski, not wheels | □ | □ |  |
| 1. Full length snow deflector | □ | □ |  |
| 1. Curb guards on each end | □ | □ |  |
| **Standard features:** | | | |
| 1. Power reverse with two 3” x 10” reversing cylinders, | □ | □ |  |
| 1. Cushion valve, | □ | □ |  |
| 1. Six - 1/2 " x 4" tapered one piece flame cut ribs, | □ | □ |  |
| 1. 2" x 3" x 3/8" top angle, | □ | □ |  |
| 1. Heavy duty 4" x 4" x 3/4" bottom angle with 1/2” gussetts between holes, | □ | □ |  |
| 1. 5/8” x 8” standard AASHO top punched cutting edge, | □ | □ |  |
| 1. Horizontal bracing, built in “level lift” system to keep plow level even when angled fully, | □ | □ |  |
| 1. 4" x 4" x 3/8" cross tube, | □ | □ |  |
| 1. 3 1/2" x 3 1/2" x 1/2" semi-circle, | □ | □ |  |
| 1. Two rubber stops 1-1/2” x 5” x 6” to absorb shock when mouldboard trips, | □ | □ |  |
| 1. Mouldboard pitch adjustable to 5, 10, or 20 angle of attack, | □ | □ |  |
| 1. 100% welded, | □ | □ |  |
| 1. Shot blasted prior to painting, | □ | □ |  |
| 1. Installation manual. | □ | □ |  |

#### [END OF PAGE]

SCHEDULE B-3 – ELECTRIC VEHICLE (EV) TANDEM AXLE TRUCK PREFERRED TECHNICAL SPECIFICATIONS RESPONSE FORM

These Specifications are the preferred Specifications necessary to establish functional and technical requirements. The Goods shall meet or exceed these Specifications. The City is relying on the Contractor to verify suitability and safety of materials, components, equipment, systems and items. Compatibility is of the essence and any modification, accessory, device, material or type of construction which may be necessary shall be considered to be a part of these Specifications whether detailed by item or not.

Set out in detail how your technical and functional solution meets the Specifications. Clearly identify any variance with the Specifications including where conflicts or deviations may exist between your proposed solution and the Specifications or substitutions are recommended. If no substitutions, deviations or conflicts are identified, the City will consider that the equipment offered is in strict compliance with these Specifications.

Contractors are directed to list complete manufacturers’ details of model proposed in the right-most column under manufacturers’ specifications.

Note: Other than entering data in the spaces provided, or including attachments as necessary, make changes to this form or submitting an alternate format is discouraged. If space is insufficient, additional pages may be added as necessary.

|  |  |  |  |
| --- | --- | --- | --- |
| **Preferred Technical Specifications** | **√**  **(Yes)** | **√**  **(No)** | **Manufacturers’ Specifications of Goods Offered. Contractor**  **should complete all spaces in this column.** |
| **A. EXTERIOR** | | | |
| 1.The chassis should have a weight rating of approximately 27,000 kgs GVWR (Class 8) | □ | □ |  |
| 2. Provide load carrying capacity with dump box installed | □ | □ |  |
| 3. The wheelbase to suit dump box configuration. (To fit a 16’6” Dump Box approx.). Allow for hydraulic tank between cab and dump box. Please provide details. Chassis provider to  confirm with body and snowplow provider for the optimal wheelbase | □ | □ |  |
| 4. Front bumper, full width and from either side of chassis rail, painted black, c/w two tow hooks | □ | □ |  |
| 5. Mirrors, two outside west coast style, heat and remote control switched from inside cab, stainless steel backs, c/w 2 auxiliary convex mirrors attached to main mirrors, one each  side | □ | □ |  |
| 6. All lights to comply with BC Provincial/Federal Laws. | □ | □ |  |
| 7. Head lights high/low beam to be LED or upgraded to LED lamps and aligned. | □ | □ |  |
| 8. LED lights for directional lights (including 4- way flashers) | □ | □ |  |
| 9. Cab roof lights to be LED | □ | □ |  |
| 10. Mirrors to have LED lights | □ | □ |  |
