



## REQUEST FOR QUOTATIONS

**Title:** SUPPLY AND DELIVERY OF ONE (OR MORE)  
2000 IMP GAL TANKER TRUCK

**Reference No.:** 1220-040-2014-037

**FOR THE SUPPLY OF GOODS**

**(General Services)**

**REQUEST FOR QUOTATIONS**

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## REQUEST FOR QUOTATIONS

### 1. INTRODUCTION

The City of Surrey (the "City") invites contractors to provide a quotation on the form attached as Schedule B to Attachment 1 (the "Quotation") for the supply of the goods (if any) and services described in Schedule A to Attachment 1 (the "Goods"). The description of the Goods sets out the minimum requirements of the City. A person that submits a Quotation (the "Contractor") should prepare a Quotation that meets the minimum requirements, and may as it may choose, in addition, to also include goods, services or terms that exceed the minimum requirements.

### 2. ADDRESS FOR DELIVERY

A Quotation should be labelled with the Contractor's name, RFQ title and number. A Quotation should be submitted in the form attached to this RFQ as Schedule B – Form of Quotation.

The Contractor may submit a Quotation either by email or in a hard copy, as follows:

#### (a) Email

If the Contractor chooses to submit by email, the Contractor should submit the Quotation electronically in a single pdf file to the City by email at: [purchasing@surrey.ca](mailto:purchasing@surrey.ca)

PDF emailed Applications are preferred and the City will confirm receipt of emails. Note that the maximum file size the City can receive is 10Mb. If sending large email attachments, Contractors should phone to confirm receipt. A Contractor bears all risk that the City's equipment functions properly so that the City receives the Application.

#### (b) Hard Copy (Courier/ Hand Deliver)

If the Contractor chooses NOT to submit by email, the Contractor should submit one original unbound Quotation and two (2) copies (three (3) in total) which should be delivered to the City at the office of:

Name: Richard Oppelt, Purchasing Manager  
at the following location:

Address: Surrey City Hall  
Finance & Technology Department - Purchasing Section  
Reception Counter, 5th Floor West  
13450 - 104 Avenue Surrey, BC, Canada V3T 1V8

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

**3. DATE**

The City would prefer to receive Quotations on or before **May 16, 2014**. The City's office hours are 8:30 a.m. to 4:00 p.m., Monday to Friday, except statutory holidays.

**4. INQUIRIES**

All inquiries related to this Request for Quotations ("**RFQ**") should be directed in writing to the person named below (the "**City Representative**"). Information obtained from any other source other than the City Representative may not be relied upon.

Name: Richard Oppelt, Purchasing Section

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

Reference No. 1220-040-2014-037

**5. ADDENDA**

If the City determines that an amendment is required to this RFQ, the City's Representative will issue a written addendum by posting it on the BC Bid Website at [www.bcbid.gov.bc.ca](http://www.bcbid.gov.bc.ca) (the "BC Bid Website) and the City Website at [www.surrey.ca](http://www.surrey.ca) (the "City Website") that will form a part of this RFQ. It is the responsibility of Contractor to check the BC Bid Website and the City Website for addenda. The only way this RFQ may be added to, or amended in any way, is by a formal written addendum. No other communication, whether written or oral, from any person will affect or modify the terms of this RFP or may be relied upon by any Contractor. By delivery of a Quotation, the Contractor is deemed to have received, accepted and understood the entire RFQ, including any and all addenda.

**6. NO CONTRACT**

This RFQ is simply an invitation for Quotations (including prices and terms) for the convenience of all parties. It is not a tender and no obligations of any kind will arise from this RFQ or the submission of Quotations. The City may negotiate changes to any terms of a Quotation, including terms in Attachment 1, Schedule A, and Schedule B including prices, and may negotiate with one or more Contractors or may at any time invite or permit the submission of Quotations (including prices and terms) from other parties who have not submitted Quotations.

**7. CONTRACTOR'S EXPENSES**

Contractors are solely responsible for their own expenses in preparing and submitting Quotations, and for any meetings, negotiations or discussions with the City or its representatives and consultants, relating to or arising from the RFQ. The City will not be liable to any Contractor for any claims, whether for costs, expenses, losses or damages, or loss of anticipated profits, incurred by the Contractor in preparing and submitting a

Quotation, or participating in negotiations for a contract, or other activity related to or arising out of this RFQ.

## **8. CONTRACTOR'S QUALIFICATIONS**

By submitting a Quotation, a Contractor represents that it has the expertise, qualifications, resources, and relevant experience to supply the Goods and Services.

## **9. CONFLICT OF INTEREST**

A Contractor must disclose in its Quotation any actual or potential conflicts of interest and existing business relationships it may have with the City, its elected or appointed officials or employees. The City may rely on such disclosure.

## **10. SOLICITATION OF COUNCIL MEMBERS, CITY STAFF AND CITY CONSULTANTS**

Contractors and their agents will not contact any member of the City Council, City staff or City consultants with respect to this RFQ, other than the contact person named in Section 4, at any time prior to the award of a contract or the cancellation of this RFQ.

## **11. CONFIDENTIALITY**

All Quotations become the property of the City and will not be returned to the Contractor. All Quotations will be held in confidence by the City unless otherwise required by law. Contractors should be aware the City is a "public body" defined by and subject to the *Freedom of Information and Protection of Privacy Act* of British Columbia.

## **12. SIGNATURE**

The legal name of the person or firm submitting the Quotation should be inserted in the Quotation. The Quotation should be signed by a person authorized to sign on behalf of the Contractor and include the following:

- (a) If the Contractor is a corporation then the full name of the corporation should be included, together with the names of authorized signatories. The Quotation should be executed by all of the authorized signatories or by one or more of them provided that a copy of the corporate resolution authorizing those persons to execute the Quotation on behalf of the corporation is submitted;
- (b) If the Contractor is a partnership or joint venture then the name of the partnership joint venture and the name of each partner or joint venturer should be included, and each partner or joint venturer should sign personally (or, if one or more person(s) have signing authority for the partnership or joint venture, the partnership or joint venture should provide evidence to the satisfaction of the City that the person(s) signing have signing authority for the partnership or joint venture). If a partner or joint venturer is a corporation then such corporation should sign as indicated in subsection (a) above; or

- (c) If the Contractor is an individual, including a sole proprietorship, the name of the individual should be included.

### **13. PRICES**

All prices submitted shall be for the entire equipment described in Schedule A with pricing options shown separately, where permitted.

Prices shall be shown on the Quotation form with GST/PST, Environmental Taxes and Levies are to be shown separately.

Deliver to:

City of Surrey  
Fire Hall 9  
Service Centre,  
14901 – 64th Avenue  
Surrey, BC V3S 1X8

Attention: Gordon Wilson, Chief Mechanic

Prices are to be quoted F.O.B. Destination, freight prepaid, unloading at destination, import duties, brokerage fees, royalties, handling charges, overhead, profit and all other costs included.

GST/PST or Environmental Tax Rates will be allowed.

Prices to be quoted in Canadian currency.

The lowest price of any Quotation will not necessarily be accepted but will be analyzed to determine best value.

### **14. BRAND NAME SPECIFICATIONS AND/OR REFERENCES**

The use of the name of a manufacturer or of any particular make, model or brand in describing an item does not restrict Contractors to that manufacturer or specific article unless limited by the term “no substitute”. However, the article being offered must be of such character and quality so that it will serve the purpose for which it is to be used equally as well as that specified, and the Contractor shall warrant to the City that it is fit for that purpose. Quotations on comparable items must clearly state the exact article being offered including any and all applicable options and the Contractor shall furnish such other information concerning the article being offered as will be helpful in evaluating its acceptability for the purpose intended. If the Contractor does not indicate that the article offered is other than as specified, it will be understood that the Contractor is offering the article exactly as specified. Contractors should complete documentation on the specifications and quality levels of the proposed products. Quotations submitted that do not contain this documentation may be subject to rejection.

**15. ANTICIPATED QUANTITIES**

The City reserves the right and discretion to place orders on quoted items during the duration of the term of the agreement as per Schedule B – Form of Quotation on an as per need basis. All quantities are anticipated quantities only and may or may not increase or decrease according to requirements.

## ATTACHMENT 1 - GENERAL TERMS AND CONDITIONS

### DEFINITIONS AND INTERPRETATION

1. In these General Terms and Conditions:
  - (a) **"Agreement"** has the meaning set out in Section 2;
  - (b) **"City"** means the City of Surrey;
  - (c) **"Contractor"** means a contractor who's Quotation has been accepted by the City and who is supplying the Goods under this Agreement;
  - (d) **"Goods"** means the equipment or materials that are the subject of this Agreement; and
  - (e) **"Purchase Price"** means the price quoted by the Contractor and accepted by the City, unless otherwise agreed by the parties in writing, and includes all taxes, duties, freight charges and other charges except PST and GST.
  
2. This Agreement may be modified only by express and specific written agreement. In the event of a conflict between the provisions of any documents listed below, then the documents shall govern and take precedence in the following order:
  - (a) these General Terms and Conditions;
  - (b) the specifications set out in Schedule A of the Request for Quotations ("**RFQ**");
  - (c) the RFQ;
  - (d) the Quotation; and
  - (e) other terms, if any, that are agreed to by the parties in writing.

### GOODS

3. The Contractor will supply the Goods in accordance with this Agreement. The Goods supplied will meet the specifications set out in Schedule A of the RFQ and as described in the Quotation set out in Schedule B of the RFQ.
  
4. The Contractor will deliver the Goods free and clear of all liens and encumbrances in the manner and to the destination stipulated. In the event of the Contractor's failure to meet this condition, the Contractor will, on written notice from the City, forthwith return all monies paid by the City on account of the Goods and in addition the City may by written notice terminate this Agreement without liability, and in such event, in addition to the above, the Contractor will be liable for any and all expenses or losses incurred by the City resulting from such failure.

### PURCHASE PRICE

5. The City will pay the Purchase Price to the Contractor in accordance with this Agreement. The Purchase Price shall also include without limitation all costs of boxing, packing, crating, and loading and unloading the Goods at the prescribed destination.

### TIME

6. Time is of the essence.

### PAYMENT

7. Invoices must include the Contractor's name, address and telephone number, the City's purchase order number, the Contractor's invoice number, the Contractor's GST registration number or an indication that it is not applicable if the Contractor is a small trader, the quantity, tax (if any) and the complete Purchase Price calculations, including extensions and discounts.



8. The City will pay the invoice, in the amount as the City determines is correct less any deductions for setoffs or holdbacks permitted by this Agreement including, without limitation, those described in Sections 10, 11 and 12, within 30 days of the receipt of the invoice, unless the parties have agreed in writing to other payment terms. The payment by the City of any invoice will not bind the City with respect to any subsequent payment or final payment and will not mean that the City has accepted that the Goods are in accordance with the requirements of this Agreement, or that the Contractor is in any manner released from its obligation to comply with this Agreement.

9. **Submit Invoices by Email:**

If the Contractor chooses to submit by email, the Contractor must submit the Invoice(s) electronically in a single pdf file (2Mb Maximum) to the City by email at: [surreyinvoices@surrey.ca](mailto:surreyinvoices@surrey.ca)

**Submit Invoices by Hard Copy:**

Invoices will be submitted by the Contractor by mail to:

City of Surrey  
Fire Hall 9  
Service Centre,  
14901 – 64th Avenue  
Surrey, BC, V3S 1X8

Attention: Gordon Wilson, Chief Mechanic

10. Unless otherwise provided, all dollar amounts referred to in this Agreement are in lawful money of Canada.

**DEFICIENCIES**

10. The City shall have a reasonable time to inspect and to accept the Goods. The City may reject any Goods not in accordance with this Agreement, whether due to damage resulting from improper packing, loading, unloading or otherwise. The City shall notify the Contractor of rejection of the Goods whereupon the Goods will be held subject to the disposition by the Contractor. Any costs or expenses incurred by the City as a result of the rejection of the Goods are, immediately upon written demand by the City, payable by the Contractor, and may be set off against any payments owing by the City to the Contractor.

11. The City may hold back from payments otherwise due to the Contractor up to 150% of a reasonable estimate, as determined by the City, on account of deficient or defective materials. This holdback may be held, without interest, until replacement Goods are received or such deficiency or defect is remedied.

**DEFAULT AND TERMINATION**

12. In the event the Contractor does not ship the Goods by the shipping date specified in this Agreement, or does not deliver the Goods by the delivery date specified in this Agreement, or otherwise fails to comply with the requirements of this Agreement, then:

(a) the City reserves the right to terminate this Agreement, in whole or in part, and in the event of such termination no payment will be owing by the City on account of this Agreement and the Contractor will be liable for any and all expenses or loss resulting from such failure or delay and will return all monies paid by the City; or

- (b) if the City does not terminate this Agreement for late shipping or delivery, the City may deduct and set off from any payments owing to the Contractor all additional costs the City reasonably incurs on account of the late shipping or delivery.
13. The City may by written notice at any time cancel this Agreement with respect to Goods which, as of the date of cancellation, have not been shipped.
14. If the Contractor becomes insolvent or makes an assignment for the benefit of creditors or a receiver or trustee is appointed for the property of the Contractor, then the City may, at its election, and without prejudice to its rights at law or in equity, terminate this Agreement.
15. The City will not accept nor be responsible for any restocking charges for any Goods shipped to the City and then, for whatever reason, returned to the Contractor pursuant to this Agreement. The Contractor is to bear all costs including shipping and handling of returned Goods.

### **WARRANTIES AND INDEMNITIES**

16. The Contractor warrants that the Goods shall be free from defects in design, materials, workmanship and title, shall conform in all respects to the terms of this Agreement, shall be fit and suitable and perform satisfactorily for the purposes and under the conditions made known to the Contractor by the City or which were reasonably inferable. The Goods shall be at least equal to the higher of national standards or codes (such as, by way of illustration, CSA or ASTM), or standards and codes customarily applicable at the place where the City will use the Goods. The Goods shall be of the best quality, if no quality is specified. This general warranty is independent of and without prejudice to any specific warranty or service guarantee offered by the Contractor or third party manufacturer or supplier of the Goods in connection with the purpose for which the Goods were purchased. The Contractor shall assign to the City any warranty or service guarantee offered by a third party manufacturer or supplier of the Goods. Notwithstanding this assignment, if at any time up to one year from the date of delivery or installation (if applicable) the City determines the Goods or any part do not conform to these warranties, the City shall notify the Contractor within a reasonable time after such discovery, and the Contractor shall then promptly correct such nonconformity at the Contractor's expense. Goods used to correct nonconformity shall be similarly warranted for one year from the date of installation. The Contractor's liability shall extend to all liabilities, losses, damages, claims and expenses incurred by the City caused by any breach of any of the above warranties.
17. The Contractor warrants and guarantees that Goods delivered under this Agreement do not infringe any valid patent, copyright or trademark, foreign or domestic, owned or controlled by any other corporation, firm or person, and agrees to indemnify and save harmless the City and all of its elected and appointed officials, officers, employees, servants, representatives and agents (collectively the "**Indemnitees**"), from and against any and all claims, demands, causes of action, suits, losses, damages and costs, liabilities, expenses and judgments (including all actual legal costs) by reason of any claim, action or litigation arising out of any alleged or actual infringement of any patent, copyright or trademark, foreign or domestic, relating to the Goods supplied under this Agreement.
18. The Contractor represents and warrants that all Goods delivered under this Agreement shall comply with all applicable codes, statutes, by-laws, rules and regulations, of any federal, provincial, municipal or other competent authority for the time being in force, including any environmental laws and that the Goods are not dangerous to the environment or to person or health.
19. The Contractor will indemnify and save harmless the Indemnitees from and against all claims, demands, causes of action, suits, losses, damages and costs, liabilities, expenses and judgments (including all actual legal costs) for damage to or destruction or loss of property, including loss of use, and injury to or death of any person or persons which any of the Indemnitees incur, suffer or

are put to arising out of or in connection with any failure, breach or non-performance by the Contractor of any obligation of this Agreement, or any wrongful or negligent act or omission of the Contractor or any employee or agent of the Contractor.

## **CUSTOMS**

20. Documentation for shipments of Goods from outside Canada shall be provided by a Contractor by airmail and will include all documents as required by law or customary practice. All packages are to be marked as follows:

"Upon arrival, please contact customs broker:  
Livingston International Inc.  
Telephone: 604-685-3555  
Fax: 604-605-8231  
Email: [cst19@livingstonintl.com](mailto:cst19@livingstonintl.com)"

## **INSPECTIONS**

21. If this Agreement pertains to the fabrication, assembly or other processing of the Goods, representatives of the City shall be permitted free access at all reasonable times for the purpose of inspection, testing or obtaining information as to the progress of the fabrication, assembly or processing.

## **SAFETY**

22. If this Agreement includes any inspection, installation or other work on the City's premises by the Contractor, or representative or subcontractor of the Contractor, all such activity shall be performed and undertaken in strict compliance with all applicable health and safety laws and regulations, including, without limitation, the Workers Compensation Act, the Occupational Health & Safety Regulation and the Hazardous Products Act, and also in strict compliance with any published and issued by the City for use at the City's premises. The Contractor shall provide the City with the Contractor's Workers Compensation Board registration number and a letter from the Workers Compensation Board confirming the supplier is registered in good standing with the Workers Compensation Board and that all assessments have been paid to the date thereof prior to the City having any obligation to pay monies under this Agreement.

## **SHOP DRAWINGS**

23. Drawings for approval and blueprints with all details thereon must be furnished within ten (10) days after the pre-construction meeting and before the construction of the Fire Apparatus begins.

The Contractor will be required to provide three (3) sets of detailed shop drawings. Shop drawings shall be formatted so that there is sufficient space for Contractor's circulation stamps to appear on the face of the submittal.

One print will be returned with appropriate notation if a re-submittal is required.

The Contractor shall provide a five (5)-view drawing showing overall dimensions and configuration of Fire Apparatus and arrangement of compartments and equipment storage. The five views shall be as follows:

- top view [entire truck]
- front end view
- rear end view;
- Left side view; and,
- right side view.

The drawings shall clearly indicate to scale, all exterior portions of the proposed Fire Apparatus, controls, lights, railings, gauges, etc. This drawing must be approved by the City prior to construction of the Fire Apparatus.

Each Contractor shall make accurate statements in their specifications as to weight, wheelbase, and other principal dimensions such as overall length, height, width, compartment sizes, door openings, etc.

The body manufacturer shall submit all applicable drawings, and calculations to the City with the Quotation package. Drawings supplied with this document are for evaluation purposes, and are not intended to assist with the production of design and manufacturing drawings for the project. No Quotation shall be considered unless complete engineering drawings to the Quotation Specifications are submitted with the Quotation package. Failure to submit factory prepared drawings may result in rejection of the Quotation. The engineering drawings will allow the City the ability to fully evaluate each Quotation, design, engineering and drawing quality in comparison to the specifications.

#### **WAIVER**

24. Any failure of the City at any time or from time to time to enforce or require the strict keeping or performance of any of the terms and conditions contained in this Agreement shall not constitute a waiver of the terms and conditions and shall not affect or impair the terms or conditions in any way or the City's right at any time to avail itself of any remedies as the City may have for any breach or breaches of the terms and conditions.

#### **APPLICABLE LAW**

25. This Agreement shall be governed by and construed in accordance with the laws of the Province of British Columbia. The City and the Contractor accept the jurisdiction of the courts of British Columbia and agree that any action under this Agreement shall be brought in such courts.

#### **NOTICES**

26. Any notice, report or other document that either party may be required or may wish to give to the other must be in writing, unless otherwise expressly provided for, and will be deemed to be validly given to and received by the addressee:
- (a) by hand, on delivery;
  - (b) by facsimile, on transmission; or
  - (c) by mail, five calendar days after posting.

The address for delivery will be as shown in Schedule A to the RFQ. In addition, the City may give notice to the Contractor by email at the Contractor's email address as shown in Schedule B to the RFQ, which email will be deemed to be validly given and received by the Contractor on transmission. The Contractor may not give notice to the City by email.

#### **MERGER AND SURVIVAL**

27. The representations, agreements, covenants and obligations set out in this Agreement, including without limitation Section 19, shall survive the delivery of the Goods and payment of the Purchase Price.

