



# **GOLDEN STATE**

**FIRE APPARATUS**

PREPARED ESPECIALLY FOR:

## **CITY OF MANTECA FIRE DEPARTMENT**

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**One (1) Pierce Manufacturing, Inc.  
Velocity Heavy Duty Rescue**



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**GOLDEN STATE**  
FIRE APPARATUS

ATTACHMENT 1

[goldenstatefire.com](http://goldenstatefire.com)

# **1 PRODUCT PROPOSAL**

# OPTION A

## PAYMENT AT TIME OF DELIVERY OR PICKUP

This will be the price of the Product(s) contingent  
upon the Customer paying the Grand Total  
Purchase Price to GSFA at time of delivery or pickup  
pursuant to the Payment Terms

## PRODUCT PROPOSAL FOR:

### City of Manteca Fire Department

1154 Union Road  
Manteca, CA 95337

### Sales Consultant

Chad Wilson  
[chad@goldenstatefire.com](mailto:chad@goldenstatefire.com)  
Mobile: (916) 759-6686

SUBMITTED DATE	EXPIRATION DATE	GSFA PROPOSAL #	MANUFACTURER BID #	MANUFACTURER	CONSORTIUM
08/06/2025	09/30/2025	60806-25B	990	Pierce Manufacturing Inc.	Sourcewell #113021-OKC, ID #271, Member # 21323

Golden State Fire Apparatus, Inc. ("GSFA") is pleased to provide this proposal for the fire apparatus(es) and equipment identified below (the "Product") to CITY OF MANTECA ("Customer") for consideration. This proposal (this "Product Proposal") includes the following exhibits attached hereto: the Standard Terms and Conditions attached as Exhibit A (the "Terms and Conditions"); the Product Specifications attached as Exhibit B (the "Specifications"); the Product Warranties attached as Exhibit C; and the Dealer Supplied Products and/or Services attached as Exhibit D (the "Dealer Supplied Products/Services List") (all of the foregoing, collectively, the "Agreement"). Through its signature below or other Acceptance (as defined on page 2), Customer acknowledges having received and read, and agrees to be bound by, the Agreement. The Agreement shall be effective as of the latest date appearing in the signature blocks below (the "Executed Date").

ITEM	PRODUCT DESCRIPTION	UNIT PRICE
A	One (1) Pierce Manufacturing, Inc. Velocity Heavy Duty Rescue	1,784,278.00
B	<i>Discount for Sourcewell consortium purchase</i>	<i>(74,434.00)</i>
C	SUBTOTAL	1,709,844.00
D	9.00% State Sales Tax	153,885.96
E	California Tire Fee	10.50
F	<b>GRAND TOTAL PURCHASE PRICE</b>	<b>1,863,740.46</b>

**PAYMENT TERMS** – Customer shall pay the total purchase price set forth directly above (the "Grand Total Purchase Price") to GSFA no later than the time of GSFA's delivery of the applicable Product to Customer's address listed above (or Customer's pick up of such Product at GSFA's facilities, if approved by GSFA). GSFA shall have no obligation to deliver, or permit pick up of the Product if the Customer does not have full payment ready when the Product is complete and ready to deliver or pick up, as applicable. Customer shall pay any balance due as a result of Change Orders as described in the Terms and Conditions.

**MANUFACTURER** – Customer acknowledges that GSFA is not an agent of the Product manufacturer identified above ("Manufacturer") and is not capable of binding Manufacturer. Within five (5) business days of the Executed Date, GSFA shall submit an order form to the Manufacturer for the Product. GSFA's further performance under the Agreement is contingent upon Manufacturer's acceptance of such order form at the price and on the terms GSFA believed to be available when submitting this Product Proposal to Customer. If Manufacturer rejects such order as submitted or fails to respond to GSFA within a reasonable amount of time, GSFA shall notify Customer in writing, and unless GSFA and Customer otherwise agree in writing, the Agreement shall then terminate and have no further force or effect.