| 11. Additional switching to be supplied for  snowplow lighting package (lights supplied by the winter maintenance equipment supplier) | □ | □ |  |
| 12. Rear stop/tail/indicator lights LED, including license plate light | □ | □ |  |
| 13. Additional stop/tail/indicators lights will be included in the dump box | □ | □ |  |
| 14. Two additional LED reverse lights mounted either side of tow hitch | □ | □ |  |
| 15. Mud flaps to be installed behind the from wheels, and in front of and behind the  tandem axle wheels | □ | □ |  |
| 16. The cab shall be painted white | □ | □ |  |
| 17. Cab mounted grab handles – both sides | □ | □ |  |
| 18. Proponent to provide can details whether conventional or cab over configuration | □ | □ |  |
| 19. Cab to have drip moldings | □ | □ |  |
| 20. Composite exterior sun visor | □ | □ |  |
| 21. Boot brushes to be mounted on the lower step on both sides of the truck | □ | □ |  |
| 22. Audible backup alarm, Grote part # 73040 97 dBA to be provided and installed | □ | □ |  |
| 23. Dual roof mounted polished air horns, as well as dual electric horns | □ | □ |  |
| 24. Right side lower door visibility window | □ | □ |  |
| 25. ABS and trailer light wiring to rear of chassis | □ | □ |  |
| 26. Two beacon lights mounted on dump box – LED amber Whelen (R2LPPA), | □ | □ |  |
| 27. Corrosion protection of frame. Cab protection shall also be applied – please  provide details of offering | □ | □ |  |
| 28. 1-piece bonded heated wiper park solar green glass windshield | □ | □ |  |
| **B. BATTERIES & CHARGING** | | | |
| 1. Batteries to provide 300km range, as well as capacity to operate hydraulically powered  from snowplow and salt spreader. | □ | □ |  |
| 2. Provide charging time, level II and level III charging station | □ | □ |  |
| 3. Provide details of hydro requirements for the  equipment onsite for level III charging infrastructure | □ | □ |  |
| **C. INTERIOR & INSTRUMENTS** | | | |
| 1. Driver’s seat, premium Isringhausen high back with air suspension, and two air  lumbar, integrated cushion extension, tilt, and adjustable shock, with dual arm rests. | □ | □ |  |
| 2. Passengers seat, basic Isringhausen high back air suspension passenger seat with mechanical lumbar and integrated cushion  extension, with dual arm rests | □ | □ |  |
| 3. High visibility orange seat belts will be provided. | □ | □ |  |
| 4. Heater/Defroster/Air Conditioning: Multiple speed | □ | □ |  |
| 5. Wipers, two speed plus variable intermittent settings | □ | □ |  |
| 6. Windscreen washers with two-gallon reservoir, electric pump | □ | □ |  |
| 7. Windscreen shall be electrically heated | □ | □ |  |
| 8. Sun visors – 2 internal, driver, passenger padded | □ | □ |  |
| 9. Interior lights, dome mounted with switch and door activated | □ | □ |  |
| 10. Instruments, full instrumentation as standard on bid model, including engine hour meter, air gauges. Gauges are to be supplied as opposed to lights. Outside temperature  gauge included. | □ | □ |  |
| 11. Electronic cruise control | □ | □ |  |
| 12. A diagnostic display with data linked to send warnings to service centre | □ | □ |  |
| 13. Drivers and passenger’s doors to have power windows | □ | □ |  |
| 14. Left-hand and right-hand electric door locks | □ | □ |  |
| 15. Fully insulated rubber floor mats for both driver and passenger | □ | □ |  |
| 16. Uniden CB radio to be provided and installed in the overhead console | □ | □ |  |
| 17. An AM/FM stereo radio with Bluetooth | □ | □ |  |
| 18. Discussion with the suppliers of the IQAN system and the salt spreader shall take place prior to the fitment of any controls in the cab to confirm layout configuration. | □ | □ |  |
| 19. An aluminum storage box shall be fitted between the driver’s and passenger’s seats for the driver store items. The box shall not interfere with any of the driver controls including gear shift, IQAN and salt spreader control displays. A cup holder should also be attached to the storage box | □ | □ |  |