## **ENTIRE AGREEMENT**

28. This Agreement, including any other documents expressly included by reference in this Agreement, contains the entire agreement of the parties regarding the provision of the Goods, and no understandings or agreements, oral or otherwise, exist between the parties except as expressly set out in this Agreement. This Agreement supersedes and cancels all previous agreements between the parties relating to the Goods.

## **SPECIAL CONDITIONS**

### **INSPECTION/DELIVERY**

39. Each Contractor must state in their submission the guaranteed delivery date in number of calendar days from the date after receipt of order (ARO).
30. The item(s) specified, with packing slips/delivery slips and/or other required documents are to be delivered F.O.B. Destination, full freight prepaid to:

City of Surrey  
Fire Hall 9  
Service Centre,  
14901 – 64th Avenue  
Surrey, BC V3S 1X8

Attention: Gordon Wilson, Chief Mechanic

31. The Contractor is to notify the Gordon Wilson, Chief Mechanic, not less than three (3) working days prior to expected delivery / arrival to permit inspection scheduling. An authorized representative of the Seller is to supervise delivery and off-loading to the City. The City will not assume any liability for vehicle/equipment delivered to an unauthorized location.
32. Documentation at time of Delivery:-  
Seller is to provide the following documentation upon delivery:
- Copy of Purchase Order and Original Invoice(s).
  - Warranty Policy(ies) and/or certifications as may be required in the Specifications.
  - Parts, service, operators and maintenance manual(s) as may be required in the Technical Specifications.
33. Each unit is to be delivered clean and shall be complete with all equipment operable. The unit(s) will be inspected by the City before delivery to determine compliance with the specifications and/or to test its ability to perform its intended use.
34. The Contractor will be responsible for securing any and all inspections required by law, including B.C. Provincial Inspection stickers. Any fee charged for these inspections will be the responsibility of the Contractor.

## **UNSUITABLE EQUIPMENT**

35. Quotations will not be considered for vehicles that have previously failed to perform satisfactorily or from Contractors who have a history of performance problems with the City.

## **MANUFACTURER'S WARRANTY**

36. The Contractor will be required to furnish a warranty by the manufacturer that the equipment Quotation on is suitable for the service intended, in accordance with the specifications defined herein. The Contractor shall agree to replace and install without charge [including all labour], within the scope of the warranty, any defective part or any parts that are determined by the City not to be suitable for the service intended.
37. The warranty period will go into effect at the time the vehicle is placed into service by the City. Contractors are to include a complete warranty statement with their Quotation.

## **DEALERSHIP EMBLEMS/LOGOS**

38. The Contractor will not install on the vehicle, any logos, nameplates or stickers denoting the name of the company or dealership that may be considered as advertising. Failure to comply with this requirement will result in the dealership being given the option to remove same, or reimburse the City for removal and restoration, if needed.

## **NEW VEHICLE**

39. Equipment/vehicles are to be new and unused and not previously titled.

## **FACTORY INSTALLATION**

40. Items that are available from the factory must be factory installed. If factory installation of an item is not available to the dealer and the dealer is making a dealer modification in order to meet the specification, it must be clearly noted in your response.

## **REJECTIONS**

41. All materials or equipment shall be subject to inspection or test and shall meet the approval of the Chief Mechanic and his decision shall be final and binding upon all parties. Such inspection, at the option of the City, may be carried out at the place of business of the Contractor and the Contractor shall assist the Chief Mechanic, or his designate in the performance of his duties.
42. Should materials or equipment be defective in quality of workmanship or otherwise fail to conform to the specifications set forth, the Chief Mechanic shall have the right to reject them or require their immediate correction.
43. Materials or equipment requiring correction shall be removed for correction or corrected in place as requested by the Chief Mechanic at no expense to the City. Unavoidable expense encountered by the City shall be chargeable to the Contractor and deductible from any monies owing the Contractor by the City.
44. If the Contractor fails to take proper action promptly when requested by the Chief Mechanic, the City may replace or correct materials as necessary and charge the cost of such replacement to the Contractor or the City may terminate the Agreement as provided for herein.

## **PRE-CONSTRUCTION CONFERENCE**

45. A qualified engineer of the body manufacturer is to meet with the City to discuss all facets of these specifications to ensure a complete and satisfactory understanding of the City's specifications and Contractor's Quotation. A pre-construction meeting will be held at the Contractor's facility. The Contractor will provide, arrange and pay for all direct and associated travel costs for this meeting. For scheduling purposes, notification of the pre-construction conference shall be a minimum of fourteen (14) days before the date. ***N.B. Arrangements and***

***dates for the pre-construction conference must be made within three (3) weeks following date of award.***

**PRICES AND DELIVERY**

46. All pricing shown on the Quotation is to be net, with GST and PST shown separately. All other taxes, duties, insurance in freight, customs clearance, etc. to be included in the net price.

Goods to be delivered Free on Board (F.O.B.) freight prepaid to:

City of Surrey  
Fire Hall 9, Service Centre,  
14901 – 64<sup>th</sup> Avenue,  
Surrey, BC  
V3S 1X8

Attention: Gordon Wilson, Chief Mechanic

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## **SCHEDULE A – SPECIFICATION OF GOODS**

**PROJECT TITLE:** SUPPLY AND DELIVERY OF  
2000 IMP GAL ONE (OR MORE) TANKER TRUCK

**PROJECT No.:** 1220-040-2014-037

### **1. DESCRIPTION OF THE GOODS**

The purpose of these specifications is to describe a 2000 IMP GAL Tanker Truck unit that comes with 5600 LPM Fire Pump and Water Purification System. This vehicle must comply with all D.O.T. and British Columbia Motor Vehicle Act regulations.

The City's requirements are as outlined in Schedule A-1 – Technical Specifications.

### **2. DELIVERY**

The trucks shall be delivered F.O.B. Destination, Freight Prepaid to the City of Surrey in first class operating condition. If the Contractor must store, park, or hold the vehicles until such a time that the City, at its sole discretion, requires them, the Contractor will store the vehicles at no additional cost to the City.

Title of goods received under a purchase order agreement shall remain with the Contractor until they are delivered to:

City of Surrey  
Fire Hall 9, Service Centre,  
14901 – 64<sup>th</sup> Avenue,  
Surrey, BC  
V3S 1X8

Attention: Gordon Wilson, Chief Mechanic

Once delivery, inspected and accepted, the title will only then pass to the City of Surrey. The Contractor will bear all risks of loss, theft, injury, or destruction or damage of goods and materials ordered herein which occur prior to delivery and acceptance. Such loss, injury, or destruction or damage shall not release the Contractor from any obligations under.

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**SCHEDULE A-1 –TECHNICAL SPECIFICATIONS**

**TECHNICAL SPECIFICATIONS**

The specification herein states the minimum requirements of the City of Surrey. All Quotations must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be cause for rejection. This vehicle must comply with all D.O.T. and British Columbia Motor Vehicle Act regulations.

**1** **STATE WARRANTIES**

Cab Basic: \_\_\_\_\_  
 Cab Paint: \_\_\_\_\_  
 Frame Rails: \_\_\_\_\_  
 Body Basic: \_\_\_\_\_  
 Body & Structural Integrity: \_\_\_\_\_  
 Body Paint Warranty: \_\_\_\_\_  
 Body Corrosion Warranty: \_\_\_\_\_

Please refer to:  
**Schedule B – Appendix A**  
**Technical Specifications**  
**Worksheet**

**2** **OVERALL HEIGHT**

STATE: \_\_\_\_\_

**3** **OVERALL LENGTH**

STATE: \_\_\_\_\_

**4** **CHASSIS WHEELBASE**

STATE: \_\_\_\_\_

**5** **TURNING RADIUS**

STATE: \_\_\_\_\_

**6** **CAB AND CHASSIS**

CONVENTIONAL CHASSIS  
 2015 MODEL YEAR SPECIFIED  
 SET BACK AXLE – TRUCK  
 160 INCH BBC HIGH-ROOF ALUMINUM CONVENTIONAL CREW CAB  
 AIR CAB MOUNTS  
 BOLT-ON MOLDED FLEXIBLE FENDER EXTENSIONS  
 FENDER AND FRONT OF HOOD MOUNTED FRONT MUDFLAPS  
 NFPA COMPLIANT EXTERIOR GRAB HANDLES  
 HOOD MOUNTED CHROMED PLASTIC GRILLE  
 CHROME HOOD MOUNTED AIR INTAKE GRILLE  
 TUNNEL/FIREWALL LINER  
 DUAL 25 INCH ROUND STUTTER TONE HOOD MOUNTED AIR HORNS  
 DUAL ELECTRIC HORNS  
 DOOR LOCKS AND IGNITION SWITCH KEYED THE SAME  
 RH/LH MANUAL WINDOWS & DOOR LOCKS  
 INTEGRAL HEADLIGHT/MARKER ASSEMBLY WITH CHROME BEZEL  
 LED AERODYNAMIC MARKER LIGHTS  
 DAYTIME RUNNING LIGHTS  
 DUAL 102” WEST COAST BRIGHT FINISH HEATED MIRRORS WITH LH AND RH  
 REMOTE  
 LH AND RH 8 INCH BRIGHT FINISH CONVEX MIRRORS MOUNTED UNDER  
 PRIMARY MIRRORS  
 63X14 INCH TINTED REAR WINDOW

	TINTED DOOR GLASS LH AND RH WITH TINTED NON-OPERATING WING WINDOWS
	TINTED WINDSHIELD
	2 GALLON WINDSHIELD WASHER RESERVOIR WITHOUT FLUID LEVEL INDICATOR, FRAME MOUNTED
7	<b><u>FRAME</u></b> 11/32X3-1/2X10-15/16 INCH STEEL FRAME 120KSI ¼" C-CHANNEL INNER FRAME REINFORCEMENT GRADE 8 THREADED HEX HEADED FRAME FASTENERS
8	<b><u>PAINT FRAME AND CHASSIS UNDER CARRIAGE</u></b> The chassis under carriage consisting of frame, axles, driveline running gear, battery boxes, air tanks and other assorted chassis mounted components shall be painted with standard black paint. Paint shall be applied before airlines and electrical wiring is installed.
9	<b><u>FUEL TANK</u></b> MINIMUM, 50 GALLON RECTANGULAR ALUMINUM FUEL TANK ALLIANCE FUEL FILTER/WATER SEPARATOR WITH HEATED BOWL EQUIFLO INBOARD FUEL SYSTEM FUEL COOLER 6 GALLON DIESEL EXHAUST FLUID TANK
10	<b><u>FRONT BUMPER</u></b> THREE-PIECE 14 INCH CHROMED STEEL BUMPER WITH COLLAPSIBLE ENDS
11	<b><u>TOW EYES</u></b> REMOVABLE FRONT TOW HOOKS STORED ON THE CHASSIS FRAME
12	<b><u>AIR HORN ACTUATION</u></b> Air horns actuation shall be accomplished by the steering wheel horn button and a right side Officer's push button switch located on the dash.
13	<b><u>SIREN 10" ELECTRIC</u></b> There shall be a Federal model Q2B motor driven rotary siren with chrome plated grill and housing, recess in the extended front bumper. The siren shall be wired through the master warning light switch, and properly wired with heavy copper cable for minimum voltage drop. The siren shall be located on the curbside of the front bumper. There shall be a siren brake installed in the rocker switch control panel to activate the siren brake.
14	<b><u>ELECTRONIC SIREN SPEAKER</u></b> A Federal Signal MS-100 siren speaker with polished "Electric F" grill mount will be installed on the outer left hand side of the front bumper extension.
15	<b><u>GROSS AXLE WEIGHT RATINGS FRONT</u></b> The front gross axle weight rating (GAWR) of the chassis shall be 18,000 pounds. This front gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.
16	<b><u>FRONT AXLE</u></b> 18,000# FL1 71.0 KPI/3.74 DROP SINGLE FRONT AXLE
17	<b><u>FRONT SUSPENSION</u></b> 18,000# TAPERLEAF FRONT SUSPENSION GRAPHITE BRONZE BUSHINGS WITH SEALS - FRONT SUSPENSION FRONT SHOCK ABSORBERS
18	<b><u>POWER STEERING GEAR</u></b> TRW TAS-85 POWER STEERING
19	<b><u>CHASSIS ALIGNMENT</u></b> The chassis frame rails shall be cross-checked for length and squareness. Front and rear axles shall be laser aligned. Tires and wheels shall be aligned and toe-in set on the front tires at the chassis manufacturer's facility.

		The completed apparatus should be rechecked for proper alignment after the chassis has been fully loaded.
20	<b><u>FRONT TIRES</u></b>	The front tires shall be Goodyear 12R22.5 16 tubeless radial G287 MSA.
21	<b><u>FRONT WHEELS</u></b> <b><u>STEEL</u></b>	22.5X9.00 10-HUB PILOT 5.25 INSET 5-HAND STEEL DISC FRONT WHEELS PAINTED WHITE
22	<b><u>FRONT HUBS &amp; WHEEL BEARINGS OIL LUBRICATED</u></b>	CONMET PRE-SET BEARING IRON FRONT HUBS SKF SCOTSEAL PLUS XL FRONT OIL SEALS VENTED FRONT HUB CAPS WITH WINDOW, CENTER AND SIDE PLUGS - OIL
23	<b><u>FRONT BRAKES</u></b>	BENDIX ADB22X-V AIR DISC FRONT BRAKES FIRE AND EMERGENCY SEVERE SERVICE, NON-ASBESTOS FRONT LINING FRONT DISC BRAKE ROTORS FRONT BRAKE DUST SHIELDS FRONT AIR DISC BRAKE INTERNAL ADJUSTERS
24	<b><u>GROSS AXLE WEIGHT RATINGS</u></b> <b><u>REAR</u></b>	The rear gross axle weight rating (GAWR) of the chassis shall be 44,000 pounds. This rear gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.
25	<b><u>REAR AXLE</u></b>	MT-44-14X 44,000 lbs. R-SERIES TANDEM REAR AXLE IRON REAR AXLE CARRIER WITH OPTIONAL HEAVY DUTY AXLE HOUSING MXL 17T MERITOR EXTENDED LUBE MAIN DRIVELINE WITH HALF ROUND YOKES MXL 17T MERITOR EXTENDED LUBE INTERAXLE DRIVELINE WITH HALF ROUND YOKES DRIVER CONTROLLED TRACTION DIFFERENTIAL - BOTH TANDEM REAR AXLES SKF SCOTSEAL PLUS XL REAR OIL SEALS CONMET PRE-SET BEARING IRON REAR HUBS
26	<b><u>TANDEM INTER-AXLE DIFFERENTIAL LOCK</u></b>	The tandem axle chassis shall include an inter-axle differential lock, which will allow both axles to be engaged as drive axles. A flipper valve actuator and red indicator lamp shall be located below the instrument panel.
27	<b><u>REAR SUSPENSION</u></b>	HENDRICKSON HAULMAAX HMX 460 REAR SUSPENSION @ 46,000 lbs. 54 INCH AXLE SPACING  FORE/AFT CONTROL RODS
28	<b><u>TOP SPEED</u></b>	The top speed of the vehicle shall be approximately 65 MPH +/-2 MPH at governed engine RPM.
29	<b><u>REAR BRAKES</u></b>	BENDIX ADB22X-V AIR DISC REAR BRAKES FIRE AND EMERGENCY SEVERE SERVICE NON-ASBESTOS REAR BRAKE LINING STANDARD BRAKE CHAMBER LOCATION REAR DISC BRAKE ROTORS REAR BRAKE DUST SHIELDS AIR DISC LONGSTROKE 2-DRIVE AXLES SPRING PARKING CHAMBERS REAR AIR DISC BRAKE INTERNAL ADJUSTERS
30	<b><u>REAR TIRES</u></b>	The rear tires shall be Goodyear 12R-22.5 tubeless radial G182 RSD.
31	<b><u>REAR WHEELS</u></b>	22.5X8.25 10-HUB PILOT 2-HAND STEEL DISC REAR WHEELS PAINTED WHITE

- 32 PAINTED WHEELS** | The wheels on the chassis shall be pretreated in a zinc phosphate bath, and then coated with an acrylic cathode electro deposited white primer base coat (E-Coat) by the wheel supplier.
- NOTE: Wheels are to be painted WHITE to match the upper paint of the cab. The Hubs to remain Black.
- 33 VISUAL TIRE PRESSURE INDICATOR** | Each tire shall be equipped with a visual indicator to monitor tire pressure. The tire pressure indicator will display the following:
- Green – tire is properly inflated,
  - Half green/half red – tire is approximately 10% under inflated,
  - Red – tire is 20% or more under inflated.
- 34 HUBODOMETER** | A hubodometer shall be installed on the left rear axle shaft. Require one (1) STEMCO DataTrac Pro
- 35 ABS & ATC SYSTEM** | AIR BRAKE PACKAGE  
WABCO 4S/4M ABS WITH TRACTION CONTROL  
NFPA COMPLIANT ENHANCED STABILITY CONTROLS  
STANDARD AIR SYSTEM PRESSURE PROTECTION  
CUSTOM STEEL AIR BRAKE RESERVOIRS
- 36 AIR DRYER** | A Meritor Wabco system saver 1200 spin-on desiccant air dryer with a 12-volt, 100-watt automatic heated moisture ejector shall be installed in the air brake system.
- 37 ADDITIONAL AIR RESERVOIR** | An additional 1200 cubic inch air reservoir shall be installed and isolated to prevent depletion of the air to the air brake system and to act as a supply tank for operating air equipment. It shall be plumbed with a 90 psi pressure protection valve on the reservoir supply side.
- 38 REMOTE MANUAL AIR DRAINS** | Remote manual drains shall be installed on all reservoirs of the air brake system. All drains are to be remote located to below L1 and name tagged, c/w quarter turn pet cocks.
- 39 OUTSIDE AIR INTAKE CONNECTION** | A quick release outside air intake male connector shall be provided in the left cab step area for shoreline air intake to maintain air system build up. The air connector supplied shall be compatible with a Lincoln style fitting.
- The inlet is to be located in the Driver's mid height step adjacent to the shorepower inlet.
- 40 ENGINE** | CUMMINS ISL 450 HP @ 2100 RPM; 2200 GOV RPM, 1250 LB/FT @ 1400 RPM, FIRE/EMERGENCY

**41** **ENGINE EQUIPMENT**

2013 ONBOARD DIAGNOSTICS/2010 EPA/CARB/GHG14  
NFPA COMPLIANT EMBER SCREEN AND FIRE RETARDANT DONALDSON AIR CLEANER  
DR 12V 275 AMP 40-SI BRUSHLESS PAD ALTERNATOR WITH REMOTE BATTERY VOLTAGE SENSE  
(3) ALLIANCE MODEL 1031, GROUP 31, 12 VOLT MAINTENANCE FREE 2280 CCA THREADED STUD BATTERIES WITH POSITIVE JUMP START POST BATTERY BOX FRAME MOUNTED  
WIRE GROUND RETURN FOR BATTERY CABLES WITH ADDITIONAL FRAME GROUND RETURN  
POSITIVE LOAD DISCONNECT WITH CAB MOUNTED CONTROL SWITCH MOUNTED OUTBOARD DRIVER SEAT  
CUMMINS TURBOCHARGED 18.7 CFM AIR COMPRESSOR WITH INTERNAL SAFETY VALVE  
C-BRAKE BY JACOBS WITH LOW/OFF/HIGH BRAKING DASH SWITCH  
RH MTD HORIZONTAL AFTERTREATMENT WITH RH TAILPIPE EXITING FORWARD OF REAR TIRES

HORTON DRIVEMASTER ON/OFF FAN DRIVE  
AUTOMATIC FAN CONTROL WITHOUT DASH SWITCH  
CUMMINS SPIN ON FUEL FILTER  
COMBINATION FULL FLOW/BYPASS OIL FILTER  
1300 SQUARE INCH ALUMINUM RADIATOR WITH SENDURE HEAT EXCHANGER ANTIFREEZE TO -34F, ETHYLENE GLYCOL PRE-CHARGED SCA HEAVY DUTY COOLANT  
GATES BLUE STRIPE COOLANT HOSES OR EQUIVALENT  
CONSTANT TENSION HOSE CLAMPS FOR COOLANT HOSES  
ELECTRIC GRID AIR INTAKE WARMER  
DELCO 12V 38MT HD STARTER WITH INTEGRATED MAGNETIC SWITCH

**42** **OVERFLOW TANK**

Cooling system requires an overflow tank to catch any expelled coolant.