**PRODUCT COMPLETION** – The Product shall be ready for final inspection by Customer at the manufacturing facility within approximately **44 to 47 MONTHS** after the Executed Date. The foregoing estimate is provided as a good faith approximation as of the date of submission of this Product Proposal and is subject to the Terms and Conditions.

**PREDELIVERY SERVICE** – If applicable, after transportation from the manufacturing facility and prior to final delivery or pick up, the Product shall receive those additional Products and/or services identified on the Dealer Supplied Products/Services List. It is estimated that such a service will add approximately **1 to 1.5 MONTH(S)** to the above Product completion estimate. The foregoing estimate is provided as a good faith approximation as of the date of submission of this Product Proposal and is subject to the Terms and Conditions.

**PROPOSAL EXPIRATION** – This Product Proposal supersedes any previous proposal(s) presented to Customer by GSFA and its employees and may be accepted by Customer on or before the Expiration Date identified above. Unless accepted by the Expiration Date, GSFA reserves the right to withdraw this Product Proposal or to alter its terms (including by providing updated Product pricing) prior to an order being accepted.

**PURCHASE ORDER** – Any PO shall be made out to: *Golden State Fire Apparatus, Inc. – 7400 Reese Road – Sacramento, CA 95828.*

**ACCEPTANCE** – ACCEPTANCE OF THIS PROPOSAL CREATES AN ENFORCEABLE BINDING AGREEMENT BETWEEN GSFA AND CUSTOMER. “**ACCEPTANCE**” MEANS THAT THE CUSTOMER DELIVERS TO GSFA: (A) A SIGNED COPY OF THIS PRODUCT PROPOSAL, OR (B) A SIGNED COPY OF A PURCHASE ORDER INCORPORATING THE AGREEMENT IN ITS ENTIRETY. ANY ADDITIONAL OR DIFFERENT TERMS, WHETHER CONTAINED IN CUSTOMER’S FORMS OR OTHERWISE PRESENTED BY CUSTOMER AT ANY TIME, ARE HEREBY REJECTED AND OF NO EFFECT UNLESS APPROVED IN WRITING SIGNED BY GSFA.

**COUNTERPARTS** - This Product Proposal may be executed in multiple counterparts, each of which shall be deemed an original (including copies sent to a party by electronic transmission) as against the party signing such counterpart, but which together shall constitute one and the same instrument. A signed copy of this Product Proposal delivered by facsimile, email or other means of electronic transmission will be deemed to have the same legal effect as delivery of an original signed copy of this Product Proposal. If this Product Proposal is returned to GSFA with the signature of Customer’s authorized representative but without an attestation or co-signers signature, then absent Customer’s written notice to the contrary, GSFA shall be entitled to rely on such single signature as sufficient evidence of the signatory’s authority to execute the Agreement and bind Customer thereby.

**INTENDING TO CREATE A BINDING AGREEMENT**, Customer and GSFA have each caused this Product Proposal dated 08/06/2025, GSFA Proposal Number 60806-25B to be executed by their duly authorized representatives effective as of the Executed Date.

**ACCEPTED AND AGREED TO BY CUSTOMER**

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Signature of Authorized Customer Representative

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Print Name

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Title

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Date**ACCEPTED AND AGREED TO BY GSFA**

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Signature of Authorized GSFA Representative