| **D. CHASSIS, SUSPENSION, AXLES AND BRAKES** | | | |
| 1. Front axle – 20,000 lb drop single front axle rate set back configuration | □ | □ |  |
| 1. Front axle – 20,000 Ib taper leaf springs with shock absorbers | □ | □ |  |
| 1. Front brakes - Meritor 16.5x6 Q+ cast spider cam front brakes, double anchor, fabricated   shoes | □ | □ |  |
| 1. Haldex automatic front slack adjusters | □ | □ |  |
| 1. Non-asbestos front brake lining | □ | □ |  |
| 1. Conmet cast iron front brake drums | □ | □ |  |
| 1. Power steering pump, 4 - quart reservoir, power steering cooler | □ | □ |  |
| 1. TRW THP-60 power steering with RCH 45 auxiliary gear | □ | □ |  |
| 1. Rear axles – Meritor 46-146, 46,000 lb tandem axle configuration | □ | □ |  |
| 1. Driver controlled traction control on both tandem axles | □ | □ |  |
| 1. 1 - interaxle lock valve, 1 - driver controlled differential lock forward-rear axle valve and 1   - rear-rear axle valve | □ | □ |  |
| 1. MXL 18T Meritor extended lube main driveline with half round yokes | □ | □ |  |
| 1. MXL 17T Meritor extended lube interaxle driveline with half round yokes | □ | □ |  |
| 1. Hendrickson Primaxx Air 46,000 Ibs rear suspension | □ | □ |  |
| 1. Shock absorbers on tandem axle suspension | □ | □ |  |
| 1. 54” axle spacing | □ | □ |  |
| 1. Rear brakes - Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated   shoes | □ | □ |  |
| 1. Non-asbestos rear brake linings | □ | □ |  |
| 1. Asphalt spreader clearance rear brake pot geometry | □ | □ |  |
| 1. Conmet cast iron rear brake drums | □ | □ |  |
| 1. Wabco Haldex long stroke 30/36 brake chambers installed on the drive axles | □ | □ |  |
| 1. Safety Check – air brake adjustment gauge fitted to all brake assembles | □ | □ |  |
| 1. Frame (24” front frame extension for snowplow) High tensile steel single straight frame rail, bolted with steel cross members. Provide details | □ | □ |  |
| 1. Clear frame behind the cab with inboard air tanks | □ | □ |  |
| **E. BRAKE SYSTEMS** | | | |
| 1. Wabco ABS 4S/4B | □ | □ |  |
| 2. 18.7 CFM air compressor with internal safety valve | □ | □ |  |
| 3. Air dryer with heater mounted inboard chassis rail | □ | □ |  |
| 4. Pull cables on air tanks for easy accessibility  for drivers | □ | □ |  |
| 5. Air tanks to be mounted on inside of chassis rail | □ | □ |  |
| 6. Air connections to end of frame with glad hands for truck and dust covers | □ | □ |  |
| **F. WHEELS & TIRES** | | | |
| 10. 2 – Alocoa 22.5” x 13” 10-hub pilot 4.68 inset aluminum disc front wheels | □ | □ |  |
| 11. 8 – Alocoa 22.5” x 8.25” 10-hub pilot aluminum disc rear wheels | □ | □ |  |
| 12. Polish outside of front wheels | □ | □ |  |
| 13. Polish outside of outer rear wheels | □ | □ |  |
| 14. Front tires – Michelin XZY-3, 445/65R22.5 20ply radials | □ | □ |  |
| 15. Rear tires – Michelin XDS211R22.5 14 ply radial | □ | □ |  |
| **G. MOTOR & TRANSMISSION** | | | |
| 1. Provide detail of motor(s) and transmission configuration | □ | □ |  |
| 1. Provide details on how the hydraulic pump(s) would be driven to provide hydraulic power to operate 1) dumpbox and high lift tailgate, 2) front mounted snowplow, 3) salt spreader, 4) brine tank for applying brine to the street, 5) asphalt hotbox. Items 2 through 5 slide into the dumpbox. | □ | □ |  |
| **H. FILTERS, BELTS AND SERIAL NUMBERS** | | | |
| 1. Provide detail of components and parts required for first major service for complete truck, these item to be provided with the  truck. | □ | □ |  |
| 2. A list of part numbers for major components. | □ | □ |  |
| **I. TRAINING** | | | |
| 1. At dealer expense, provide training for two  drivers and training for two mechanics. All expenses paid by dealer. | □ | □ |  |
| 2. Provide the City of Surrey with access to diagnostic software to trouble shoot and repair faults | □ | □ |  |
| **J. STANDARDS** | | | |