**43** **COOLANT FILTER**

An engine coolant filter with a shut-off valve shall be installed on the engine. The location of the filter shall allow for easy maintenance.

**44** **TRANSMISSION**

ALLISON 3000 EVS AUTOMATIC TRANSMISSION  
PRIMARY MODE GEARS, LOWEST GEAR 1, START GEAR 1, HIGHEST GEAR 6  
PUSH BUTTON ELECTRONIC SHIFT CONTROL, DASH MOUNTED  
TRANSMISSION PROGNOSTICS - ENABLED 2013  
WATER TO OIL TRANSMISSION COOLER, IN RADIATOR END TANK  
TRANSMISSION OIL CHECK AND FILL WITH ELECTRONIC OIL LEVEL CHECK  
SYNTHETIC TRANSMISSION FLUID (TES-295 COMPLIANT)  
Fourth gear hold-in range may be accomplished by wiring for a pumping application.

**45** **TRANSMISSION MODE**

The transmission, upon start-up, will select four- (4) speed operation. By pressing the "mode" switch on the shift pad (mode on) provides five- (5) speed overdrive.

- 46 **TRANSMISSION  
PRE-SELECT  
WITH AUXILIARY  
BRAKE** | When the auxiliary brake is engaged, the transmission shall automatically shift to third gear to decrease the rate of speed assisting the secondary braking system and slowing the vehicle.
- 47 **DRIVELINES** | All drivelines shall be Spicer 1710 heavy duty series with "glide coat" splines on all slip shafts.
- 48 **STOP, TAIL, TURN  
AND BACK-UP  
LIGHT WIRING** | Individual wires shall be run to the rear of the chassis for the stoplight, turn signal, taillight and back-up lights.
- 49 **CAB INTERIOR** | OPAL GRAY VINYL INTERIOR  
MOLDED PLASTIC DOOR PANELS WITH ALUMINUM KICKPLATES LOWER DOORS  
BLACK MATS WITH PREMIUM INSULATION  
FORWARD ROOF MOUNTED CONSOLE WITH UPPER STORAGE COMPARTMENTS WITHOUT NETTING  
IN DASH STORAGE BIN  
(2) CUP HOLDERS LH AND RH DASH  
HEATER, DEFROSTER AND AIR CONDITIONER  
MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH  
SOLID-STATE CIRCUIT PROTECTION AND FUSES  
12V NEGATIVE GROUND ELECTRICAL SYSTEM  
DOOR ACTIVATED DOME/RED MAP LIGHTS, FORWARD LH AND RH AND REAR LH, RH AND CENTER  
CAB DOOR LATCHES WITH MANUAL DOOR LOCKS  
(1) 12 VOLT POWER SUPPLY IN DASH  
SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION DRIVER SEAT NFPA COMPLIANT  
SEATS INC 911 UNIVERSAL SERIES HIGH BACK AIR SUSPENSION PASSENGER SEAT NFPA COMPLIANT  
REAR BENCH SEAT NON SCBA, NON SUSPENSION WITH UNDER SEAT STORAGE. NFPA COMPLIANT  
LH AND RH INTEGRAL DOOR PANEL ARMRESTS  
GRAY AND BLACK DURAWEAR FABRIC SEAT COVERS, SEAT BOLSTERS AND INSERTS  
3 POINT HIGH VISIBILITY ORANGE RETRACTOR DRIVER, RH FRONT AND LH, CENTER AND RH REAR PASSENGER SEAT BELTS NFPA COMPLIANT  
ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN  
4-SPOKE 18 INCH STEERING WHEEL  
DRIVER AND PASSENGER INTERIOR SUN VISORS
- 50 **INTERIOR GRAB  
HANDLE "A"  
PILLAR** | There shall be a grab handle installed inside the cab on the "A" post at the right door opening. The handle shall assist personnel in entering and exiting the cab.

**51**    **CENTRE CAB  
CONSOLE  
STORAGE  
COMPARTMENT**

A center cab console shall be provided between the Driver's and Officer's seats. Console shall be as large as possible and fabricated of 1/8" smooth aluminum. A textured powder coat paint finish shall be provided for durability and finished appearance.

The rear portion of the console shall be provided with open top storage for notebooks or maps. Two (2) adjustable dividers shall be provided in the storage area. The forward portion of console shall be slanted for easy viewing of the V-Mux display screen, and any siren or radio equipment. The area shall be within easy access to both Driver and Officer.

The final design of console shall be determined by the Surrey Fire Department at the pre-construction meeting.

**52**    **VEHICLE DATA  
RECORDER (VDR)**

The vehicle data recorder shall have the following features;

- Recorded Data Includes: Vehicle Speed, Acceleration, Deceleration, Engine Speed, Engine Throttle Position, ABS Event, Seat Occupied Status, Seat Belt Status, Master Optical Warning Switch, Park Brake, Service Brake, Time, Date and Engine Hours.
- Password Protected by the customer
- Six (6) seat position inputs for occupied and belts buckled. Additional six (6) seat expansion module available.
- Easily interfaces with V-MUX™ or other multiplexing systems
- Data is extracted by a standard, mini USB cable

**53**    **OCCUPANT  
RESTRAINT  
INDICATOR**

The occupant restraint indicator shall have the following features;

- Will be displayed on Vista IV panel.
- Supports commercial and custom cab seating layouts; up to 12 seats
- Built-in audible alarm
- Use in conjunction with Vehicle Data Recorder (VDR)

**54** **INSTRUMENTS  
AND CONTROLS**

WOODGRAIN INSTRUMENT PANELS  
BLACK GAUGE BEZELS  
LOW AIR PRESSURE LIGHT AND BUZZER  
2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES  
ENGINE COMPARTMENT MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS, WITH WARNING LIGHT IN DASH  
ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL  
IGNITION SWITCH WITH NON REMOVABLE KEY  
ODOMETER/TRIP/HOUR/DIAGNOSTIC/VOLTAGE DISPLAY: 1X7 CHARACTER, 26  
WARNING LAMPS, DATA LINKED, ICU3  
FIRE AND EMERGENCY SERVICE VEHICLES ENGINE WARNING  
2 INCH ELECTRIC FUEL GAUGE  
ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE  
2 INCH TRANSMISSION OIL TEMPERATURE GAUGE  
ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY  
STEMCO MECHANICAL HUBODOMETER WITH TENTHS LEFT SIDE SINGLE OR FORWARD REAR DRIVE AXLE  
ELECTRIC ENGINE OIL PRESSURE GAUGE  
OVERHEAD INSTRUMENT PANEL  
ELECTRONIC KPH SPEEDOMETER WITH SECONDARY MPH SCALE  
ELECTRONIC 3000 RPM TACHOMETER  
(1) RH FOOT SWITCH WITH DASH SWITCH FOR HORN BUTTON TO CONTROL AIR HORN, DEFAULT TO ELECTRIC <85 PSI  
DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY  
SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY PROGRAMMED TO SLOWEST SPEED WITH PARK BRAKE SET  
MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH  
ONE VALVE PARK BRAKE SYSTEM WITH DASH VALVE CONTROL  
SELF CANCELING TURN SIGNAL SWITCH WITH DIMMER, WASHER/WIPER AND HAZARD IN HANDLE  
INTEGRAL ELECTRONIC TURN SIGNAL FLASHER WITH HAZARD LAMPS  
OVERRIDING STOP LAMPS

**55** **IGNITION KEY**

If the vehicle is specified to have an ignition key it will be attached to steering column or dash with vinyl covered steel cable.

**56** **ATO/ATC TYPE  
FUSE BLOCKS**

Two (2) Blue Sea, 6 circuit ATO/ATC fuse blocks c/w cover and negative bus, shall be provided and installed in the centre console. Operating amperage per block shall be 100 amps.

**57** **KUSSMAUL 20  
AMP INLET**

One block to be switched power, the other to be battery direct  
A Kussmaul 20 amp electrical receptacle with a gray weatherproof cover and box.

This shore power inlet is to be located in the driver's step area.



58 <b><u>BATTERY CONDITIONER 1200 KUSSMAUL</u></b>	A Kussmaul 1200 battery conditioner shall be supplied.  The battery conditioner shall be mounted in the cab behind the driver's seat.
59 <b><u>BATTERY JUMPER STUDS</u></b>	The remote charge indicator display will be viewable near the shore power inlet or Surrey approved location Battery jumper studs shall be provided in the driver's step area. The studs allow the vehicle to be jump-started or cab to be raised in an emergency due to battery failure.
60 <b><u>BACKUP ALARM</u></b>	A backup alarm shall be installed at the rear of the chassis with an auto-adjusting output level of not less than 87 dB and up to 107 dB. The alarm will automatically activate when the transmission is placed in reverse.
61 <b><u>LED GROUND LIGHTING BELOW EACH DOOR</u></b>	The cab shall be equipped with Truck-lite 44 Series #44308C LED lighting under each cab door. The lights will be activated by either a single switch on the Vista display or each respective door switch.
62 <b><u>FLASHING DOOR AJAR LIGHT</u></b>	A red flashing door ajar light shall be located in the headliner, centered in the cab. The light shall be approximately 6.00" long x 2.50" wide x 1.75" high and labeled "Do Not Move Apparatus". The light shall be wired to indicate an open door on the cab when the parking brake is released.
63 <b><u>MAP LIGHT</u></b>	Havis Shield C-MAP-TL 18" Top-Mounted map light
64 <b><u>HAND HELD SPOTLIGHT</u></b>	A Collins CD-CL-HID-1 hand-held spotlight c/w mounting bracket shall be sent loose.
65 <b><u>EXTERIOR CAB ASSIST HANDLES</u></b>	Four (4) anti-slip one-piece exterior assist handles shall be installed, one (1) behind each cab door. The assist handle shall be made of 14 gauge 304 stainless steel and be 1.25" diameter to enable easy grabbing with the gloved hand.
66 <b><u>SIGTRONIC US- 67S INTERCOM</u></b>	There will be a Sigtronics US-45S intercom system supplied and installed on the apparatus. The system will have the following capabilities:  Drivers Position Intercom / PTT Officers Position Intercom / PTT 2 Rear Work Area Positions Intercom  The following accessories shall be provided: One (1) radio adapter interfaces, four (4) SE-8 headsets. Radio Interface to be for a M/A COM model #D28LTX

<p><b>67</b>    <b><u>INTERCOM SYSTEM INSTALLATION</u></b></p>	<p>The above listed intercom system shall be installed in the cab locations as follows;</p> <p>Front of Cab</p> <ul style="list-style-type: none"> <li>• Driver's – Mounted above the right shoulder position on ceiling.</li> <li>• Officer's – Mounted above the left shoulder position on ceiling.</li> </ul> <p>Rear Crew Area</p> <ul style="list-style-type: none"> <li>• Driver's side forward facing – Above the right shoulder on the rear wall or ceiling.</li> <li>• Officer's side forward facing – Above the left shoulder on the rear wall or ceiling.</li> </ul>
<p><b>68</b>    <b><u>CUSTOMER SUPPLIED ANTENNAS</u></b></p>	<p>There will be two (2) customer supplied antennas shipped to the manufacturer for installation. One (1) GPS antenna mounted on the cab roof right side. One (1) radio antenna mounted on the cab roof left side.</p>
<p><b>69</b>    <b><u>CUSTOMER SUPPLIED 2-WAY RADIO</u></b></p>	<p>Customer supplied 2-way radio will be flush mounted in the center console on the officer's side of center above the electronic siren. Exact location to be determined at pre-construction meeting.</p>
<p><b>70</b>    <b><u>CAB INTERIOR SPEAKER WIRING</u></b></p>	<p>There shall be speaker wiring 16/2 from the centre top rear of the cab with a one foot pig tail, routed to the dash electrical centre cover with a three foot pig tail</p>
<p><b>71</b>    <b><u>TWO TONE PAINT</u></b></p>	<p>The cab shall be painted two tone with a finished break line 1.5" below the cab side windows. Exact location of break to be determined at pre-construction meeting.</p> <p>A .5" (1/2") gold reflective tape with black borders shall be applied on the break line between the two different colored surfaces.</p> <p>Preferred brand of paint, upper color and lower color:  PPG FBCH System  Upper: 2185 WHITE  Lower: 75390 ALT RED</p>
<p><b>72</b>    <b><u>OPERATORS MANUAL AND PARTS LIST</u></b></p>	<p>A chassis operator's manual and parts list with wiring and air plumbing diagrams shall be provided. The wiring and plumbing diagrams shall be of the chassis model.</p>
<p><b>73</b>    <b><u>ENGINE AND TRANSMISSION OPERATION MANUAL</u></b></p>	<p>One (1) engine operation and maintenance manual and one (1) transmission operation manual shall be included in the Spartan operator's manual.</p>
<p><b>74</b>    <b><u>AS BUILT DIAGRAMS</u></b></p>	<p>"As built" wiring diagrams shall be supplied for the chassis model provided.</p>

**75**    **MIDSHIP MOUNT  
FIRE PUMP**

The fire pump shall be a Darley model PSM 1500 GPM (5678 LPM) single stage split-drive shaft driven fire pump.

The pump shall be midship mounted and designed to operate through an integral transmission, including a means for power selectivity to the driving axle or to the pump. The pump shall be driven by a driveline from the chassis transmission. The engine, transmission and driveline components shall provide sufficient horsepower and RPM to enable the pump to meet and exceed its rated performance.

The pump shall contain a cored heating jacket feature that, if selected, can be connected into the vehicle antifreeze system to protect the pump from freezing in cold climates, and to help reject engine heat from engine coolant, providing longer life for the engine.

**76**    **PUMP SHAFT**

The pump shaft shall be precision ground stainless steel. The shaft shall be splined to receive broached impeller hubs, for greater resistance to wear, torsional vibration, and torque imposed by engine, as well as ease of maintenance and repair.

The bearings provided shall be heavy-duty, deep groove, radial-type ball bearings. Sleeve bearings on any portion of the pump or transmission shall be prohibited due to wear, deflection, and alignment concerns. The bearings shall be protected at all openings from road dirt and water splash with oil seals and water slingers.

**77**    **MECHANICAL  
SEAL**

The pump shall be furnished with a Darley maintenance-free mechanical seal. The mechanical seal shall be a non-contacting, non-wearing dual seal design. Seal shall be a Silicon Carbide Mechanical seals with welded springs. The stationary face of mechanical seals shall be made from Silicon Carbide, and be extremely hard and of a heat dissipative material, which resists wear and dry running damage much better than conventional Ni-resist and Tungsten Carbide materials

**78**    **IMPELLER**

The impeller shall be a high strength bronze alloy of mixed flow design, splined to the pump shaft for precision fit, durability, and ease of maintenance. Impeller shall be vacuum cast designed for maximum lift and highest capacity. The seal rings shall be renewable, double labyrinth, wrap around bronze type.

Impeller shaft oil seals shall be constructed to be free from steel components except for the internal lip spring. The impeller shaft oil seals shall carry a lifetime warranty against damage from corrosion from water and other fire-fighting fluids.

- 79**    **PUMP TRANSMISSION**    The transmission case shall be heavy duty cast iron. A magnetic drain plug shall be provided. Transmission case shall include a dip stick for checking oil level. Transmission case interior shall be powder coated to reduce oil contamination. Transmission case shall be equipped with a removable plate for quick inspection of gears, shafts, and bearings inside the transmission. The pump drive shaft shall be precision ground, heat treated alloy steel, with a minimum 2-1/2" x 10" spline. The net through-torque rating of the gearbox shall exceed 19,000 foot pounds. Gears shall be helical design, and shall be precision ground for quiet operation and extended life. The gears shall be manufactured from alloy steel and carburized for surface hardness and strength. The pump clutch gear shall be a heat treated alloy-steel splined spur gear to engage either the pump drive gear or the truck drive shaft gear, and shall have bullet-nosed teeth to reduce the possibility of a butt-tooth condition. The pump clutch gear shall be separate from the main drive gear in order to maintain the greatest precision for driving the pump gear train. The pump transmission shall require no further lubrication beyond that provided by the intrinsic action of the gears, to reduce the likelihood of failure due to loss of auxiliary lubrication.
- 80**    **HEAT EXCHANGER / HEATED PUMP CORE**    An automatic heat exchanger system shall be provided in the pump. Antifreeze from the vehicle engine shall flow through the pump core jacket. Water flow from the fire pump shall be used to cool the engine antifreeze. This feature shall assist against the pump freezing in cold climates and provide auxiliary cooling to the truck engine.
- 81**    **DRIVELINE INSTALLATION**    The chassis drivelines shall be sized for intended application and torque requirements. The installation shall comply with driveline manufacturer's guidelines.
- 82**    **SINGLE STAGE FIRE PUMP**    The pump shall be a single stage centrifugal class "A" rated fire pump, designed specifically for the fire service. The pump shall be rated at 5000 litres per minute.
- 83**    **FIRE PUMP MOUNTING**    The fire pump shall be mounted within a separate body module that is not directly connected to the apparatus body. The pump shall be frame mounted; therefore minimizing the likelihood of the pump casing cracking should the apparatus be involved in a collision. The pump module shall be mounted to the frame in four (4) locations and shall be reinforced appropriately in order to carry the expected load for the life of the apparatus.
- 84**    **PUMP COLOR**    The pump shall be painted Darley Red by the pump manufacturer.
- 85**    **ALLOY ANODES**    There shall be four (4) OEM supplied alloy anodes provided with the fire pump. The anodes shall aid in preventing galvanic corrosion within the water pump and be easily replaceable. The anodes shall be installed as follows:
- Two (2) in the suction manifold of the fire pump.
  - Two (2) in the discharge manifold of the fire pump.

- 86**    **PUMP SHIFT**    One (1) air powered pump shift shall be installed in the cab below the left side dash area. The shift shall engage the fire pump. The apparatus pump shift shall be engaged only when apparatus is in a stationary position and the parking brake is engaged. The following indicator lights shall be included with pump shift: A green indicator light labeled "PUMP ENGAGED" shall indicate pump shift has successfully been completed.  
A green indicator light labeled "OK TO PUMP" shall indicate the chassis transmission is in pump gear and parking brake is engaged.
- 87**    **PRIMING PUMP -  
ELECTRIC  
PRIMER**    A single, push-pull control shall be located on the pump operator's panel with a "Pull to Prime - Push To Close" label. The priming pump shall be constructed of heat treated aluminum and hard coat anodized.  
The fire pump priming system shall consist of one (1) 12V positive displacement type rotary vane primer(s). The primer(s) shall be accepted per NFPA 1901 recommendations.
- 88**    **PRESSURE  
GOVERNOR**    A Darley "AUTO CONTROL" electronic pressure governor and engine monitoring system shall be installed on the pump operators control panel. The governor shall be configured to operate with the chassis engine.  
It shall regulate engine RPM to maintain a consistent pressure out of the water pump over a wide range of outgoing flows.  
The unit shall operate in both RPM and PSI modes.  
The 6-1/2" x 7-1/2" control unit shall include the following features:  
DISPLAY:  
  - A 4-digit LED readout for pump discharge pressure
  - A 4-digit LED readout for pump intake pressure.
  - A 20 segment LED bar graph for the pressure or RPM setting.
  - A 4-digit readout for engine RPMs.
  - Three (3), 10 segment bar graphs for battery voltage, engine oil pressure, and engine temperature. The bar graph display shall flash if low voltage, low oil pressure, or high engine temperature condition occurs.
  - "Throttle Ready" green LED.
FUNCTION SWITCHES: Idle Mode - Preset - Increase - Decrease - Silence.  
This system shall utilize information from the chassis engine ECU.  
An audible alarm buzzer shall be included.
- 89**    **PUMP HOUR  
METER**    There shall be a pump hour meter provided and installed inside the pump compartment. The hour meter shall be activated only when the water pump has been engaged.
- 90**    **INTAKE RELIEF  
VALVE**    There shall be a NFPA compliant intake relief valve installed on the suction side of the pump. The valve shall be the preset type, adjustable from 50 to 250 PSI, on the valve itself. The valve shall be factory preset at approximately 125 PSI. The relief outlet shall be directed below the pump with the discharge terminating in a 2-1/2" male NST connection. The discharge shall be away from the pump operator and labeled "Do Not Cap".