| 1. Vehicle must comply with government regulations and requirements:  * Federal Government Motor Vehicle Standards * BC Motor Vehicle Act and Regulations * BC Workers’ Compensation Board Regulations * Vehicle shall be delivered with CVIP * Vehicle shall be delivered, plated and * insured through the City of Surrey’s Insurance Broker | □ | □ |  |
| **K. STANDARD WARRANTY (provide details)** | | | |
| * Motors * Power Train * Batteries * Chassis * Corrosion | □ | □ |  |
| **L. EXTENDED WARRANTY (provide specific details & costs), MISCELLANEOUS** | | | |
| 1. Provide extended warranty and costs for:    1. Motors    2. Batteries    3. Power train    4. Chassis    5. Dump Box | □ | □ |  |
| 1. Operators Manuals / Service Manuals:    * 1 – Service manual or CD with software    * A build sheet shall be provided detailing (but not limited to the following):      + VIN      + Power Train      + Oil types and quantities for all components      + Tire make, type and size      + Battery details      + Beacon light make      + Body and hydraulic components      + Salt Spreader      + Snowplow | □ | □ |  |
| 3. Keys: 3 sets with each unit | □ | □ |  |
| 4. Basic First Aid Kit (Old Level 1 kit)(HardCase) | □ | □ |  |
| 5. 5 lb. Fire Extinguisher – Mounted | □ | □ |  |
| **M. DUMP BOX AND ACCESSORIES** | | | |
| 1. Aluminum dump box with high lift and tarp system | □ | □ |  |
| 1. Internal length 197” | □ | □ |  |
| 1. Floor length 198” | □ | □ |  |
| 1. Overall length including cab guard 216.9” | □ | □ |  |
| 1. Internal width 89” | □ | □ |  |
| 1. External overall width 99 ¼” | □ | □ |  |
| 1. Overall height including cab guard 80” | □ | □ |  |
| 1. One piece horizontal rib sides 3/16” 5052 aluminum, 36” high | □ | □ |  |
| 1. 2” x 9 ½” sideboards painted black | □ | □ |  |
| 1. Sides lined with ¾” plywood | □ | □ |  |
| 1. High mount cab guard 64” wide, mounted on top of bulkhead, 89” wide, | □ | □ |  |
| 1. Two Whelen R2LPPA LED beacon lights mounted on top of cab guard | □ | □ |  |
| 1. A minimum of two grab handles either side of the dump box at the front by the steps on body and cab guard | □ | □ |  |
| 1. Tailgate 3/16 5052 aluminum | □ | □ |  |
| 1. Floor, ½” 5086 aluminum flat floor, with 3/8” 5086 Aluminum sacrificial overlay plate | □ | □ |  |
| 1. Longsills - single piece formed long sills with continuous welds and rear doubler reinforcement, ¼” 5052 aluminum formed 7 ¼ “high | □ | □ |  |
| 1. A close-up of a metal container     Description automatically generatedHigh lift tail gate, 38” arm | □ | □ |  |
| 1. Tailgate 44” high, 90 ½ ” wide, with a lifting bracket in the centre of the tail gate | □ | □ |  |
| 1. One piece alloy cast Tailgate High lift pivot with integral safety lock | □ | □ |  |
| 1. A metal object with a metal object on the side     Description automatically generated with medium confidenceElectric operated roller tarp system | □ | □ |  |
| 1. Steps either side of body as per photo above approx. 42” long | □ | □ |  |
| 1. A close-up of a device     Description automatically generated4 – aluminum lugs to be welded to the driver’s side of the body to retain hydraulic hoses and electrical cabling from the hydraulic valving to various equipment mounted in the dump box | □ | □ |  |
| 1. Fender over rear tandems approx. 110” | □ | □ |  |
| 1. Shovel holder on drivers side of body | □ | □ |  |
| 1. A close-up of a truck     Description automatically generatedSteps at front of body on either side | □ | □ |  |
| 1. Alloy cast hoist A frame mounts and fittings | □ | □ |  |
| 1. 156” stroke, 6” diameter, 4 stage hydraulic cylinder | □ | □ |  |
| 1. 10” hoist bed for mounting cylinder | □ | □ |  |
| 1. Box safety prop mounted to hoist bed | □ | □ |  |
| 1. Box guides mounted to the chassis | □ | □ |  |
| 1. Box hinge assembly with 2” pins | □ | □ |  |
| 1. Tow apron with pintle hock, LED reverse lights, wiring connections   The back of a truck  Description automatically generated | □ | □ |  |
| 1. Electrical trailer plugs, 1 – 7 pin SAE J560, and 1 - 7 pin SAE J560 AUX. | □ | □ |  |
| 1. Two LED rectangle reversing lights | □ | □ |  |
| 1. Wiring shall be Sealco sealed wiring harness with AMP connectors | □ | □ |  |
| 1. Lighting shall be LED Optronics with integral reflex lens for all body lighting | □ | □ |  |
| 1. The pintle hock should be a Premier 2300 sack reducing coupling | □ | □ |  |
| 1. **IQAN HYDRAULIC SYSTEM** | | | |
| 1. Parker IQUAN Control system MD4-7/MFJS must be provided to match the system with the City’s other tandem trucks | □ | □ |  |
| 1. Parker PAVC65 load sense variable displacement piston pump 30 gpm @ 1800 rpm | □ | □ |  |
| 1. Parker 890 series hot shift PTO with direct pump mount and wet splines | □ | □ |  |
| 1. IQAN MD4-7 master display unit dash mounted with 7” colour touchscreen display | □ | □ |  |
| 1. J1939 CAN bus communication | □ | □ |  |
| 1. LC5 multi-function joystick with thumbwheel, 4 buttons, and trigger | □ | □ |  |
| 1. Pressure compensated load sense closed centre hydraulic valve fully proportional electrical control | □ | □ |  |
| 1. Stainless steel valve enclosure frame mounted | □ | □ |  |
| 1. 10 micron return line filter | □ | □ |  |
| 1. Parker 28P series pressure line filter | □ | □ |  |
| 1. Parker FLR2 series return filter | □ | □ |  |
| 1. Tema multi coupler for hydraulic and electrical connections to spreader, anti ice, and asphalt patcher | □ | □ |  |
| 1. 37 gallon hydraulic reservoir with sight glass mounted behind cab on drivers side | □ | □ |  |
| 1. Hydraulic oil level sensor with on screen display and audible warning | □ | □ |  |
| 1. Poly electrical enclosure housing the XC43 and XC41 input / output modules | □ | □ |  |
| 1. LED lighting inside electrical enclosure | □ | □ |  |
| 1. Eaton multiplexed vehicle electrical centre with 16 fuses and 8 auxiliary lighting relays | □ | □ |  |
| 1. Auxiliary lighting controlled on touch screen | □ | □ |  |
| 1. Solid state proximity switches for body up indication, max height hoist cut out, and plow down | □ | □ |  |
| 1. 12 volt air solenoid and in cab controls for tailgate release | □ | □ |  |
| 1. Custom programming for City of Surrey trucks and various equipment carried on the truck | □ | □ |  |
| 1. Full electrical and hydraulic schematics for all components including spreader and anti ice units | □ | □ |  |
| 1. On-site training and support upon delivery | □ | □ |  |
| 1. Discuss placement of TEMA to match existing City of Surrey trucks | □ | □ |  |
| **FUNCTIONS INCLUDE** | | | |
| 1. All proportional hydraulic controls for conveyor, spinner, plow up/down, plow left/right, underbody plow up/down’ underbody plow left/right, hoist, pony, anti ice, dust control, prewet, asphalt patcher, and high lift tail gate | □ | □ |  |
| 1. Closed loop ground speed based control and data logging of all granular and liquid products | □ | □ |  |
| 1. J1939 data transmission provided for 3rd party transmission | □ | □ |  |
| 1. Hoist is disabled when coupler is connected or travelling above 20 kph | □ | □ |  |
| 1. Hoist and Pony controls can be detented in the lower position | □ | □ |  |
| 1. Tailgate cannot be opened above 20 kph and automatically locks at 30 kph | □ | □ |  |
| 1. Electric tarp system (sold with body) is controlled on screen and disabled above 20 kph | □ | □ |  |
| 1. Selectable operation screens including spreader, anti ice (3 lane – 2 tier), dump body, pony trailer, asphalt patcher, and dust control | □ | □ |  |
| 1. Emergency lights come on automatically when spreading material | □ | □ |  |
| 1. On screen diagnostics and real time measurements of all inputs, outputs, commands, and calculations. | □ | □ |  |
| **P. SALT SPREADER WITH PRE-WET** | | | |
| 1. State make and model of units to be supplied | □ | □ |  |