- 91 **MASTER DRAIN VALVE** | A Darley rotary style master drain shall be installed on the lower portion of the side control panel. It shall be of brass construction and use a rotary screw mechanism against a rubber sealing surface. Each port shall be isolated. An "open and closed" label with arrows indicating direction shall be installed.
- 92 **PUMP COOLER LINE** | There shall be a 1/2" pump cooler line installed from the discharge side of the pump to the water tank. The line shall be used to cool the pump during long periods of pumping when water is not being discharged. The pump cooler shall be controlled with a quarter-turn ball valve on operators panel, and shall be clearly labeled "Pump Cooler".
- 93 **PUMP COOLER CHECK VALVE** | There shall be a check valve installed in the pump cooler line to prevent tank water from back flowing into the pump when it is not in use.
- 94 **PUMP MANUALS** | There shall be two (2) manuals covering the fire pump transmission and selected options of the fire pump provided with the apparatus.
- 95 **CUSTOM PLUMBING MANIFOLD** | The plumbing manifold shall be a custom design that includes the inlet side manifold and the discharge side manifold. Galvanized Victaulic couplings shall be used wherever possible for ease of maintenance and superior corrosion protection.  
 The inlet side of the plumbing manifold shall utilize schedule 10, 304 grade stainless steel tubing and preformed elbows for inlets that are larger than 3". Side auxiliary inlets that are 3" or smaller shall utilize schedule 40, 304 grade stainless steel tubing and preformed elbows. The inlet manifold shall thread into the pump auxiliary inlet ports and each inlet valve shall thread onto the inlet manifold.  
 The discharge side of the plumbing manifold shall utilize schedule 10, 304 grade stainless steel tubing and preformed elbows. The discharge manifold shall connect to the pump discharge ports using 1/2" stainless steel flanges that shall be machined to seat an O-ring to ensure a leak proof seal. Each discharge shall derive from a port on the manifold assembly connected to a discharge valve with 1/2" 304 grade stainless steel flanges. Discharges that terminate in a location other than the pump module (i.e. rear discharges) shall utilize a combination of high pressure flex hose and schedule 10, 304 grade stainless steel tubing to allow flexibility between the body and the pump module.

**96**    **3" TANK-TO-PUMP**

There shall be a 3" tank-to-pump plumbed with flexible hose from the tank to the suction side of the pump.

An Akron Brass model 8830 3" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall also include a necessary B3-SH pump flange adapter, which shall be specifically used for the tank-to-pump line to properly adjust the plumbing based on the pitch of the pump. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass manual actuator installed on the valve.

The manual actuator shall be controlled by a push/pull T-handle. The handle shall be chrome plated with a recessed ID label.

There shall be a check valve between the pump suction and the booster tank valve. The check valve shall eliminate back flow into the water tank when the pump is connected to a pressurized source.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a black color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**97**    **2" TANK FILL**

An Akron Brass model 8820 2" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass manual actuator installed on the valve.

An Akron Brass model 8820 2" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass manual actuator installed on the valve.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a black color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**98**    **6" LEFT SIDE  
STEAMER INLET**

There shall be a 6" steamer inlet located on the left side of the pump module.

The suction fittings shall include a removable die-cast screen to provide cathodic protection for the pump thus reducing corrosion.

A short steamer barrel shall be installed to accommodate an intake valve without exceeding the legal overall body width.

The intake shall terminate MNST thread.

There shall be one (1) South Park model LHC26P14AC, 6" NST long handle steamer cap provided. The cap shall be manufactured from high quality brass that shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a chrome color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**99**    **6" RIGHT SIDE  
STEAMER INLET**

There shall be a 6" steamer inlet located on the right side of the pump module.

The suction fittings shall include a removable die-cast screen to provide cathodic protection for the pump thus reducing corrosion.

A short steamer barrel shall be installed to accommodate an intake valve without exceeding the legal overall body width.

There shall be a Darley 6" butterfly valve with an automatic relief and electric control installed in the side suction sleeve casting, completely behind the panel.

A switch with indicator lights shall be mounted on the operator's control panel.

The relief valve shall be mounted on the intake side of butterfly valve and factory preset to 125 psi with a maximum pressure of 300 psi. The valve shall relieve excess pressure to the atmosphere. A green "open" indicator light and a red "closed" indicator light shall be provided.

There shall be a bleeder valve provided on the steamer inlet. The valve shall be used to bleed off air or water as per NFPA requirements.



**100** **INTAKE RELIEF VALVE**

There shall be a NFPA compliant intake relief valve installed on the suction side of the pump. The valve shall be the preset type, adjustable from 50 to 250 PSI, on the valve itself. The valve shall be factory preset at approximately 125 PSI. The relief outlet shall be directed below the pump with the discharge terminating in a 2-1/2" male NST connection. The discharge shall be away from the pump operator and labeled "Do Not Cap".

The intake shall terminate MNST thread.

There shall be one (1) Kochek model SKE46L, 6" Female NH swivel long handle x 4" Storz 30° elbow adapter provided. The adapter shall be light weight aluminum with a black K-Coat finish.

There shall be one (1) Kochek model CC407, 4" Storz blind cap with chain provided. The cap shall have a K-Coat finish.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a chrome color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**101** **2-1/2" LEFT SIDE INLET**

There shall be a 2-1/2" gated inlet, with 2-1/2" plumbing, provided on the left side of the pump module. The inlet shall be partially recessed behind the panel in order to keep the valve protected from the elements.

A Darley 2-1/2" valve shall be provided. The valve shall have a bronze body with a stainless steel ball.

The valve shall be actuated by a Darley manual actuator installed directly on the valve. The handle shall allow the valve to be controlled directly at the valve.

There shall be a quarter-turn drain valve included. There shall be a chrome plated T-handle provided on the drain valve to facilitate use with a gloved hand. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

The intake shall terminate FBCT thread.

There shall be one (1) South Park style HPC3008MC, 2 1/2" BCT plug with chain provided. The plug shall be manufactured from high quality brass that shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a black color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**102** 2-1/2" RIGHT SIDE  
INLET

There shall be 2-1/2" gated inlet, with 2-1/2" plumbing, provided on the right side of the pump module. The inlet shall be partially recessed behind the panel in order to keep the valve protected from the elements.

A Darley 2-1/2" valve shall be provided. The valve shall have a bronze body with a stainless steel ball.

The valve shall be actuated by a Darley manual actuator installed directly on the valve. The handle shall allow the valve to be controlled directly at the valve.

There shall be a quarter-turn drain valve included. There shall be a chrome plated T-handle provided on the drain valve to facilitate use with a gloved hand. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

The intake shall terminate FBCT thread.

There shall be one (1) South Park style HPC3008MC, 2 1/2" BCT plug with chain provided. The plug shall be manufactured from high quality brass that shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a black color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**103** **2-1/2" LEFT SIDE DISCHARGE**

There shall be a 2-1/2" discharge, with 2-1/2" plumbing, located on the left side of the pump module.

A Darley 2-1/2" valve shall be provided. The valve shall have a bronze body with a stainless steel ball.

The discharge valve shall be controlled by a Darley lever control on the pump operator's panel.

There shall be a quarter-turn drain valve included. There shall be a chrome plated T-handle provided on the drain valve to facilitate use with a gloved hand. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

There shall be a 2-1/2" water pressure gauge installed. The pressure gauge shall read pressure in PSI and shall be capable of reading 0-400 PSI. The gauge shall be liquid filled to insure proper operations to minus 40 degrees.

The discharge shall terminate MNST thread.

There shall be one (1) South Park style SE394505MC, 2-1/2" Female NST swivel rocker lug x 2-1/2" Male BCT 45° elbow adapter provided. The adapter shall be manufactured from high quality brass and the swivel shall be attached using ball bearings. The adapter shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

There shall be one (1) South Park style HCC2808MC, 2-1/2" BCT vented rocker lug cap with chain provided. The cap shall be manufactured from high quality brass that shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a red color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**104** **2-1/2" RIGHT SIDE DISCHARGE**

There shall be a 2-1/2" discharge, with 2-1/2" plumbing, located on the right side of the pump module.

A Darley 2-1/2" valve shall be provided. The valve shall have a bronze body with a stainless steel ball.

The discharge valve shall be controlled by a Darley lever control on the pump operator's panel.

There shall be a quarter-turn drain valve included. There shall be a chrome plated T-handle provided on the drain valve to facilitate use with a gloved hand. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to

assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

There shall be a 2-1/2" water pressure gauge installed. The pressure gauge shall read pressure in PSI and shall be capable of reading 0-400 PSI. The gauge shall be liquid filled to insure proper operations to minus 40 degrees.

The discharge shall terminate MNST thread.

There shall be one (1) South Park style SE394505MC, 2-1/2" Female NST swivel rocker lug x 2-1/2" Male BCT 45° elbow adapter provided. The adapter shall be manufactured from high quality brass and the swivel shall be attached using ball bearings. The adapter shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

There shall be one (1) South Park style HCC2808MC, 2-1/2" BCT vented rocker lug cap with chain provided. The cap shall be manufactured from high quality brass that shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a orange color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**105** **4" RIGHT SIDE DISCHARGE**

There shall be a 4" large diameter discharge, with 4" plumbing, located on the right side of the pump module.

An Akron Brass model 8630 3" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass manual gear actuator installed on the valve. The gear actuator shall operate at a 50:1 gear ratio, which operates from fully open to fully closed in twelve (12) rotations.

The gear actuator shall be controlled by an Akron Brass 4" handwheel valve controller. The handwheel worm gear shall be connected to the remote mounted valve via a rod assembly. The handwheel shall turn a gear sector mounted on the valve for smoother and easier operations under pressure. A position indicator shall show the position of the ball valve as per NFPA 1901. Opening and closing speed shall comply with the current NFPA standard to minimize effects of water hammer.

There shall be a quarter-turn drain valve included. There shall be a chrome plated T-handle provided on the drain valve to facilitate use with a gloved hand. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

There shall be a 2-1/2" water pressure gauge installed. The pressure gauge shall read pressure in PSI and shall be capable of reading 0-400 PSI. The gauge shall be liquid filled to insure proper operations to minus 40 degrees.

The discharge shall terminate MNST thread.

There shall be one (1) Kochek model SKE44R, 4" Female NH swivel rocker lug x 4" Storz 30° elbow adapter provided. The adapter shall be light weight aluminum with a black K-Coat finish.

There shall be one (1) Kochek model CC407, 4" Storz blind cap with chain provided. The cap shall have a K-Coat finish.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a dark green color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**106** **1-1/2" CROSSLAY  
PRE-CONNECT**

There shall be a 1-1/2" crosslay pre-connect with 2" plumbing.

An Akron Brass model 8820 2" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass manual actuator installed on the valve.

The manual actuator shall be controlled by a push/pull T-handle. The handle shall be chrome plated with a recessed ID label.

There shall be a quarter-turn drain valve included. There shall be a chrome plated T-handle provided on the drain valve to facilitate use with a gloved hand. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

There shall be a 2-1/2" water pressure gauge installed. The pressure gauge shall read pressure in PSI and shall be capable of reading 0-400 PSI. The gauge shall be liquid filled to insure proper operations to minus 40 degrees.

The discharge shall terminate MNPSH thread.

The discharge shall be designated as a pre-connect and no cap and chain shall be supplied.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a yellow color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**107** 1-1/2" CROSSLAY  
PRE-CONNECT

There shall be a 1-1/2" crosslay pre-connect with 2" plumbing.

An Akron Brass model 8820 2" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass manual actuator installed on the valve.

The manual actuator shall be controlled by a push/pull T-handle. The handle shall be chrome plated with a recessed ID label.

There shall be a quarter-turn drain valve included. There shall be a chrome plated T-handle provided on the drain valve to facilitate use with a gloved hand. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

There shall be a 2-1/2" water pressure gauge installed. The pressure gauge shall read pressure in PSI and shall be capable of reading 0-400 PSI. The gauge shall be liquid filled to insure proper operations to minus 40 degrees.

The discharge shall terminate MNPSH thread.

The discharge shall be designated as a pre-connect and no cap and chain shall be supplied.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a white color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**108** 2-1/2" CROSSLAY  
PRE-CONNECT

There shall be a 2-1/2" crosslay pre-connect with 2-1/2" plumbing.  
A Darley 2-1/2" valve shall be provided. The valve shall have a bronze body with a stainless steel ball.

The manual actuator shall be controlled by a push/pull T-handle. The handle shall be chrome plated with a recessed ID label.

There shall be a quarter-turn drain valve included. There shall be a chrome plated T-handle provided on the drain valve to facilitate use with a gloved hand. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in the pump panel area. The drain valve shall be connected to the valve with flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color coded bezel shall be included.

There shall be a 2-1/2" water pressure gauge installed. The pressure gauge shall read pressure in PSI and shall be capable of reading 0-400 PSI. The gauge shall be liquid filled to insure proper operations to minus 40 degrees.

The discharge shall terminate MNST thread.

There shall be one (1) South Park model A3724MC, 2-1/2" Female NST rocker lug x 2-1/2" Male BCT rigid adapter provided. The adapter shall be manufactured from high quality brass that shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

The discharge shall be designated as a pre-connect and no cap and chain shall be supplied.

There shall be a two (2) piece permanent plate installed that includes a verbiage tag and a gray color coded bezel. The verbiage tag shall be etched on aluminum and have 3M-468 adhesive applied to the back for assembly into the bezel. The bezel shall be die cast aluminum construction and color coded on all visible surfaces with an automotive grade paint. 3M VHB adhesive shall be applied to the back.

**109** DARLEY WATER  
PURIFICATION  
SYSTEM

There shall be a Darly water purification system, model PuriFire 4S10F, installed in the pump module.

The PuriFire™ 4S10F is a four-stage fire apparatus integrated water purification system. It utilizes the fire pump to feed the water purification unit. This unit equips sediment filters, carbon filters, UV and ozone devices to remove toxic substances from floodwater. Key components of this unit are NSF certified, which guarantee the best purification ability and safety to human health.



**110 WATER TANK**

The apparatus shall be equipped with a United Plastic Fabricating 2000 imperial gallon T-type water tank. Certification of the tank capacity shall be recorded on the manufacturer's record of construction and shall be provided to the purchaser upon delivery of the apparatus. The UPF® water tank shall be constructed of 1/2" thick PT2E™ polypropylene sheet stock. This material shall be a non-corrosive stress relieved thermoplastic, black in color, and U.V. stabilized for maximum protection.

**BOOSTER TANK**

The booster tank shall be of a specific configuration and shall be so designed to be completely independent of the body and compartments. All joints and seams shall be nitrogen welded and tested for maximum strength and integrity. The top of the booster tank shall be fitted with removable lifting eyes designed with a 3 to 1 safety factor to facilitate easy removal.

**TANK BAFFLES**

The transverse swash partitions shall be manufactured of 3/8" PT2E™ polypropylene (natural in color) and extend from approximately 4" off the floor to just under the cover. The longitudinal swash partitions shall be constructed of 3/8" PT2E polypropylene (natural in color) and extend to the floor of the tank through the cover to allow for positive welding and maximum integrity. All partitions shall be equipped with vent and air holes to permit movement of air and water between compartments. The partitions shall be designed to provide maximum water flow. All swash partitions shall interlock with one another and be welded to each other as well as to the walls of the tank.

**TANK SUMP**

There shall be one (1) sump in the bottom of the water tank. The sump shall be constructed of 1/2" polypropylene and shall be located in the left front quarter of the tank. On all tanks that require a front suction, a 4" schedule 40 polypropylene

pipe shall be installed that will incorporate a dip tube from the front of the tank to the sump location. The sump shall be used as a combination clean-out and drain. All tanks shall have an anti-swirl plate located approximately 2" above the sump to pre-vent air from being entrained in the water while pumping.

#### TANK FILL CONNECTION

All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank, and shall be capable of withstanding sustained fill rates of up to 1,000 GPM.

#### TANK LID

The tank lid shall be constructed of 1/2" thick PT2E™ polypropylene to incorporate a multi three-piece locking design that allows for individual removal and inspection if necessary. The tank lid shall be recessed 3/8" from the top of the tank and shall be welded to both sides and longitudinal partitions for maximum integrity. Each one of the lids shall have hold downs consisting of 2" polypropylene dowels spaced a maximum of 30" apart. These dowels shall extend through the covers and shall assist in keeping the covers rigid under fast filling conditions. A minimum of two lifting dowels shall be drilled and tapped 1/2" x 13" to accommodate the lifting eyes.

#### WATER TANK MOUNTING

The water tank cradle shall be an integral part of the body sub-frame. Please reference the sub-frame section for complete water tank mounting information.

#### WATER TANK DRAIN

There shall be a 1-1/2" drain valve provided under the sump of the water tank. The valve shall include a locking lever to prevent accidental draining of the water tank.

#### WATER TANK FILL TOWER

The tank shall have a combination vent and manual fill tower marked "Water Fill." The fill tower shall be constructed of 1/2" PT2E™ polypropylene and shall be a minimum dimension of 8" x 8" at the outer perimeter. The tower shall be located in the left front corner of the tank. The tower shall have a 1/4" thick removable polypropylene screen and a PT2E™ polypropylene hinged-type cover. The fill tower shall be black in color.

#### 6" WATER TANK OVERFLOW

The tank shall be equipped with a minimum of a 6" schedule 40 polypropylene overflow/air vent pipe. The pipe shall be installed in the fill tower and extend through the tank and dump to the rear of the rear axle.

There shall be one (1) Fire Research TankVision™ model WLA200-A00 water tank level gauge provided on the pump operator's control panel. The kit shall include an electronic indicator module, a pressure sensor, and a 10' sensor cable. The indicator shall show the volume of water in the tank on nine (9) easy to see super bright LEDs. The display shall use a 2 dimensional 2-element lens to refract the light from the LEDs to provide full 180° visibility for the level indication. The gauge shall start to flash when the tank volume is at 1/4 tank or less and use down scrolling LEDs to alert the pump operator when the tank is almost empty.

## 111 WATER TANK LEVEL GAUGE

**112** 2-1/2" DIRECT TANK FILL

There shall be a one (1) 2-1/2" direct tank fill with bleeder located on the right rear of the apparatus.

An Akron Brass model 8825 2-1/2" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass model TSC manual actuator installed directly on the valve. The handle shall allow the valve to be controlled directly at the valve.

The intake shall terminate MNST thread.

There shall be one (1) South Park style SE394505MC, 2-1/2" Female NST swivel rocker lug x 2-1/2" Male BCT 45° elbow adapter provided. The adapter shall be manufactured from high quality brass and the swivel shall be attached using ball bearings. The adapter shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

There shall be one (1) South Park style HCC2808MC, 2-1/2" BCT vented rocker lug cap with chain provided. The cap shall be manufactured from high quality brass that shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

**113** 2-1/2" DIRECT TANK FILL

There shall be a one (1) 2-1/2" direct tank fill with bleeder located on the left rear of the apparatus.

An Akron Brass model 8825 2-1/2" Swing-Out™ valve shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts, and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass model TSC manual actuator installed directly on the valve. The handle shall allow the valve to be controlled directly at the valve.

The intake shall terminate MNST thread.

There shall be one (1) South Park style SE394505MC, 2-1/2" Female NST swivel rocker lug x 2-1/2" Male BCT 45° elbow adapter provided. The adapter shall be manufactured from high quality brass and the swivel shall be attached using ball bearings. The adapter shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

There shall be one (1) South Park style HCC2808MC, 2-1/2" BCT vented rocker lug cap with chain provided. The cap shall be manufactured from high quality brass

that shall be polished to remove manufacturing irregularities with a chrome finish applied to the polished surface.