| 1. The unit should consist of a 201 stainless steel body, dual auger discharge/feed conveyor, top grate kit, tip-up spinner assembly, power drive, complete operating unit and all components necessary to make a | □ | □ |  |
| 1. The spreader should be of a “V” box design with capacity of approximately 10 yards, with the capability spreading salt. | □ | □ |  |
| 1. The hopper body length should be approx. 15 feet, with a bolt-on, replaceable flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement The hopper body length should be approx. 15 feet, with a bolt-on, flanged longitudinal overhang for supporting the spinner assembly. The hopper should be no more than 84” wide - outside measurement | □ | □ |  |
| 1. The unit should be manufactured from 10 gauge 201 stainless steel with a 2” double crimped top edge for rigidity | □ | □ |  |
| 1. The body sides should have not less than forty-five degree slope to insure free flow of material to the dual auger conveyor system. | □ | □ |  |
| 1. The body and conveyor longitudinal assembly should be 100% electrically welded with a | □ | □ |  |
| 1. 10 gauge stainless steel formed side supports which extend the full side angle height on the hopper and spaced approximately (2) two foot centers should be installed. | □ | □ |  |
| 1. The channel cross sills should be 3”, formed 201 stainless steel channel that tie the lower edge of the longitudinal rail to each side support. | □ | □ |  |
| 1. A stainless steel bolt-on 6” x 9.0# wide flange “H” beam should be elevated 3” above the top edge of the hopper, thus providing a longitudinal brace and hinge point for the top screens | □ | □ |  |
| 1. The top screens should be constructed of 3/8” rods welded to form a 2.5” square mesh which is formed by a combination of ¼” x 1-1/2” flat steel and 2” angle iron with the edge supports reinforced by ¼” x 1” flat steel bars. | □ | □ |  |
| 1. Each section should be secured to the “H” beam with two (2) non-freeze 5/8” rod hinges. There should be no fewer than four individual screen assemblies per spreader. | □ | □ |  |
| 1. The spreader box should feature a hydraulic inter-lock system to prevent opening the top grates while hydraulic pressure is present. | □ | □ |  |
| 1. A heavy duty 5/8” stainless steel lift loop should be provided at each corner. | □ | □ |  |
| 1. The body longitudinal and auger trough should be manufactured from 7- gauge 201 stainless steel. | □ | □ |  |
| 1. The trough for the augers should be removable, with an inverted V center to isolate each auger, manufactured of 7 gauge 201 stainless steel. | □ | □ |  |
| 1. There should be two 7” O.D. step-flighted right hand and left hand helical augers, running longitudinally within the body, feeding material the length of the hopper to discharge to the spinner. | □ | □ |  |
| 1. The augers should consist of a 4” schedule 80 tube with 2” cold rolled idler shaft and flighting welded the full length. The flighting should be ½” thick. End shafts should be designed to accept a remote speed sensor. | □ | □ |  |
| 1. Height adjustable stainless steel inverted V should cover the augers to reduce loading on the augers | □ | □ |  |
| 1. The augers should be driven by a hydraulic motor, with case drain, directly coupled by a splined shaft to a planetary gear box geared appropriately. | □ | □ |  |
| 1. The gear box drive shaft should be direct- coupled to the augers | □ | □ |  |
| 1. The idler end of the augers should be supported by 2” 4-bolt flange, heavy duty, and dust-sealed, self-aligning ball bearings. These bearings should be greaseable. | □ | □ |  |
| 1. Remote grease lines should be installed, from the bearings to the rear of the hopper to allow for regular greasing | □ | □ |  |
| 1. A stainless steel, load bearing protective grid with a non-slip surface should be bolted at the rear above the augers. A stainless steel protective shield should be over the front idlers. | □ | □ |  |