**114** **NEWTON 10 x 10**  
**ELECTRIC**  
**STAINLESS**  
**STEEL DUMP**  
**VALVE**

There shall be one (1) electric stainless steel 10" x 10" square Newton dump valve installed on the apparatus  
This valve is to be operated from both the driver's position and the rear of the truck

The dump valve shall be located at the rear of the apparatus.

**115** **NEWTON 36"**  
**MANUALLY**  
**OPERATED**  
**EXTENSION**  
**CHUTE**

One (1) Newton, model 4036-34, 36" manually operated stainless steel telescoping extension chute shall be provided on the dump valve. The chute shall aid in directing water when the dump valve is actuated. The extension chute shall be connected to the door open circuit in the cab. The light shall be activated when the chute is extended.

**116** **UNITED PLASTIC**  
**FABRICATING 10"**  
**SQUARE DUMP**  
**VALVE FLANGE**

There shall be an opening provided in the UPF poly-tank to accommodate a 10" square dump valve. The opening shall include the correct bolt pattern to facilitate attachment of the dump valve.

The dump valve shall be controlled by a manually actuated handle. The handle shall be mounted on the side of the dump valve.

**117** **DARLEY PUMP**  
**MODULE**

The pump module shall be fabricated by W.S. Darley & Company. The pump module frame is all aluminum of completely welded tubular construction.

**118** **INDEPENDENT**  
**PUMP MODULE**

The pump module shall be fabricated as individual unit independent from the body. The pump module shall be fabricated using precision holding fixtures to ensure proper dimensions. All attachment points shall be heavily reinforced.

**119** **PUMP MODULE**  
**LIGHTS**

There shall be two (2) 5" round dome style lights installed in the pump module. The lights shall be activated by a switch on each light.

**120** **CONTROL PANEL**

The left side of the pump enclosure shall be divided into two sections. The lower section shall be where all valve controls, the primer control, the discharge relief valve controls (pilot valve), and other mechanical controls are located. This surface shall be referred to as the "control panel".

All valve controls shall be the self-locking type, activated by either direct control or with a direct linkage utilizing friction locking bell cranks and universal ball swivels. The primary valve handles shall have color coded tags installed in a recessed area to clearly denote the purpose of each control.

**121** **INSTRUMENT**  
**PANEL**

The surface above the control panel shall contain all instruments, gauges, test fittings, and optional controls. This surface shall be referred to as the "instrument panel". The instrument panel shall be independent and hinged and latched so that it may be opened. All instruments, gauges, and other equipment shall be installed with sufficient slack in any cabling, tubing, or plumbing to allow the panel to swivel to the fully open position.

The instrument and gauge panel shall be vertically hinged on the forward edge "swing out" to provide access for service.

The pressure gauges are to be 2-1/2" Liquid Filled – Dual Scale PSI and KPA.

- 122 RIGHT SIDE PUMP PANEL** A single panel shall be installed on the right side of the pump enclosure. This shall be the area where right side discharges, inlets, steamers, and other pump associated equipment are located. This panel shall be easily removable and held in place with quick release push latches. It shall be fully removable for pump and plumbing access without the need to use hand tools. Any electrical equipment that may be installed shall be equipped with connectors so they may be easily separated from the opening created when the below described front access panel is removed.
- 123 PANEL SURFACES** The control panel, instrument panel, and right side pump panel shall be fabricated from a minimum of 16 gauge stainless steel with #4 brushed finish.
- 124 PUMP PANEL LIGHTS** The pump operator's control panel and the right side pump panel shall each be illuminated by two (2) weather resistant lights. The pump panel lights shall become energized by a switch on the pump operator's panel. A extruded aluminum shield shall be installed over the pump panel lights to further protect them from the elements and to act as a reflector for additional illumination.
- 125 PRESSURE AND VACUUM TEST PORT** There shall be a Class1 model 121384 pressure and vacuum test port provided on the pump panel.
- 126 ENGINE COOLER CONTROL VALVE** There shall be a Class1 model 38BV engine cooling control valve provided on the pump panel.
- 127 PUMP COOLER CONTROL VALVE** There shall be a Class1 model 38BV pump cooling control valve provided on the pump panel.
- 128 DISCHARGE TRIM PLATES** Each gated discharge shall have a chrome plated die cast zinc trim plate around the discharge valve and fitting. The trim plate shall be easily removable without the need to disturb the valve.
- 129 LEFT SIDE RUNNING BOARD** A modular bolt-on running board shall be installed on the side of the pump module. The running board shall be constructed of anti-slip tread plate. The outside edge of the running board shall be flush with the rub rail that is installed on the body to maintain a uniform appearance. The running board shall be installed with sufficient support to form a sturdy, non-deflecting step area for personnel.
- 130 RIGHT SIDE RUNNING BOARD** A modular bolt-on running board shall be installed on the side of the pump module. The running board shall be constructed of anti-slip tread plate. There shall be a soft suction hosewell compartment recessed in the running board. The floor of the compartment shall be covered with Dri-Dek flooring. The outside edge of the running board shall be flush with the rub rail that is installed on the body to maintain a uniform appearance. The running board shall be installed with sufficient support to form a sturdy, non-deflecting step area for personnel.
- STORAGE WELL STRAPS**  
There shall be two (2) Pac Trac model 1008 straps provided with the storage well. The straps shall be installed over the top of the compartment to retain the hose.

**131** **CROSSLAY  
CONFIGURATION**

The two (2) 1-1/2" and one (1) 2-1/2" crosslay pre-connects and one (1) deadlay shall be located above the pump module. High pressure flex hose with stainless steel couplings shall be used in the plumbing.

A 90° swivel elbow will be included in the crosslays to keep the hose from kinking when pulled from either side of the apparatus. The swivel for each crosslay shall be located outboard for ease of making connections while changing hose.

There shall be a heavy duty 22 oz. hypalon vinyl coated nylon cover located over the top and on each end of the pre-connected crosslays and deadlay. The top of the cover shall be connected to the top-forward portion of the crosslays through a C-Rail channel and shall attach on the top-rear portion using velcro.

The color of the vinyl restraint shall be black.

The floor of the crosslay shall be covered with Dura-Dek fiber reinforced material. The Dura-Dek shall have "T" beams in parallel connected with cross slats that are first mechanically bonded and then epoxied. The "T" sections shall be spaced 3/4" apart to allow for drainage and ventilation.

The 1-1/2" crosslay pre-connect shall have a capacity of 250' of 1-3/4" double jacket fire hose.

The crosslay pre-connect shall be capable of holding the hose in a single stack.

The 1-1/2" crosslay pre-connect shall have a capacity of 250' of 1-3/4" double jacket fire hose.

The crosslay pre-connect shall be capable of holding the hose in a double stack.

The 2-1/2" crosslay pre-connect shall have a capacity of 200' of 2-1/2" double jacket fire hose.

The crosslay pre-connect shall be capable of holding the hose in a double stack.

The deadlay shall have a capacity of 250' of 1-3/4" double jacket fire hose.

The deadlay shall be capable of holding the hose in a double stack.

The interior of the crosslay hose bed shall have a maintenance free abraded finish.

There shall be three (3) dividers in the crosslay area. Each divider shall be fabricated of aluminum and be mounted in a channel on each end for adjustability.

**132** **RIGHT SIDE PUMP  
ACCESS PANEL**

The crosslay dividers shall have maintenance free abraded finish.

There shall be a stainless steel door above the right hand side pump panel to allow access to the pump compartment. The vertically hinged panel shall be of the single pan design and shall be positively latched in the closed position utilizing a push button latch.

**133** **AIR HORN  
BUTTON**

One (1) air horn button shall be provided on the pump panel. The button shall be red in color and included a label reading "AIR HORN".

**134** **ALUMINUM BODY CONSTRUCTION**

The apparatus body shall be fabricated from 1/8" 5052-H32, smooth aluminum sheet. The total outside width of the apparatus body shall not exceed 100 inches (2.54 meters). The width measurement of the sidewalls shall be made from the outside wall of the two opposite sides of the body.

The complete apparatus body shall be fabricated utilizing the break and bend techniques in order to form a strong, yet flexible, uni-body structure. The body shall be constructed with holding fixtures to ensure proper dimensioning. Each apparatus body is specific in design in order to meet the unique requirements of the purchasing fire department.

The main body compartments on each side, as well as the rear center compartment if applicable, shall contain a sweep out floor design. Each compartment shall be made to the most practical dimensions in order to provide maximum storage capacity for the fire department's equipment. The door opening threshold shall be positioned lower than the compartment floor permitting easy cleaning of the compartments.

Continuous, solid welded seams shall be located at the upper front and upper rear corners of the apparatus body. The flooring of all lower, main body compartmentation shall also have solid weld seams. All door jams, on both the top and the bottom, shall be solid welded as well. Each main door jam shall consist of a double jam design; this is comparable to a double struck frame design, which provides superior strength and durability. All double door jams are to be welded together utilizing the plug weld technique. All remaining compartment walls shall be stitch welded.

The compartment floors, specifically L1 and R1, shall have a minimum of two (2) 2" x 1/4" angles welded to the entire width of the compartment floor. The two (2) rear side compartments as well as the rear center compartment, if applicable, shall be welded to the rear deck support structure. This rear deck support structure is specially designed for the galvanized apparatus body substructure. A minimum of two (2) angles, which are 1/4" x 3" x 3", shall run the entire width of the body from sidewall to sidewall. Each lower, rear compartment shall be adequately stitch welded to the cross angles providing strength and durability to the entire apparatus body.

The body design shall include a "false wall" design in the lower portion of each lower, rear compartment. This "false wall" is required in order to allow for easy accessibility to the rear electrical components found in the rear tail light cluster area.

On the upper area of the apparatus body, directly above the side compartment door openings, a header is to be fabricated from smooth, aluminum sheet. This area shall be free from any body seams and shall be painted the same color as the apparatus body. The height of the header may vary depending on the following factors: apparatus design, lettering requirements, scene lights and warning light requirements as well as various other options. A "J" channel shall be incorporated into the body design in order to provide a rain gutter to further assist in preventing excessive moisture from getting into the compartments.

**135** **ULTRA  
STAINLESS™  
STEEL  
FASTENERS**

Ultra Stainless™ steel fasteners shall be provided for all exposed and unpainted fasteners throughout the body in locations such as overlays, pump panels, and other numerous hardware mounting locations. The special ingredient in Ultra Stainless™ is Marutex®, which adds 2% molybdenum (moly) to 410 stainless. Moly is the significant component of 316 stainless that provides extra corrosion resistance. The moly is now added to 410 self drilling screws to produce Ultra Stainless™. This combination provides for unprecedented corrosion resistance combined with hardness for drilling.

**136** **GS-36 BODY SUB  
FRAME**

To assure proper body alignment and clearance, the body sub frame shall be constructed in a jig and fitted directly on the chassis. The sub frame shall be constructed of 36,000 PSI galvanized steel.

The chassis frame rails shall be fitted with fiber reinforced rubber to isolate the body frame members from direct contact with chassis frame rails.

The main body sub frame shall be constructed from steel tubing. The sub frame shall run the full length of the body and shall be spaced the same width as the chassis frame rails. The main sub frame shall also be the integral support for the water tank. Vertical drop tubes shall be welded to the sub frame. From these vertical drop tubes shall extend cross members constructed of steel angle. These cross members shall extend out to support the compartments. Cross members shall be located at the front and rear of the body and in front and rear of the wheel well opening.

A drop frame, fabricated of steel tube and steel angles, shall support the compartment area behind the rear. The rear drop frame shall be constructed using vertical drop tubes, welded to the main sub frame. All drop frame structures shall be welded directly to the body sub frame to allow the body to be a completely separate structure from the chassis.

After fabrication the sub frame shall be hot dip galvanized for maximum protection against corrosion.

**BODY MOUNTING**

The body sub frame shall be fastened to the chassis frame with a minimum of six (6) spring loaded body mounts. Each mount shall be configured using a two-piece bracket. The two (2) brackets shall be fabricated of steel plates. The plates shall be galvanized to prevent any corrosion. Each mounting assembly shall utilize two (2) plated bolts and two (2) heavy duty springs. The assembly design shall allow the body and sub frame to act as one (1) component, separate from the chassis. As the chassis frame twists under driving conditions, the spring mounting system shall limit any stress from being transferred into the body. The spring loaded body mounts shall also prevent frame side rail or body damage caused by unevenly distributed stress and strains due to load and chassis movement. Body mountings that do not allow relief from chassis movement shall not be acceptable.

**TANK MOUNTING**

The water tank shall rest on the sub frame cross members which are spaced as required by the tank manufacturer.



The tank shall be isolated from the cross members through the use of hard rubber strips with a minimum Rockwell hardness of 60 durometer. Additionally, the tank shall be supported around the entire perimeter and captured front and rear as well as side to side to prevent the tank from shifting during vehicle operations.

**137 EXHAUST HEAT  
DEFLECTOR  
SHIELD**

There shall be a 5" heat deflector shield installed over the exhaust to aid in dissipating the heat to prevent exhaust heat from adversely affecting anything stored in the body.

**138 LEFT SIDE BODY  
CONFIGURATION**

**COMPARTMENT L1**

There shall be a lower compartment located ahead of the rear wheels on the left side of the apparatus body. This compartment shall be designated as L1 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening 44.00" wide x 35.00" high
- Usable Depth 24.75"

There shall be a two (2) vertically hinged lap type compartment doors installed on the compartment face. The lap doors shall be a double panel construction with the outer panels fabricated of .190" 3003-H14 aluminum and the inner panels of .125" 3003-H14 aluminum. There shall be rubber molding installed in the overlap area of the doors to insure a weatherproof seal and prevent water from collecting in the door sills. Weep holes shall be installed at the bottom of the doors to drain moisture from between the door panels. The compartment doors shall have a polished stainless steel continuous hinge with a rubber seal installed between the hinge and the aluminum door to separate the dissimilar metals. The hinge pin shall be stainless steel with a minimum diameter of 1/4". The compartment door handle shall be a non-locking stainless steel recessed "D" ring type handle. There shall be a safety latch with striker plate included with the door handle assembly.

There shall be two (2) Cleveland-style spring loaded door holders furnished on the compartment door to hold the door in either the fully open or partially closed position. The spring-loaded door holders shall close the door automatically when it is positioned past center or return the door to the fully open position if the center point is not reached and the door is released. On compartments having double doors, the secondary door shall have a latch mechanism to secure the door when the primary door is opened.

The compartment shall have two (2), 18" On-Scene LED Night Axes installed. Each light shall be enclosed within a tough waterproof Lexan tube enclosure. Each Night Axe shall offer 74 lumens per 18" of light and an adjustable beam angle. There shall be four (4) aluminum strut channels, two (2) per side, welded in the full depth compartment.

There shall be one (1), aluminum adjustable shelf installed on the apparatus in the full depth compartment. The shelf shall be constructed of 3/16" aluminum

**139** **FIRE**  
**EXTINGUISHER**  
**RACK**

sheet with 2" lips. The shelf shall have an abraded finish, and shall be designed in such a manner that will allow liquids to readily drain when spilled.

There shall be two (2) applications in the compartment that shall utilize Dri-Dek interlocking squares. Each square shall be made from polyvinyl chloride that is flame and chemical resistant. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

There shall be one (1), roll out equipment tray installed on the floor of the compartment. The tray shall be equipped with an Austin Hardware drawer slide. The roller assembly shall have a rated capacity of 300 lbs. distributed load and shall have 100% extension capability. The tray shall be constructed of 3/16" aluminum sheet with 3" lips to prevent items from being shifted during transportation. The tray shall be equipped with the Austin Hardware front drawer release system which allows for one handed latch closed position release. The tray shall have an abraded finish and shall be equipped with a locking slide in order to hold the tray in either a fully extended or closed position.

There shall be a storage rack for three (3) fire extinguishers located in a compartment. The storage rack shall be fabricated from aluminum and have a S-Coat finish. The floor of each extinguisher slot shall be covered with a rubber liner to assist in preventing damage.

**COMPARTMENT L2**

There shall be a lower compartment located behind the rear wheels on the left side of the apparatus body. This compartment shall be designated as L2 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening 28.00" wide x 35.00" high

- Usable Depth 24.75"

There shall be a one (1) vertically hinged lap type compartment door installed on the compartment face. The lap door shall be a double panel construction with the outer panel fabricated of .190" 3003-H14 aluminum and the inner panel of .125" 3003-H14 aluminum. There shall be rubber molding installed in the overlap area of the door to insure a weatherproof seal and prevent water from collecting in the door sills. Weep holes shall be installed at the bottom of the doors to drain moisture from between the door panels. The compartment door shall have a polished stainless steel continuous hinge with a rubber seal installed between the hinge and the aluminum door to separate the dissimilar metals. The hinge pin shall be stainless steel with a minimum diameter of 1/4".

The compartment door handle shall be a non-locking stainless steel recessed "D" ring type handle. There shall be a safety latch with striker plate included with the door handle assembly.

There shall be one (1) Cleveland-style spring loaded door holder furnished on the compartment door to hold the door in either the fully open or partially closed position. The spring-loaded door holder shall close the door automatically when

**140** **RIGHT BODY CONFIGURATION**

it is positioned past center or return the door to the fully open position if the center point is not reached and the door is released. On compartments having double doors, the secondary door shall have a latch mechanism to secure the door when the primary door is opened.

The compartment shall have two (2), 18" On-Scene LED Night Axes installed. Each light shall be enclosed within a tough waterproof Lexan tube enclosure. Each Night Axe shall offer 74 lumens per 18" of light and an adjustable beam angle. There shall be one (1) application in the compartment that shall utilize Dri-Dek interlocking squares. Each square shall be made from polyvinyl chloride that is flame and chemical resistant. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

**COMPARTMENT R1**

There shall be a forward upper compartment located above the tandem axle rear wheels on the right side of the apparatus body. This compartment shall be designated as R1 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening 62.00" wide x 29.00" high
- Usable Depth 11.25"

This compartment shall have a ROM roll-up door.

- The roll-up door shall have an unpainted satin aluminum finish on the door slats and the door trim components.
- The door shall be equipped with a CPI harsh environment mechanical type door ajar switch located inside compartment interior lower door track.
- There shall be NO keyed lock on this roll-up compartment door.
- One (1) nylon strap shall be provided to assist in closing the door. The strap shall be fastened to the left side of the lower inside door sill. The strap shall extend from the left side of the lower inside door sill to a footman loop attached to the center of the left side of the door frame.
- One (1) aluminum drip pan/door finish guard shall be provided with the rollup door.
- A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an aluminum extrusion with an anodized exterior finish.

The compartment shall have two (2), 18" On-Scene LED Night Axes installed. Each

light shall be enclosed within a tough waterproof Lexan tube enclosure. Each Night Axe shall offer 74 lumens per 18" of light and an adjustable beam angle. There shall be one (1) application in the compartment that shall utilize Dri-Dek interlocking squares. Each square shall be made from polyvinyl chloride that is flame and chemical resistant. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

#### COMPARTMENT R2

There shall be a centre upper compartment located above the tandem axle rear wheels on the right side of the apparatus body. This compartment shall be designated as R2 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening 62.00" wide x 29.00" high

- Usable Depth 11.25"

This compartment shall have a ROM roll-up door.

- The roll-up door shall have an unpainted satin aluminum finish on the door slats and the door trim components.
- The door shall be equipped with a CPI harsh environment mechanical type door ajar switch located inside compartment interior lower door track.
- There shall be NO keyed lock on this roll-up compartment door.
- One (1) nylon strap shall be provided to assist in closing the door. The strap shall be fastened to the left side of the lower inside door sill. The strap shall extend from the left side of the lower inside door sill to a footman loop attached to the center of the left side of the door frame.
- One (1) aluminum drip pan/door finish guard shall be provided with the rollup door.
- A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an aluminum extrusion with an anodized exterior finish.

The compartment shall have two (2), 18" On-Scene LED Night Axes installed. Each light shall be enclosed within a tough waterproof Lexan tube enclosure. Each Night Axe shall offer 74 lumens per 18" of light and an adjustable beam angle. There shall be one (1) application in the compartment that shall utilize Dri-Dek interlocking squares. Each square shall be made from polyvinyl chloride that is flame and chemical resistant. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

There shall be five (5), pairs of Ziamatic N6.75 "C" clips to hold the spare, 6-3/4"

diameter SCBA cylinders in the "valve up" position installed in the compartment.  
COMPARTMENT R3

There shall be a rear upper compartment located above the tandem axle rear wheels on the right side of the apparatus body. This compartment shall be designated as R3 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening 62.00" wide x 29.00" high
- Usable Depth 11.25"

This compartment shall have a ROM roll-up door.

- The roll-up door shall have an unpainted satin aluminum finish on the door slats and the door trim components.
- The door shall be equipped with a CPI harsh environment mechanical type door ajar switch located inside compartment interior lower door track.
- There shall be NO keyed lock on this roll-up compartment door.
- One (1) nylon strap shall be provided to assist in closing the door. The strap shall be fastened to the left side of the lower inside door sill. The strap shall extend from the left side of the lower inside door sill to a footman loop attached to the center of the left side of the door frame.
- One (1) aluminum drip pan/door finish guard shall be provided with the rollup door.
- A compartment threshold protection plate shall be installed on the bottom edge of the compartment door opening. The threshold protection shall be fabricated from an aluminum extrusion with an anodized exterior finish.

The compartment shall have two (2), 18" On-Scene LED Night Axes installed. Each light shall be enclosed within a tough waterproof Lexan tube enclosure. Each Night Axe shall offer 74 lumens per 18" of light and an adjustable beam angle. There shall be one (1) application in the compartment that shall utilize Dri-Dek interlocking squares. Each square shall be made from polyvinyl chloride that is flame and chemical resistant. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

There shall be three (3), pairs of Ziamatic N6.75 "C" clips to hold the spare, 6-3/4" diameter SCBA cylinders in the "valve up" position installed in the compartment.

#### COMPARTMENT R4

There shall be a lower compartment located ahead of the tandem axle rear

wheels on the right side of the apparatus body. This compartment shall be designated as R4 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening 44.00" wide x 26.00" high

- Usable Depth 24.75"

There shall be a two (2) vertically hinged lap type compartment doors installed on the compartment face. The lap doors shall be a double panel construction with the outer panels fabricated of .190" 3003-H14 aluminum and the inner panels of .125" 3003-H14 aluminum. There shall be rubber molding installed in the overlap area of the doors to insure a weatherproof seal and prevent water from collecting in the door sills. Weep holes shall be installed at the bottom of the doors to drain moisture from between the door panels. The compartment doors shall have a polished stainless steel continuous hinge with a rubber seal installed between the hinge and the aluminum door to separate the dissimilar metals. The hinge pin shall be stainless steel with a minimum diameter of 1/4". The compartment door handle shall be a non-locking stainless steel recessed "D" ring type handle. There shall be a safety latch with striker plate included with the door handle assembly.

There shall be two (2) Cleveland-style spring loaded door holders furnished on the compartment door to hold the door in either the fully open or partially closed position. The spring-loaded door holders shall close the door automatically when it is positioned past center or return the door to the fully open position if the center point is not reached and the door is released. On compartments having double doors, the secondary door shall have a latch mechanism to secure the door when the primary door is opened.

The compartment shall have two (2), 9" On-Scene LED Night Axes installed. Each light shall be enclosed within a tough waterproof Lexan tube enclosure. Each Night Axe shall offer 74 lumens per 18" of light and an adjustable beam angle. There shall be four (4) aluminum strut channels, two (2) per side, welded in the full depth compartment.

There shall be two (2) applications in the compartment that shall utilize Dri-Dek interlocking squares. Each square shall be made from polyvinyl chloride that is flame and chemical resistant. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

There shall be a roll out tray installed on the floor of compartment. The tray shall be provided with a SlideMaster™ model SM3-MP roller type assembly. The roller assembly shall have a rated capacity of 600 lb. distributed load and have 100% extension capability. A mechanical lock assembly shall be provided to lock the tray in the extended or retracted position. The tray shall be constructed of 3/16" aluminum sheet with 3" lips and shall have an abraded finish. The tray roller assembly shall have a powder coated finish for added corrosion protection. Shop Note: The tray shall be half the width of the compartment. Final width determination shall be at the pre-construction meeting.

#### COMPARTMENT R5

There shall be a lower compartment located behind the tandem axle rear wheels on the right side of the apparatus body. This compartment shall be designated as R5 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening 28.00" wide x 26.00" high

- Usable Depth 24.75"

There shall be a one (1) vertically hinged lap type compartment door installed on the compartment face. The lap door shall be a double panel construction with the outer panel fabricated of .190" 3003-H14 aluminum and the inner panel of .125" 3003-H14 aluminum. There shall be rubber molding installed in the overlap area of the door to insure a weatherproof seal and prevent water from collecting in the door sills. Weep holes shall be installed at the bottom of the doors to drain moisture from between the door panels. The compartment door shall have a polished stainless steel continuous hinge with a rubber seal installed between the hinge and the aluminum door to separate the dissimilar metals. The hinge pin shall be stainless steel with a minimum diameter of 1/4".

The compartment door handle shall be a non-locking stainless steel recessed "D" ring type handle. There shall be a safety latch with striker plate included with the door handle assembly.

There shall be one (1) Cleveland-style spring loaded door holder furnished on the compartment door to hold the door in either the fully open or partially closed position. The spring-loaded door holder shall close the door automatically when it is positioned past center or return the door to the fully open position if the center point is not reached and the door is released. On compartments having double doors, the secondary door shall have a latch mechanism to secure the door when the primary door is opened.

The compartment shall have two (2), 9" On-Scene LED Night Axes installed. Each light shall be enclosed within a tough waterproof Lexan tube enclosure. Each Night Axe shall offer 74 lumens per 18" of light and an adjustable beam angle. There shall be one (1) application in the compartment that shall utilize Dri-Dek interlocking squares. Each square shall be made from polyvinyl chloride that is flame and chemical resistant. For maximum slip resistance and drainage, each square shall have a knobby perforated surface.

**141** **REAR BODY CONFIGURATION**

COMPARTMENT T1

There shall be a full height compartment located at the rear of the apparatus body. This compartment shall be designated as T1 within these specifications and any ensuing paperwork or drawings after contract execution.

- Door Opening 33.00" wide x 36.00" high

- Usable Depth 29.00"

There shall be one (1) ROM rollup door installed on the compartment face. The door shall be a shutter type with 34 millimeter slats that roll onto a spool at the top of the compartment. Each slat shall be equipped with nylon end shoes to assure operation without the need of constant lubrication. The rollup door shall have a satin finish.

The ROM rollup door shall be supplied with a full width lift bar and finger pull handle integrated into the bottom rail for easy one hand operation.

The compartment shall have two (2), 18" On-Scene LED Night Axes installed. Each light shall be enclosed within a tough waterproof Lexan tube enclosure. Each Night Axe shall offer 74 lumens per 18" of light and an adjustable beam angle.

**142** **COMPARTMENT AIR RELEASE**

Each compartment shall be vented to help remove trapped air when closing a compartment door. The vent shall be a rubber gasket in the area of the outboard corners of the compartment. Wiring may also be run through these areas.

**143** **COMPARTMENT DRAIN HOLES**

Each body compartment shall be equipped with drain holes to allow standing water to exit to underneath the apparatus.

There shall be an anodized aluminum angle sill protector installed on the bottom sill area of the compartments on the body to aid in reducing paint damage from equipment. The sill protectors shall be attached using permanent-bonding double-sided tape.

**144** **WALKWAYS AND OVERLAYS**

All exterior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be overlaid with 3003 H22 Bright Tread Plate to provide a slip resistant surface, even when the surface is wet. All interior surfaces designated by the manufacturer as stepping, standing, or walking areas shall be slip resistant when the surface is dry. The degree of slip resistance shall be in compliance with the intent of NFPA 1901.

Horizontal walkways shall have .080" aluminum tread plate overlays installed and vertical surfaces shall have .125" aluminum overlays. Overlays shall be installed that are totally insulated from the apparatus with nylon shoulder washers that extend into holes in the body. Stainless steel cap nuts shall be employed where bolt ends may damage equipment or cause injury. After the apparatus is painted and the overlays are reinstalled, they shall be additionally sealed at the edges with a caulking compound. The exterior top tread plate overlay shall be mounted flush with the outer edges of the apparatus body.

**145** **STEPPING SURFACES**

All steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of at least 500 pounds. Steps shall be provided at any area that personnel may need to climb and shall be adequately lighted.



**146 REAR DECK**

A modular bolt-on deck shall be installed on the rear of the apparatus to form a full width step area. The rear deck shall be constructed of anti-slip bright tread plate. The outside edge of the rear deck shall be flush with the rub rail that is installed on the body to maintain a uniform appearance. The depth of the rear deck shall be 13.25". The rear deck shall be installed with sufficient support to form a sturdy, non-deflecting step area for personnel.

**147 REAR STEPS**

There shall be three (3) Cast Products bolt-on steps installed on the rear of the apparatus. Each step shall have large open slots to prevent buildup of ice or mud and to provide a handhold when necessary. Steps shall be provided in the following locations:

- Three (3) bolt-on steps on the right rear of the apparatus.

The steps shall be adequately lit with LED lighting. There shall be one (1) light located above the set of steps on the rear face of the body. The light shall be located in a manner that shall light all of the steps.

**148 FRONT BODY STEPS AND LIGHTING**

There shall be two (2) Cast Products folding steps located on the front of the left side body compartments. The folding steps shall have two large open slots to prevent the buildup of ice or mud and to provide a handhold when necessary.

The steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of 500 pounds.

The steps shall be adequately lit with LED lighting. There shall be one (1) light located above the steps.

**149 FRONT BODY STEPS AND LIGHTING**

There shall be four (4) Cast Products folding steps located on the front of the right side body compartments. The folding steps shall have two large open slots to prevent the buildup of ice or mud and to provide a handhold when necessary.

The steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of 500 pounds.

The steps shall be adequately lit with LED lighting. There shall be one (1) light located above the steps.

**150 FRONT VERTICAL AREA TREAD PLATE OVERLAYS**

There shall be a tread plate overlay on the vertical areas of each side of the apparatus body. The overlay will be located in front of the L1 and R1 compartments.

**151 REAR WHEEL WELLS**

The fenders shall be integral with the body sides and compartments with a seamless appearance. The fenders shall be fitted with bolt-in removable full circular inner liners in the wheel well area for ease of cleaning and maintenance. There shall be sufficient clearance provided in the wheel well to allow the use of tire chains when the apparatus is fully loaded.

**152 STAINLESS STEEL REAR FENDERETTES**

Four (4) stainless steel fenderettes shall be installed at the outboard edge of the rear wheel well area, two on each side. The fenderettes shall be bolted to the apparatus body using nylon washers to space them slightly away from the body to reduce build-up of road grime. The fenderettes shall be constructed of stainless steel that has been polished to a high quality finish.

**153 BODY RUB RAILS**

Rub rails shall be installed beneath the compartment doors to protect them from damage should the body be brushed or rubbed against another object. The rub rails shall be 3/16" aluminum channel, 2-1/2" x 1". The rub rails shall be highly polished and then bright dip anodized.

The rub rails shall be installed on the body utilizing non-corrosive nylon spacers and secured with stainless steel bolts. The outside edge of the rub rails shall be even with the fenderettes and bolt-on steps to prevent snagging.

**154 REAR TOW HOOK**

One (1) rear tow hook shall be installed directly below the rear of the chassis frame rails. The tow hook shall be capable of a 15,000 lb. straight pull rating.

**155 HOSE BED**

The hose bed shall be located above the water tank and have a minimum capacity of 30 cubic feet in accordance with the latest NFPA regulations. The inside of the hose bed shall be smooth aluminum. The hose bed shall exit at the rear of the apparatus through a single access opening. The opening shall be free of obstructions that might interfere with the deployment and loading of hose. The floor of the hose bed compartment shall be constructed of Dura-Dek fiber reinforced plastic material. The flooring shall be fabricated of "T" beam pultrusions in parallel connected with cross slats that are first mechanically bonded and then epoxied, forming a large sheet. The top portion of each "T" cross section shall measure 1-1/4" wide and 3/16" thick with beaded ends. The vertical portion shall be 3/8" thick, beading out at the bottom to a thickness of 1/2" and tall enough to result in an overall height of 1". The "T" sections shall be spaced 3/4" apart to allow for drainage and ventilation.

Each "T" beam shall be constructed utilizing a core of 250,000 continuous glass fiber strands that are high in resistance to tension, compression and bending. An outer sheath consisting of a continuous strand mat to prevent lineal splitting and slipping shall surround the core. The sheath shall also serve to draw the protective resin to the bar surface. Both reinforcements shall be pulled through an isophthalic polyester resin, treated with antimony trioxide for fire resistance, to form a solid length.

The flooring shall then be protected with a polyurethane coating to screen out ultraviolet rays. This bright white coating shall be baked on and shall provide a pleasing contrast when installed in the apparatus.

The interior of the hose bed shall be painted the primary body color.

**HOSE BED COVER**

There shall be a heavy-duty 22 oz. hypalon vinyl coated nylon hose bed cover installed on the apparatus. The front edge of the cover shall be retained in a "C" channel to prevent wind from lifting it. The sides of the cover shall be attached to the sides of the hose bed utilizing hooks and bungee cord. The rear of the cover shall be connected using footman loop and J-Hooks with an adjustable buckle. The color of the vinyl restraint shall be black.

**HOSE BED DIVIDER**

There shall be one (1) hose bed divider installed in the hose bed. The divider shall be fabricated from 1/4" smooth aluminum plate and an aluminum extrusion. The divider shall have an abraded finish and mounted on hot-dipped galvanized slide

rails at the front and rear of the hose bed. Where no obstruction such as a fill tower is present, the slide rails shall allow full movement of the divider along the width of the hose bed. The hose bed divider shall have an oval shaped hand hold slot to assist in moving the divider. This shall provide the capability for variable hose load configurations and capacities.

**HOSE BED CAPACITY**

The hose bed shall have a capacity of 64 ft<sup>3</sup>.

**156 GROUND LADDER STORAGE**

The ground ladders shall be stored above the left low side compartments with brackets that provide a quick method of removing and reloading the ladders. A quick release shall allow personnel to loosen and unhook the retaining strap in order to remove the ladders, a ratchet style mechanism shall securely and easily fasten the ladders back into place. The bracket shall allow a sectional ladder to still be clamped into position when the roof ladder has been removed.

The following ground ladders shall be supplied with the apparatus:

One (1), Duo Safety model 900-A 24' two section aluminum extension ladder shall be provided. The ladder shall be constructed with 6061-T6 aluminum alloy and shall have a 750 pound duty rating. The ladder shall have a closed length of 14' 2.75".

**157 PIKE POLE STORAGE**

There shall be two (2) aluminum tubes for the storage of pike poles above the low side compartments.

The following pike poles shall be supplied with the apparatus: \_\_\_\_\_

**158 HARD SUCTION HOSE RACK ABOVE SIDE COMPARTMENTS**

There shall be a hard suction hose rack above each of the side compartments. Capacity shall be provided to store two (2) sections of hard suction hose, one (1) on each side. The suction hose rack shall have an abraded finish.

The suction hose storage shall be located above the left side compartments.

**159 HANDRAILS**

All handrails, unless otherwise stated, shall be constructed of knurled aluminum of not less than 1-1/4" in diameter. All railing shields and brackets shall be chrome plated, and shall be bolted to the body with stainless steel bolts. The lower bracket on all vertical handrails shall have a drain hole drilled in it at the lowest point.

The following handrails shall be provided on the apparatus:

There shall be a vertical handrail installed at the left rear of the apparatus.

There shall be a vertical handrail installed on the right rear of the apparatus.

There shall be a horizontal handrail installed above the rear compartment below the hose bed.

**160 LICENSE PLATE BRACKET**

There shall be a license plate bracket mounted on the rear of the apparatus. A clear LED light shall be incorporated into the bracket.

**161 FULL WIDTH HOSE BED STEP**

There shall be a full width tread plate step located above the rear compartment door. The step shall be used to assist in reloading the hose bed. The step shall also include hand-holds in the rear of the step to be used when climbing the rear of the truck.

**162 QL-12 ELECTRICAL SYSTEM**

Wiring harnesses shall be the automotive type, engineered specifically for the builder's apparatus, and shall meet the following criteria. Under no circumstances shall diodes, resistors, or fusible links be located within the wiring

harness. All such components shall be located in an easy to access wiring junction box or the main circuit breaker area. All wiring shall meet white book, baseline advanced design transit coach specification and Society of Automotive Engineers recommended practices. It shall be stranded copper wire core with cross linked polyethylene insulation complying with SAE specification J1128. Each wire shall be hot stamp function coded every three inches starting one inch from the end and continuing throughout the entire harness. In addition to function coding, each wire shall be number, color, and gauge coded.

Wire harnesses shall be wrapped with a high abrasion and chemical resistant thermoplastic polyester elastomer coated polyester yarn for braiding constructions of electrical wiring systems. The braid yarn shall have a minimum tensile strength of 15 lbs. before breaking and have a maximum of 20% elongation before breaking. Temperature properties for the yarn shall range from a minimum 280°F (138°C) service temperature to a maximum -112°F (-80°C) brittleness temperature with a cold flex tolerance of at least -49°F (-45°C).

Harnesses shall be modular in design; a main harness system subdivided into several smaller sub-harnesses. The harness subsections shall be connected using Deutsch branded, heavy duty, environmentally sealed, connectors with silicone seals and a rear insertion/removal contact system. For isolation of electrical "zones" the harness subsections shall consist of a main harness, a pump harness with a separate pump gauge panel harness, a left body harness with a separate left compartment harness, a right body harness with a separate right compartment harness, and a rear body harness with two separate rear compartment harnesses.

The main harness and three body harnesses shall interconnect at a central, easy to reach location and their connectors shall not be obstructed by other harnesses or fuel/air lines. In addition, the main and body harness connectors shall be color coded for ease of identification with their respective colors noted on the accompanying electrical diagrams.

Where connectors are not provided by the electrical component manufacturer, all 12 volt lights and other electrical components (excluding rocker and toggle switches) shall connect to the harnesses using Deutsch brand connectors; butt connectors are considered unacceptable.

All Deutsch connectors shall meet the following criteria:

- All connectors shall have a minimum IP67 rating.
- Temperature range from -67°F (-55°C) to 257°F (125°C) continuous at rated current.
- Only solid contacts will be used. Stamped and formed contacts are unacceptable.
- All contacts shall be soldered unless a crimping tool or machine is used that gives an even and precise pressure for the terminal being used.
- All contacts shall be pull-tested to insure their integrity.
- All contacts shall be assembled with die-electric grease

163 V-MUX  
ELECTRICAL  
MANAGEMENT  
SYSTEM

The apparatus shall be equipped with a V-MUX Multiplex System. There are several key benefits to multiplexing, one is to reduce the number of connections in a vehicles electrical system, because of this it is important to limit the amount of modules that control certain functions of the vehicle.

Outputs:

The outputs shall perform all the following items without added modules to perform any of the tasks:

1. Load Shedding: The System shall have the capability to Load Shed with 8 levels any output. This means you can specify which outputs (barring NFPA restrictions) you would like Load Shed. Level 1 12.9v, Level 2 12.5V, Level 3 - 12.1V, Level 4 - 11.7V, Level 5 11.3V, Level 6 10.9V, Level 7 10.5, Level 8 10.1. Unlike conventional load shedding devices you can assign a level to any or all outputs. No add-on modules shall be acceptable; the module with the outputs must perform this function.

2. Load Sequencing: The System shall be able to sequence from 0 8 levels any output. With 0 being no delay and 1 being a 1 second delay, 2 being a 2 second delay and so on. Sequencing reduces the amount of voltage spikes and drops on your vehicle, and can help limit damage to your charging system. No add-on modules shall be acceptable; the module with the outputs must perform this function.