| 1. A reinforced rear panel should have material shields that follows the contour of the augers and is designed to prevent material leakage when the augers are idle. | □ | □ |  |
| 1. The material should be guided from the augers to the distribution disc by means of two internal adjustable 10 gauge 201 stainless steel material deflectors | □ | □ |  |
| 1. The entire spinner assembly should be manufactured of not less than 10 gauge 201 stainless steel and should be adjustable in height. | □ | □ |  |
| 1. The spinner assembly unit should be removable from the hopper to allow for replacement should the vehicle be hit from behind | □ | □ |  |
| 1. The distributor disc should be at least 20” in diameter. This stainless steel or poly disc should be mounted on a cast iron replaceable hub connected directly to the top mounted motor. The motor should have the “Seal Saver” feature. Should consider 20” poly spinner disc. | □ | □ |  |
| 1. Manually adjustable internal deflectors should control the spread pattern from left to right by controlling where the material drops on the disc. | □ | □ |  |
| 1. A speed senor should be installed on the augers to control the application rate through the IQAN system | □ | □ |  |
| 1. The hopper should be supplied with stainless steel slip-in leg mounting kit for ease of loading and unloading of unit to truck deck | □ | □ |  |
| 1. A tailgate latch kit should be supplied and installed | □ | □ |  |
| 1. A chain binder mounting kit should be supplied | □ | □ |  |
| **PRE-WET TANKS & COMPONENTS** | | | |
| 1. It is the intent of this specification to describe an on board pre-wetting system for dispensing measured amounts of brine and other chemicals used in snow and ice control. | □ | □ |  |
| 1. All components and construction shall use non- ferrous and corrosion resistant materials | □ | □ |  |
| 1. The system should include and be complete with pump, pump control, nozzles, hoses, tanks, fittings, wiring and mounting hardware | □ | □ |  |
| 1. A single 12 VDC sealed pump / motor combination rated at 3 GPM, should have a positive displacement, three chamber diaphragm design with integral 45 PSI shut off switch. | □ | □ |  |
| 1. Motor should be of the permanent magnet design. Pump components should be constructed of polypropylene, viton, and santoprene. | □ | □ |  |
| 1. The pump should be mounted near the rear of the spreader in a NEMA fiberglass enclosure. The enclosure should be mounted in a location that should not hinder normal spreader maintenance or operation. | □ | □ |  |
| 1. Electrical connections and wiring should be hard wired within enclosure. Wire harnesses should incorporate element resistant weather pak connectors with disconnects at rear of truck and console. The above mentioned greatly reducing installation and maintenance time while increasing product life and dependability. | □ | □ |  |
| 1. A minimum of two saddle tanks should be supplied and mounted to the spreader unit with a minimum capacity of 100 US gal each | □ | □ |  |
| 1. The tanks should be constructed of a rotationally molded and UV stabilized polypropylene material (natural color) and have a minimum .350” wall thickness. | □ | □ |  |
| 1. Each tank should have a minimum of (2) 5” fill caps, and be lanyard retained. | □ | □ |  |
| 1. Each tank should have inlet ports(s) capable of accepting bulk fill of no less than 2” diameter hose connection and should be vented. | □ | □ |  |
| 1. Each tank with be molded with gallon markings | □ | □ |  |
| 1. There should be a crossover line between the two tanks with a minimum line diameter of 1- 1/4” | □ | □ |  |
| 1. A flush kit should be provided to flush product from the tanks | □ | □ |  |
| 1. The tanks should be supplied with stainless steel mounting kits to mount to the V box spreader | □ | □ |  |