3. Output Device: The System shall have solid-state output devices. Each solid-state output shall be a MOS-FET (Metal Oxide Semiconductor - Field Effect Transistors); MOS-FETs are solid-state devices with no moving parts to wear out. A typical relay when loaded to spec has a life of 100,000 cycles. The life of a FET is more than 100 times that of a relay. No add-on modules shall be acceptable; the module with the outputs must perform this function.

4. Flashing Outputs: The System shall be able to flash any output in either A or B phase, and logic is used to shut down needed outputs in park, or any one of several combined interlocks. The flash rate can be selected at either 80, or 160 FPM. This means any light can be specified with a multiplex truck with no need to add flashers. Flashing outputs can also be used to warn of problems. No add-on modules shall be acceptable; the module with the outputs must perform this function.

5. PWM: The modules shall have the ability to PWM at some outputs so that a Headlight PWM module is not needed. No add-on modules shall be acceptable; the module with the outputs must perform this function.

6. Diagnostics: An output shall be able to detect either a short or open circuit.

Inputs:

1. The inputs shall have the ability to switch by a ground or battery signal.

2. The inputs shall be filtered for noise suppression via hardware and software so that RF or dirty power will not trick an input into changing its status.

System Network:

The Multiplex system shall contain a Peer-to-Peer network. A Master Slave Type

network is not suitable for the Fire/Rescue industry. A Peer-to-Peer network means that all the modules are equal on the network; a Master is not needed to tell other nodes when to talk.

System Reliability:

The Multiplex system shall be able to perform in extreme temperature conditions, from -40° to +85° C (-40° to +185° F.) The system shall be sealed against the environment, moisture, humidity, salt or fluids such as diesel fuel, motor oil or brake fluid. The enclosures shall be rugged to withstand being mounted in various locations or compartments around the vehicle. The modules shall be protected from over voltage and reverse polarity.

**164 WEATHERPROOF DOOR SWITCHES**

Due the harsh environment and susceptibility to moisture on the fire ground, the fire apparatus compartment doors shall utilize weatherproof switches. Two different types of switches shall be used. Weatherproof proximity switches shall be utilized where space permits. In tight locations, mechanical weatherproof switches shall be used. **No Exceptions.** The switches shall be used for activation of the compartment lights and to provide a signal to the door open circuit in the cab.

**165 ELECTRICAL TERMINALS**

All electrical terminals that are not grounded shall have a protective covers or be in an enclosure.

**166 TAIL LIGHTS**

There shall be a Federal Signal QuadraFlare model QL64Z4V LED tail light assembly installed on each side of the rear of the apparatus. Each assembly shall include one (1) red LED stop/tail/turn light model number QL64Z-BTT, one (1) amber LED turn light with arrow model QL64Z-ARROW, one (1) clear LED backup light model QL64Z-BACKUP, and one (1) warning light model QL64XF-R. The lights shall be mounted in a chrome bezel.

**167 MIDSHIP TURN SIGNALS**

There shall be two (2) Truck-Lite model 21 LED midship auxiliary/turn signal lights installed. One (1) light shall be located in the rub rail on each side of the body.

**BODY GROUND LIGHTING**

There shall be four (4) Grote White 4" round, LED lights model 61E41 installed beneath the apparatus in areas where personnel may be expected to climb on and off of the apparatus. The lights shall illuminate the ground within 30" of the apparatus to provide visibility of any obstructions or hazards. These areas shall include, but shall not be limited to, side running boards and the rear step area. There shall be four (4) aluminum ground light brackets provided to position each ground light so as to illuminate the ground within 30" of the apparatus.

**168 CLEARANCE LIGHTS**

Grote model 65282 red LED clearance lights shall be installed in the rear tailboard as necessary to be in full compliance with applicable ICC and DOT codes and regulations. Clearance reflectors shall be placed on the apparatus to be in full compliance with applicable ICC and DOT codes and regulations.

**169 HOSE BED LOADING LIGHTS**

There shall be two (2) Unity, model AG-R hose bed loading lights provided on the rear of the apparatus. Each light shall be a 6" round light in a chrome housing. The hose bed lighting circuit shall be deactivated when the park brake is disengaged. Each light shall include a switch at the lighthouse.

- 170** REAR WORK LIGHT SWITCH A switch shall be installed above the tail light bezel on the left side of the rear of the apparatus. The switch shall be wired to the backup lights to provide additional work lighting. The rear work light circuit shall be deactivated when the park brake is disengaged. In addition to the lights being activated by the above switch, the lights shall also come on when the transmission is placed in reverse.
- 171** UPPER ZONE A There shall be one (1) Federal Signal Corporation JetSolaris 54" model J LX5401-NFPA Solaris LED lightbar permanently mounted to the cab roof. The lightbar shall include eight (8) forward facing large Solaris reflectors, three (3) side facing small Solaris reflectors, and no rear facing lights.
- 172** GTT OPTICOM All clear lights shall shut down when the parking brake is set to comply with "Blocking" mode requirements as outlined in NFPA 1901. A GTT 795H Opticom emitter light shall be provided on cab roof. The Opticom shall be activated with light bar and de-activated when the park brake is set and the vehicle is in blocking mode.
- 173** UPPER ZONE C There shall be two (2) Federal Signal, model IVP SLR rotating beacons installed high at the rear of the apparatus. Each light shall have red LEDs and red domes. There shall be two (2) stanchion brackets provided.
- 174** LOWER ZONE A There shall be two (2) Federal Signal, model IPX623-RW IMPAXX LED warning lights installed. Each light shall have dual LED colors alternating red and white. The white LEDs will not flash when the parking brake is set.
- 175** GRILLE LIGHT LED There will be one (1) Federal Signal, QL73XFC-C LED light installed on the front of the cab. The LED light will be wired in such a manner as to be disabled when the parking brake is set.
- 176** LOWER ZONE B Locate either on or above the front grille. There shall be three (3) Federal Signal, model QL64XF-R QuadraFlare LED warning lights installed. Each light shall have red LEDs and a red lens.
- 177** LOWER ZONE C There shall be two (2) Federal Signal, model QL64XF-R QuadraFlare LED warning lights installed. Each light shall have red LEDs and a red lens.
- 178** LOWER ZONE D There shall be three (3) Federal Signal, model QL64XF-R QuadraFlare LED warning lights installed. Each light shall have red LEDs and a red lens.
- 179** TRAFFIC DIRECTIONAL LIGHT There shall be one (1) Federal Signal VPX SignalMaster 320882 LED traffic directional light installed on the apparatus. The light shall include eight (8) individually sealed LED modules with wide angle lenses. The traffic directional light shall be recess mounted in the rear of the body. There shall be one (1) controller included with the Federal Signal traffic directional light. The heavy duty, deluxe controller shall be equipped with a slide switch, multiple selectable flash patterns, heavy-duty ground, fuse protection, and shall be able to control two (2) halogen SignalMaster traffic directional lights simultaneously. The controller shall be installed in the cab.

**180** WHELEN 12V RECESSED LIGHT

There shall be one (1) Whelen, model PFA1, Pioneer™ Super-LED® light in a semi-recessed mount installed on the apparatus.

The light shall be a Whelen Single Panel Pioneer™, model PFA1 Super-LED® floodlight. The rectangular extruded light fixture with die cast end caps shall measure 8-3/16" wide by 4-1/4" high by 2-7/8" deep and have a white powder coat finish. The light fixture shall have a single panel of (2) horizontal clusters of LED lamps with a molded vacuum metalized reflector that draws 3 amps at 12 Vdc. The light shall have the Whelen HDP® Heavy-Duty Professional five-year warranty.

The light shall be complete with one (1) Whelen, model PBA103, semi-recessed mount with a chrome flange. The light shall be set at a 15° downward angle. The 12 volt front scene light shall be controlled by one (1) switch located in the chassis cab and one (1) located at the pump panel. Each switch shall have an indicator that shall illuminate when the switch is in the "ON" position. The light shall be controlled by one (1) switch at each location. Each switch shall be labeled "LEFT SCENE."

**181** 12 VOLT LED LIGHTS

The 12 volt scene light shall be located on the left side of the apparatus body. There shall be two (2) Whelen, model 9SCOENZR, 900 Series LED Opti-Scene lights with 8-32 degree optics installed on the apparatus. Each light shall be surface mounted and installed in a chrome flange.

The 12 volt rear scene light shall be controlled by a switch located in the chassis cab. The switch shall have an indicator that shall illuminate when the switch is in the "ON" position. The light shall be controlled by one (1) switch. The switch shall be labeled "REAR SCENE."

In addition to the switch located in the cab, the 12 volt rear scene light shall be activated by the rear work light switch and when the apparatus is placed in reverse.

**182** WHELEN 12V RECESSED LIGHT

The 12 volt scene light shall be located on the rear of the apparatus body.

There shall be one (1) Whelen, model PFA1, Pioneer™ Super-LED® light in a semi-recessed mount installed on the apparatus.

The light shall be a Whelen Single Panel Pioneer™, model PFA1 Super-LED® floodlight. The rectangular extruded light fixture with die cast end caps shall measure 8-3/16" wide by 4-1/4" high by 2-7/8" deep and have a white powder coat finish. The light fixture shall have a single panel of (2) horizontal clusters of LED lamps with a molded vacuum metalized reflector that draws 3 amps at 12 Vdc. The light shall have the Whelen HDP® Heavy-Duty Professional five-year warranty.

The light shall be complete with one (1) Whelen, model PBA103, semi-recessed mount with a chrome flange. The light shall be set at a 15° downward angle. The 12 volt front scene light shall be controlled by one (1) switch located in the chassis cab and one (1) located at the pump panel. Each switch shall have an indicator that shall illuminate when the switch is in the "ON" position. The light shall be controlled by one (1) switch at each location. Each switch shall be labeled "RIGHT SCENE."



**183** **FRONT SCENE LIGHTS**

The 12 volt scene light shall be located on the right side of the apparatus body.

The front of the cab shall include one (1) Whelen model Pioneer PFP1 contour roof mount scene light installed on the brow of the cab. The lamp head shall a single 12 volt high intensity LED panel. The lamp head shall draw 6.0 amps and generate 7,000 lumens total. The lamp head shall be 4.25 inches in height X 6.18 inches in width and shall be adjustable to a 20-degree downward angle within the brow mount brackets. The lamp head and brackets shall be powder coated white.

**184** **FRONT SCENE LIGHT LOCATION**

There shall be one (1) scene light mounted center on the front brow of the cab.

**185** **FRONT SCENE LIGHTS ACTIVATION**

The front scene lighting shall be activated by a virtual button on the Vista display and control screen.

**186** **BODY PAINT PREPARATION**

After the body and components have been fabricated and assembled they then shall be disassembled prior to painting so when the apparatus is completed there shall be finish paint beneath the removable components. The apparatus body and components shall be metal finished as follows to provide a superior substrate for painting.

All aluminum sections of the body shall undergo a thorough cleaning process starting with a phosphoric acid solution to begin the etching process followed by a complete rinse. The next step shall consist of a chemical conversion coating applied to seal the metal substrate and become part of the aluminum surface for greater film adhesion.

After the cleaning process, the body and its components shall be primed with a High Solids primer and the seams be caulked.

All bright metal fittings, if unavailable in stainless steel or polished aluminum, shall be heavily chrome plated. Iron fittings shall be copper under plated prior to chrome plating.

**187** **PAINT PROCESS**

The paint process shall follow the strict standards as set forth by PPG Fleet Finish Guidelines.

The body shall go through a three-stage paint process: primer coat, base coat (color), and clear coat. In the first stage of the paint process the body shall be coated with PPG F3980 Low VOC / High Solids primer to achieve a total thickness of 2-4 mills. In the second stage of the paint process the body shall be painted with PPG FBCH Delfleet™ High Solids Polyurethane Base Coat. A minimum of two to three coats of paint shall be applied to achieve hiding. In the final stage of the paint process the body shall be painted with PPG DCU-2002 Clear Coat. A minimum of two to three coats shall be applied to achieve a total dry film thickness of 2-3 mills.

As part of the curing process the painted body shall go through a Force Dry / Bake Cycle process. The painted components shall be baked at 185 degrees for 3 hours to achieve a complete coating cure on the finished product.

**188 HAND POLISHED**

After the Force Dry / Bake Cycle and ample cool down time, the coated surface shall be sanded using 3M 1000, 1200, and or 1500 grit sandpaper to remove surface defects. In the final step, the surface shall be buffed with 3M super-duty compound to add extra shine to coated surface. No more than .5 mil of clear shall be removed in this process.

**189 BODY COLOR**

The body shall be painted with PPG High Solids Polyurethane Base Coat. The body shall be painted (RED) PPG# FBCH-75380

**190 UNDERCOATING**

The apparatus shall undergo a two (2) step undercoating process. The first step shall be a rubberized polyurethane base compound that is applied after the body has been primed. The materials used incorporate unused paint products to reduce the amount of waste released into the environment. This coat shall be applied to all hidden pockets and surfaces that shall not be visible after completion.

As a final step, the entire underside of the body shall be coated with a bituminous based automotive type undercoating when the apparatus is completed. During this application, special care shall be taken to avoid spraying the product on air lines, cables, or other items that would cause normal maintenance to be hindered.

**191 COMPARTMENT COATING**

The interior of the body compartment shall be coated with gray S-Coat™. thermoplastic polyurethane coating. The coating shall be durable enough to withstand every day abuse of equipment removal and shifting.

**192** **S-COAT™**  
**THERMOSET**  
**COATING**

S-Coat™, a 100% solids, state-of-the art, VOC-free, plural-component, pure polyurea elastomeric membrane. This seamless system exhibits extraordinary performance characteristics. S-Coat™ is based on amine-terminated polyether resins, amine chain extenders and MDI pre-polymers. This membrane achieves an extremely tough, flexible, chemical and abuse resistant finish. S-Coat™ shall be used in specified areas for maximum protection of the body and equipment. The coating shall exhibit the following minimum typical physical properties:

- Tensile strength, psi (ASTM D-638) 2500
- Elongation, % (ASTM D-638) 250
- Tear Strength, pli (ASTM D-624) 450
- Shore D Hardness (ASTM D-2240) 51
- Moisture Vapor Transmission, (ASTM E-96)
  - i. (Perms @ 30 dry mils) 0.02
- Abrasion Resistance, mg (ASTM D-4080)
  - i. (1000 g, 1000 rev, H-15) 230
  - ii. (1000 g, 1000 rev, cs 17) 6
- 100 Modulus, psi (ASTM D-638) 1600-2100
- Flash Point >200°F
- Flame Spread (ASTM E-108) Class A
- Flexibility Testing, in-lbs. (ASTM D-2794) >160
- Mandrel Bend
  - i. Conical Bend (on 1/32" steel panels, ASTM D-522) Pass
  - ii. ¼" Mandrel 25° C, free film 30 –50, ASTM D-1737 Pass
  - iii. ¼" Mandrel, -20° C, free film 35 – 50, ASTM D-1737 Pass

Advantages of the S-Coat™ system are:

1. Textured finish
2. Higher elongation; greater flexibility
3. Almost instant gel time
4. Fast cure; can be handled/walked on in one minute
5. Can be built up to any thickness in one application
6. Seamless
7. Application at –20° F to 300° F
8. Resistant to thermal shock
9. No VOC's
10. Resistant to many chemicals
11. Fungus resistant
12. Ozone resistant

**193** **TOUCH UP PAINT**

One (1) two ounce bottle of acrylic enamel touch-up paint or two (2) touch up paint pens for each color, if color is available, shall be supplied.

**194** **CORROSION**  
**PREVENTION**

One (1) 3.75 ounce tube of Electrolysis Corrosion Kontrol (ECK) shall be provided to use whenever additional items are mounted to the apparatus.

ECK protects aluminum and stainless steel against electrolytic reaction, isolates dissimilar metals and gives bedding protection for hardware and fasteners. ECK contains anti-seizing lubricant for threads. ECK is dielectric and perfect for use

- with electrical connectors.
- 195 NFPA COMPLIANT REFLECTIVE STRIPING** Reflective striping shall be applied to the exterior of the apparatus in a manner consistent with NFPA 1901. It shall consist of a straight, 4" wide stripe along the front of the chassis and along the sides, staying below the tops of the wheel well areas.
- 196 REFLECTIVE STRIPING SIDE OF CHASSIS** The NFPA reflective stripe located on the side of the chassis cab shall be located on the bottom of the doors each side.  
The color of the main reflective striping on the apparatus shall be white.
- 197 RUB RAIL REFLECTIVE STRIPING** There shall be 2" reflective striping installed in the rub rail channel. The reflective striping shall be diamond grade quality material for increased visibility. The reflective shall be silver in color.
- 198 CAB DOOR REFLECTIVE STRIPING** A minimum of 96 sq. in. of white reflective striping shall be applied to the interior of each cab door.
- 199 CHEVRON REFLECTIVE STRIPING ON REAR** In addition to the custom striping pattern supplied on the apparatus, there shall be additional reflective striping applied to the entire rear of the unit. The reflective striping shall cover at least 50% of the rear facing vertical surface per NFPA 1901. The striping shall consist of alternating reflective stripes. Each stripe shall be a minimum of 6" in width and shall be applied to the apparatus at 45° angle.  
The chevron pattern shall include the any other painted storage compartment doors. The T1 Compartment shall be excluded from the chevron pattern.  
**CHEVRON REFLECTIVE STRIPING, RED/FLUORESCENT YELLOW-GREEN**  
The chevron striping shall consist of 3M part numbers 1172 EC, red and 3983, fluorescent yellow-green.  
Only 3M Diamond Grade™ VIP Reflective Striping shall be used. 3M Diamond Grade™ VIP Reflective Striping is a wide angle prismatic lens reflective sheeting designed for the production of durable traffic control signs and delineators that are exposed vertically in service. This sheeting is designed to provide higher sign brightness than sheetings that use glass bead lenses. It is intended to also provide high sign brightness in the legibility distance where other sheetings do not.
- 200 REFLECTIVE LETTERING** There shall be forty two (42) reflective letters provided and installed on the apparatus. The letters shall be approximately 4" tall with black outline and shadow.
- 201 REAR STEP SIGNAL SYSTEM** A rear step buzzer system will be installed. It will consist of two (2) weather proof buttons at the rear step area, one each side, with a label reading "1-STOP, 2-GO, 3-BACK UP", and a buzzer in the cab that is activated by the rear step switch.
- 202 PINCH POINT CROW BAR BRACKET** Supply one (1) Akron PPBH, raised mount, pinch point bar holder set. Ship loose.
- 203 WHEEL COVERS** No wheel or nut covers

**204** **CHASSIS**  
**FAMILIARIZATION**  
**CLASS**

On initial delivery of the apparatus, the Manufacturer shall supply a qualified representative to demonstrate the apparatus and provide initial instruction to representatives of the Surrey Fire Service regarding the operation, care, and maintenance of the apparatus and equipment supplied at the Surrey Fire Service location. The class concludes with the sharing of technical information on CD and time for questions and answers.

**- END OF PAGE -**



**SCHEDULE B  
FORM OF QUOTATION**

RFQ Title: SUPPLY AND DELIVERY OF ONE (OR MORE) 2000 IMP GAL TANKER TRUCK

RFQ No: 1220-040-2014-037

**CONTRACTOR**

Legal Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

**CITY OF SURREY**

City's Representative: Richard Oppelt  
*Purchasing Manager*

Address: 13450-104 Ave., Surrey, BC V3T 1V8

Email for PDF Files: [purchasing@surrey.ca](mailto:purchasing@surrey.ca)

Phone: 604 590-7274

**1. PRICING**

The Contractor offers to supply to the City of Surrey the Goods for the prices plus applicable taxes as follows:

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

All costs to meet the minimum specifications shall be included in the following delivered prices.

UNIT PRICE: \$ \_\_\_\_\_ X 1 \$ \_\_\_\_\_

ENVIRONMENTAL LEVY [BATTERY]: \$ \_\_\_\_\_ X 1 \$ \_\_\_\_\_

TIRE STEWARDSHIP B.C. (TSBC) LEVY: \$ \_\_\_\_\_ X 1 \$ \_\_\_\_\_

SUB-TOTAL: \$ \_\_\_\_\_

GST: 5% on \$ \_\_\_\_\_ = \$ \_\_\_\_\_

PST: 7% on \$ \_\_\_\_\_ = \$ \_\_\_\_\_

**TOTAL QUOTED PRICE:** \$ \_\_\_\_\_

The completed unit shall be delivered within \_\_\_\_\_ days after receipt of purchase order.

**Unit price if purchasing 2 Trucks**

Unit Price \$ \_\_\_\_\_ X2 = \$ \_\_\_\_\_

**Unit price if purchasing 3 Trucks**

Unit Price \$ \_\_\_\_\_ X3 = \$ \_\_\_\_\_

**3. WARRANTY INFORMATION**

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

Please complete if applicable: British Columbia Certified

Note: Contractor is to submit all detailed warranty information as an appendix to this Quotation.

**OPTIONAL EXTENDED WARRANTY**

The Contractor is to provide costing and details for any extended warranty offered (if any).

The City reserves the rights to exercise any of the prices listed below.

**Description and Pricing for Extended Warranty**

**Price**

Extended Warranty of \_\_\_\_\_ years. \$ [       ]

Description: \_\_\_\_\_  
\_\_\_\_\_

**2. PAYMENT TERMS**

A cash discount of \_\_\_\_\_ % will be allowed if the invoice is paid within \_\_\_\_\_ days, or the \_\_\_\_\_ day of the month following, or net 30 days, on a best effort basis.

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## SCHEDULE B – APPENDIX A TECHNICAL SPECIFICATIONS WORKSHEET

### TECHNICAL SPECIFICATIONS

The specification herein states the minimum requirements of the City of Surrey. All Quotations must be regular in every respect. Unauthorized conditions, limitations, or provisions shall be cause for rejection. The City of Surrey will consider as "irregular" or "non-responsive" any Quotation not prepared and submitted in accordance with the RFQ document and specification, or any Quotation lacking sufficient technical literature to enable the City to make a reasonable determination of compliance to the specification.

It shall be the Contractor's responsibility to carefully examine each item of the specification. Failure to offer a completed Quotation or failure to respond to each section of the technical specification will cause the Quotation to be rejected without review as "non-responsive". All variances, exceptions and/or deviations shall be fully described in the appropriate section.

Note: Contractors are directed to list complete manufacturers' details of model proposed in the right-side column under manufacturers' specifications

**For greater detail, please refer to the corresponding numbered specification in Schedule A-1 – Technical Specifications**

	Minimum Specifications	√ (Yes)	√ (No)	Manufacturers' Specifications of Equipment Offered. Contractor shall complete all spaces in this column.
1	<u>STATE WARRANTIES</u>	<input type="checkbox"/>	<input type="checkbox"/>	Cab Basic: _____ Cab Paint: _____ Frame Rails: _____ Body Basic: _____ Body & Structural Integrity: _____ Body Paint Warranty: _____ Body Corrosion Warranty: _____
2	<u>OVERALL HEIGHT</u>	<input type="checkbox"/>	<input type="checkbox"/>	STATE: _____
3	<u>OVERALL LENGTH</u>	<input type="checkbox"/>	<input type="checkbox"/>	STATE: _____
4	<u>CHASSIS WHEELBASE</u>	<input type="checkbox"/>	<input type="checkbox"/>	STATE: _____
5	<u>TURNING RADIUS</u>	<input type="checkbox"/>	<input type="checkbox"/>	STATE: _____
6	<u>CAB AND CHASSIS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
7	<u>FRAME</u>	<input type="checkbox"/>	<input type="checkbox"/>	
8	<u>PAINT FRAME AND CHASSIS UNDER CARRIAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
9	<u>FUEL TANK</u>	<input type="checkbox"/>	<input type="checkbox"/>	
10	<u>FRONT BUMPER</u>	<input type="checkbox"/>	<input type="checkbox"/>	
11	<u>TOW EYES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
12	<u>AIR HORN ACTUATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	



13	<u>SIREN 10" ELECTRIC</u>	<input type="checkbox"/>	<input type="checkbox"/>	
14	<u>ELECTRONIC SIREN SPEAKER</u>	<input type="checkbox"/>	<input type="checkbox"/>	
15	<u>GROSS AXLE WEIGHT RATINGS FRONT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
16	<u>FRONT AXLE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
17	<u>FRONT SUSPENSION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
18	<u>POWER STEERING GEAR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
19	<u>CHASSIS ALIGNMENT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
20	<u>FRONT TIRES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
21	<u>FRONT WHEELS STEEL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
22	<u>FRONT HUBS &amp; WHEEL BEARINGS OIL LUBRICATED</u>	<input type="checkbox"/>	<input type="checkbox"/>	
23	<u>FRONT BRAKES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
24	<u>GROSS AXLE WEIGHT RATINGS REAR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
25	<u>REAR AXLE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
26	<u>TANDEM INTER-AXLE DIFFERENTIAL LOCK</u>	<input type="checkbox"/>	<input type="checkbox"/>	
27	<u>REAR SUSPENSION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
28	<u>TOP SPEED</u>	<input type="checkbox"/>	<input type="checkbox"/>	
29	<u>REAR BRAKES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
30	<u>REAR TIRES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
31	<u>REAR WHEELS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
32	<u>PAINTED WHEELS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
33	<u>VISUAL TIRE PRESSURE INDICATOR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
34	<u>HUBODOMETER</u>	<input type="checkbox"/>	<input type="checkbox"/>	
35	<u>ABS &amp; ATC SYSTEM</u>	<input type="checkbox"/>	<input type="checkbox"/>	
36	<u>AIR DRYER</u>	<input type="checkbox"/>	<input type="checkbox"/>	
37	<u>ADDITIONAL AIR RESERVOIR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
38	<u>REMOTE MANUAL AIR DRAINS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
39	<u>OUTSIDE AIR INTAKE CONNECTION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
40	<u>ENGINE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
41	<u>ENGINE EQUIPMENT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
42	<u>OVERFLOW TANK</u>	<input type="checkbox"/>	<input type="checkbox"/>	
43	<u>COOLANT FILTER</u>	<input type="checkbox"/>	<input type="checkbox"/>	
44	<u>TRANSMISSION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
45	<u>TRANSMISSION MODE</u>	<input type="checkbox"/>	<input type="checkbox"/>	

46	<u>TRANSMISSION PRE-SELECT WITH AUXILIARY BRAKE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
47	<u>DRIVELINES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
48	<u>STOP, TAIL, TURN AND BACK-UP LIGHT WIRING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
49	<u>CAB INTERIOR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
50	<u>INTERIOR GRAB HANDLE "A" PILLAR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
51	<u>CENTRE CAB CONSOLE STORAGE COMPARTMENT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
52	<u>VEHICLE DATA RECORDER (VDR)</u>	<input type="checkbox"/>	<input type="checkbox"/>	
53	<u>OCCUPANT RESTRAINT INDICATOR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
54	<u>INSTRUMENTS AND CONTROLS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
55	<u>IGNITION KEY</u>	<input type="checkbox"/>	<input type="checkbox"/>	
56	<u>ATO/ATC TYPE FUSE BLOCKS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
57	<u>KUSSMAUL 20 AMP INLET</u>	<input type="checkbox"/>	<input type="checkbox"/>	
58	<u>BATTERY CONDITIONER 1200 KUSSMAUL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
59	<u>BATTERY JUMPER STUDS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
60	<u>BACKUP ALARM</u>	<input type="checkbox"/>	<input type="checkbox"/>	
61	<u>LED GROUND LIGHTING BELOW EACH DOOR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
62	<u>FLASHING DOOR AJAR LIGHT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
63	<u>MAP LIGHT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
64	<u>HAND HELD SPOTLIGHT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
65	<u>EXTERIOR CAB ASSIST HANDLES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
66	<u>SIGTRONIC US-67S INTERCOM</u>	<input type="checkbox"/>	<input type="checkbox"/>	
67	<u>INTERCOM SYSTEM INSTALLATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
68	<u>CUSTOMER SUPPLIED ANTENNAS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
69	<u>CUSTOMER SUPPLIED 2-WAY RADIO</u>	<input type="checkbox"/>	<input type="checkbox"/>	
70	<u>CAB INTERIOR SPEAKER WIRING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
71	<u>TWO TONE PAINT</u>	<input type="checkbox"/>	<input type="checkbox"/>	

72	<u>OPERATORS MANUAL AND PARTS LIST</u>	<input type="checkbox"/>	<input type="checkbox"/>	
73	<u>ENGINE AND TRANSMISSION OPERATION MANUAL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
74	<u>AS BUILT DIAGRAMS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
75	<u>MIDSHIP MOUNT FIRE PUMP</u>	<input type="checkbox"/>	<input type="checkbox"/>	
76	<u>PUMP SHAFT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
77	<u>MECHANICAL SEAL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
78	<u>IMPELLER</u>	<input type="checkbox"/>	<input type="checkbox"/>	
79	<u>PUMP TRANSMISSION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
80	<u>HEAT EXCHANGER / HEATED PUMP CORE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
81	<u>DRIVELINE INSTALLATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
82	<u>SINGLE STAGE FIRE PUMP</u>	<input type="checkbox"/>	<input type="checkbox"/>	
83	<u>FIRE PUMP MOUNTING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
84	<u>PUMP COLOR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
85	<u>ALLOY ANODES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
86	<u>PUMP SHIFT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
87	<u>PRIMING PUMP - ELECTRIC PRIMER</u>	<input type="checkbox"/>	<input type="checkbox"/>	
88	<u>PRESSURE GOVERNOR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
89	<u>PUMP HOUR METER</u>	<input type="checkbox"/>	<input type="checkbox"/>	
90	<u>INTAKE RELIEF VALVE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
91	<u>MASTER DRAIN VALVE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
92	<u>PUMP COOLER LINE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
93	<u>PUMP COOLER CHECK VALVE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
94	<u>PUMP MANUALS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
95	<u>CUSTOM PLUMBING MANIFOLD</u>	<input type="checkbox"/>	<input type="checkbox"/>	
96	<u>3" TANK-TO-PUMP</u>	<input type="checkbox"/>	<input type="checkbox"/>	
97	<u>2" TANK FILL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
98	<u>6" LEFT SIDE STEAMER INLET</u>	<input type="checkbox"/>	<input type="checkbox"/>	
99	<u>6" RIGHT SIDE STEAMER INLET</u>	<input type="checkbox"/>	<input type="checkbox"/>	
100	<u>INTAKE RELIEF VALVE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
101	<u>2-1/2" LEFT SIDE INLET</u>	<input type="checkbox"/>	<input type="checkbox"/>	
102	<u>2-1/2" RIGHT SIDE INLET</u>	<input type="checkbox"/>	<input type="checkbox"/>	

103	<u>2-1/2" LEFT SIDE DISCHARGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
104	<u>2-1/2" RIGHT SIDE DISCHARGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
105	<u>4" RIGHT SIDE DISCHARGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
106	<u>1-1/2" CROSSLAY PRE-CONNECT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
107	<u>1-1/2" CROSSLAY PRE-CONNECT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
108	<u>2-1/2" CROSSLAY PRE-CONNECT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
109	<u>DARLEY WATER PURIFICATION SYSTEM</u>	<input type="checkbox"/>	<input type="checkbox"/>	
110	<u>WATER TANK</u>	<input type="checkbox"/>	<input type="checkbox"/>	
111	<u>WATER TANK LEVEL GAUGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
112	<u>2-1/2" DIRECT TANK FILL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
113	<u>2-1/2" DIRECT TANK FILL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
114	<u>NEWTON 10 x 10 ELECTRIC STAINLESS STEEL DUMP VALVE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
115	<u>NEWTON 36" MANUALLY OPERATED EXTENSION CHUTE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
116	<u>UNITED PLASTIC FABRICATING 10" SQUARE DUMP VALVE FLANGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
117	<u>DARLEY PUMP MODULE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
118	<u>INDEPENDENT PUMP MODULE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
119	<u>PUMP MODULE LIGHTS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
120	<u>CONTROL PANEL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
121	<u>INSTRUMENT PANEL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
122	<u>RIGHT SIDE PUMP PANEL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
123	<u>PANEL SURFACES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
124	<u>PUMP PANEL LIGHTS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
125	<u>PRESSURE AND VACUUM TEST PORT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
126	<u>ENGINE COOLER CONTROL VALVE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
127	<u>PUMP COOLER CONTROL VALVE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
128	<u>DISCHARGE TRIM PLATES</u>	<input type="checkbox"/>	<input type="checkbox"/>	

129	<u>LEFT SIDE RUNNING BOARD</u>	<input type="checkbox"/>	<input type="checkbox"/>	
130	<u>RIGHT SIDE RUNNING BOARD</u>	<input type="checkbox"/>	<input type="checkbox"/>	
131	<u>CROSSLAY CONFIGURATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
132	<u>RIGHT SIDE PUMP ACCESS PANEL</u>	<input type="checkbox"/>	<input type="checkbox"/>	
133	<u>AIR HORN BUTTON</u>	<input type="checkbox"/>	<input type="checkbox"/>	
134	<u>ALUMINUM BODY CONSTRUCTION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
135	<u>ULTRA STAINLESS™ STEEL FASTENERS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
136	<u>GS-36 BODY SUB FRAME</u>	<input type="checkbox"/>	<input type="checkbox"/>	
137	<u>EXHAUST HEAT DEFLECTOR SHIELD</u>	<input type="checkbox"/>	<input type="checkbox"/>	
138	<u>LEFT SIDE BODY CONFIGURATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
139	<u>FIRE EXTINGUISHER RACK</u>	<input type="checkbox"/>	<input type="checkbox"/>	
140	<u>RIGHT BODY CONFIGURATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
141	<u>REAR BODY CONFIGURATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
142	<u>COMPARTMENT AIR RELEASE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
143	<u>COMPARTMENT DRAIN HOLES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
144	<u>WALKWAYS AND OVERLAYS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
145	<u>STEPPING SURFACES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
146	<u>REAR DECK</u>	<input type="checkbox"/>	<input type="checkbox"/>	
147	<u>REAR STEPS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
148	<u>FRONT BODY STEPS AND LIGHTING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
149	<u>FRONT BODY STEPS AND LIGHTING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
150	<u>FRONT VERTICAL AREA TREAD PLATE OVERLAYS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
151	<u>REAR WHEEL WELLS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
152	<u>STAINLESS STEEL REAR FENDERETTES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
153	<u>BODY RUB RAILS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
154	<u>REAR TOW HOOK</u>	<input type="checkbox"/>	<input type="checkbox"/>	
155	<u>HOSE BED</u>	<input type="checkbox"/>	<input type="checkbox"/>	

156	<u>GROUND LADDER STORAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
157	<u>PIKE POLE STORAGE</u>	<input type="checkbox"/>	<input type="checkbox"/>	
158	<u>HARD SUCTION HOSE RACK ABOVE SIDE COMPARTMENTS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
159	<u>HANDRAILS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
160	<u>LICENSE PLATE BRACKET</u>	<input type="checkbox"/>	<input type="checkbox"/>	
161	<u>FULL WIDTH HOSE BED STEP</u>	<input type="checkbox"/>	<input type="checkbox"/>	
162	<u>QL-12 ELECTRICAL SYSTEM</u>	<input type="checkbox"/>	<input type="checkbox"/>	
163	<u>V-MUX ELECTRICAL MANAGEMENT SYSTEM</u>	<input type="checkbox"/>	<input type="checkbox"/>	
164	<u>WEATHERPROOF DOOR SWITCHES</u>	<input type="checkbox"/>	<input type="checkbox"/>	
165	<u>ELECTRICAL TERMINALS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
166	<u>TAIL LIGHTS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
167	<u>MIDSHIP TURN SIGNALS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
168	<u>CLEARANCE LIGHTS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
169	<u>HOSE BED LOADING LIGHTS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
170	<u>REAR WORK LIGHT SWITCH</u>	<input type="checkbox"/>	<input type="checkbox"/>	
171	<u>UPPER ZONE A</u>	<input type="checkbox"/>	<input type="checkbox"/>	
172	<u>GTT OPTICOM</u>	<input type="checkbox"/>	<input type="checkbox"/>	
173	<u>UPPER ZONE C</u>	<input type="checkbox"/>	<input type="checkbox"/>	
174	<u>LOWER ZONE A</u>	<input type="checkbox"/>	<input type="checkbox"/>	
175	<u>GRILLE LIGHT LED</u>	<input type="checkbox"/>	<input type="checkbox"/>	
176	<u>LOWER ZONE B</u>	<input type="checkbox"/>	<input type="checkbox"/>	
177	<u>LOWER ZONE C</u>	<input type="checkbox"/>	<input type="checkbox"/>	
178	<u>LOWER ZONE D</u>	<input type="checkbox"/>	<input type="checkbox"/>	
179	<u>TRAFFIC DIRECTIONAL LIGHT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
180	<u>WHELEN 12V RECESSED LIGHT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
181	<u>12 VOLT LED LIGHTS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
182	<u>WHELEN 12V RECESSED LIGHT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
183	<u>FRONT SCENE LIGHTS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
184	<u>FRONT SCENE LIGHT LOCATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	

185	<u>FRONT SCENE LIGHTS ACTIVATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
186	<u>BODY PAINT PREPARATION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
187	<u>PAINT PROCESS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
188	<u>HAND POLISHED</u>	<input type="checkbox"/>	<input type="checkbox"/>	
189	<u>BODY COLOR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
190	<u>UNDERCOATING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
191	<u>COMPARTMENT COATING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
192	<u>S-COAT™ THERMOSET COATING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
		<input type="checkbox"/>	<input type="checkbox"/>	
193	<u>TOUCH UP PAINT</u>	<input type="checkbox"/>	<input type="checkbox"/>	
194	<u>CORROSION PREVENTION</u>	<input type="checkbox"/>	<input type="checkbox"/>	
195	<u>NFPA COMPLIANT REFLECTIVE STRIPING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
196	<u>REFLECTIVE STRIPING SIDE OF CHASSIS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
197	<u>RUB RAIL REFLECTIVE STRIPING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
198	<u>CAB DOOR REFLECTIVE STRIPING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
199	<u>CHEVRON REFLECTIVE STRIPING ON REAR</u>	<input type="checkbox"/>	<input type="checkbox"/>	
200	<u>REFLECTIVE LETTERING</u>	<input type="checkbox"/>	<input type="checkbox"/>	
201	<u>REAR STEP SIGNAL SYSTEM</u>	<input type="checkbox"/>	<input type="checkbox"/>	
202	<u>PINCH POINT CROW BAR BRACKET</u>	<input type="checkbox"/>	<input type="checkbox"/>	
203	<u>WHEEL COVERS</u>	<input type="checkbox"/>	<input type="checkbox"/>	
204	<u>CHASSIS FAMILIARIZATION CLASS</u>	<input type="checkbox"/>	<input type="checkbox"/>	

2. If this offer is accepted by the City, such offer and acceptance will create a contract as described in:
  - (a) the RFQ;
  - (b) the specifications set out above and in Schedule A of the RFQ;
  - (c) the General Terms and Conditions; and
  - (d) this Quotation; and
  - (e) other terms, if any, that are agreed to by the parties in writing.
  
3. 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.

4. The location of the nearest factory authorized warranty repair facility / parts dealership:

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5. The number of business days upon the receipt of Purchase Order is received that the Contractor will guarantee delivery: \_\_\_\_\_

6. I/We the undersigned duly authorized representatives of the Contractor, having received and carefully reviewed the RFQ including without limitation the Specifications and the General Terms and Conditions, submit this Quotation in response to the RFQ.

**This Quotation** is offered by the Contractor this \_\_\_\_\_ day of \_\_\_\_\_, 2014.

**CONTRACTOR**

by its authorized signatory:

\_\_\_\_\_  
(Legal Name of Contractor)

\_\_\_\_\_  
(Signature of Authorized Signatory)

\_\_\_\_\_  
(Print Name and Position of Authorized Signatory)

**This Quotation** is accepted by the City this \_\_\_\_\_ day of \_\_\_\_\_, 2014.

**CITY OF SURREY**

by its authorized signatory:

\_\_\_\_\_  
(Signature of Authorized Signatory)

\_\_\_\_\_  
(Print Name and Position of Authorized Signatory)