| 1. The tanks should have an outlet for a suction line to the pump of 1/2” diameter. The hoses should be of EPDM material | □ | □ |  |
| 1. A ¾” filter with 304 stainless steel reinforced screen and clean-out plug should be installed in the suction line | □ | □ |  |
| 1. Plumbing components should be constructed of heavy duty glass reinforced polypropylene or brass, except check valves. | □ | □ |  |
| 1. The (2) brass spray nozzles 3GPM should be located in the spinner chute assembly of the salt spreader. | □ | □ |  |
| 1. 5-PSI check valves should be installed in the nozzles to prevent siphoning of the liquid chemical | □ | □ |  |
| **CONTROLLER** | | | |
| 1. The system should have a closed loop flow meter | □ | □ |  |
| 1. A PWM amplifier should be used for the electric motor speed control | □ | □ |  |
| 1. System shall be fully compatible with Parker IQAN control system | □ | □ |  |
| 1. All programming changes to the IQAN system to include pre-wet operations shall be included in the Quotation price. | □ | □ |  |
| 1. The salt spreader and pre-wet tanks shall be wired and matched to the existing City trucks via a TEMA male multi-connections coupler for all hydraulic functions, and electrical & lighting functions | □ | □ |  |
| 1. The unit shall be setup to control the application rate of salt and pre-wet solution, and be calibrated prior to delivery | □ | □ |  |
| 1. All controllers are to be included as part of the installation | □ | □ |  |
| **Q. FRONT MOUNT PLOW AND QUICK HITCH** | | | |
| 1. State make and model of plow and quick hitch | □ | □ |  |
| **QUICK HITCH** | | | |
| 1. True one man hitch system | □ | □ |  |
| 1. Plow force in direct line with frame (34-1/2” wide to push at truck frame width) | □ | □ |  |
| 1. Dependable 2 point connection | □ | □ |  |
| 1. Tapered design jaw boxes allow for horizontal and vertical misalignment when attaching plow | □ | □ |  |
| 1. Low profile truck portion in non-tilt configuration | □ | □ |  |
| 1. Custom front bumpers included | □ | □ |  |
| 1. Lift arm folds flat for summer storage with no tools | □ | □ |  |
| 1. Heavy duty 1” x 4” thrust arm kit to distribute load to frame | □ | □ |  |
| 1. Adjustable lift arm with 3 point chain lift | □ | □ |  |
| 1. Double acting lift cylinder 4" bore x 10" stroke with 2” diameter rod | □ | □ |  |
| 1. Designed for “Level Lift System” | □ | □ |  |
| 1. LED snow plow lights with heated lenses hood mounted on stainless steel brackets | □ | □ |  |
| **SNOWPLOW** | | | |
| 1. Mouldboard is 11' in length and 41" high | □ | □ |  |
| 1. 9' 0" Cutting width at 35 degrees | □ | □ |  |
| 1. 10 gauge mouldboard thickness | □ | □ |  |
| 1. 14" push height | □ | □ |  |
| 1. Integral shield to reduce blow by | □ | □ |  |
| 1. Dual compression spring full trip mouldboard | □ | □ |  |
| 1. Powder coat paint in Omaha Orange | □ | □ |  |
| 1. Snow Ski, not wheels | □ | □ |  |
| 1. Full length snow deflector | □ | □ |  |
| 1. Curb guards on each end | □ | □ |  |
| **STANDARD FEATURES:** | | | |
| 1. Power reverse with two 3” x 10” reversing cylinders, | □ | □ |  |
| 1. Cushion valve, | □ | □ |  |
| 1. Six - 1/2 " x 4" tapered one piece flame cut ribs, | □ | □ |  |
| 1. 2" x 3" x 3/8" top angle, | □ | □ |  |
| 1. Heavy duty 4" x 4" x 3/4" bottom angle with 1/2” gussetts between holes, | □ | □ |  |
| 1. 5/8” x 8” standard AASHO top punched cutting edge, | □ | □ |  |
| 1. Horizontal bracing, built in “level lift” system to keep plow level even when angled fully, | □ | □ |  |
| 1. 4" x 4" x 3/8" cross tube, | □ | □ |  |
| 1. 3 1/2" x 3 1/2" x 1/2" semi-circle, | □ | □ |  |
| 1. Two rubber stops 1-1/2” x 5” x 6” to absorb shock when mouldboard trips, | □ | □ |  |
| 1. Mouldboard pitch adjustable to 5, 10, or 20 angle of attack, | □ | □ |  |
| 1. 100% welded, | □ | □ |  |
| 1. Shot blasted prior to painting, | □ | □ |  |
| 1. Installation manual. | □ | □ |  |

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