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Print Name

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Title

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Date

# **2 STANDARD TERMS AND CONDITIONS**

**Exhibit "A"**

## STANDARD TERMS AND CONDITIONS

### 1. Definitions.

- a. **"Agreement"** has the meaning given in the Product Proposal.
- b. **"Customer"** means the customer identified in the Product Proposal.
- c. **"Dealer Preparation,"** if applicable, means additional product(s) and/or services added or provided by GSFA after Manufacturer's completion of the Product and transportation to GSFA's premises prior to delivery to Customer, in accordance with the Dealer Supplied Products/Services List and/or a valid Change Order(s).
- d. **"Dealer Supplied Products/Services List"** means the Dealer Supplied Products and/or Services List attached to the Product Proposal as Exhibit D, which reflects all Dealer Preparation under the Agreement absent a valid Change Order(s).
- e. **"Grand Total Purchase Price"** means the total purchase price for the Product identified in the Product Proposal (subject to any adjustments required or permitted by these Terms and Conditions, including by the execution of a valid Change Order(s)).
- f. **"GSFA"** means Golden State Fire Apparatus, Inc., a California corporation.
- g. **"Manufacturer"** means the person or persons, company, firm, corporation, partnership, or other organization identified in the Product Proposal as responsible for manufacturing the Product.
- h. **"Party"** or **"Parties"** means GSFA and/or Customer, as applicable.
- i. **"Prepayment Discount"** means a discount to the purchase price for the Product granted to Customer in connection with Customer's advance payment of the Grand Total Purchase Price (or portion thereof, as specified in the Product Proposal), if applicable.
- j. **"Product"** means the fire apparatus(es) and any associated equipment listed in the Product Proposal and further described in the Specifications.
- k. **"Product Proposal"** means the GSFA proposal executed by Customer to which these Terms and Conditions are attached.
- l. **"Product Warranties"** means the Manufacturer warranties for the Product attached to the Product Proposal as Exhibit C.
- m. **"Specifications"** means the specifications for the Product attached to the Product Proposal as Exhibit B.
- n. **"Terms and Conditions"** means these Standard Terms and Conditions, which are attached to the Product Proposal as Exhibit A.

### 2. Purchase and Payment.

a. Purchase. Customer agrees to purchase the Product at the Grand Total Purchase Price (as such amount may be adjusted in accordance with these Terms and Conditions), pursuant to the payment terms set forth in the Product Proposal. The Grand Total Purchase Price is payable in U.S. dollars.

b. Contingency Reserve Fund. The Grand Total Purchase Price may include an amount to be set aside for the purpose of funding any future costs or financial obligations incurred by Customer under the Product Proposal or any valid Change Order(s) (the **"Contingency Reserve Fund"**). If applicable, the amount of any required Contingency Reserve Fund will be set forth in either the Product Proposal or Exhibit D. The Contingency Reserve Fund may be withdrawn against by Customer or GSFA for the purpose of satisfying Customer's payment obligations under the initial Product Proposal or any valid Change Order(s) (including, without limitation, a Change Order submitted by GSFA pursuant to Section 8.b). If a Contingency Reserve Fund is required under the Agreement, the amount of such fund is not intended as an estimate of the actual additional costs of contingencies, Change Orders, unforeseen items or other required work that may be incurred under the Agreement after submission of the Product Proposal to Customer, which amounts Customer acknowledges may exceed the Contingency Reserve Fund amount. The balance of any Contingency Reserve Fund will be credited against Customer's payment obligations, or otherwise returned to Customer within thirty (30) calendar days of delivery of all Products under the Agreement (provided that Customer has paid all amounts owed under the Agreement as of such date).



c. Prepayment Discount. If GSFA has granted Customer a Prepayment Discount, Customer must provide each associated prepayment (each, a “**Prepayment**”) within the time frame specified in the Product Proposal in order to receive such discount. Customer’s failure to timely make any Prepayment may result in: (i) GSFA’s termination of the Agreement; and/or (ii) Customer’s loss of the Prepayment Discount for the portion of the Grand Total Purchase Price represented by such outstanding Prepayment and the application of a late fee as set forth in Section 6, in each case in GSFA’s sole discretion.

d. State Sales Tax. Customer shall be responsible for the cost of state sales tax associated with, or attributable to, the Product. The taxes stated in the Product Proposal are subject to adjustment for the applicable state sales tax rate in effect at the time of delivery. Therefore, the sales tax set forth on the Product Proposal is only an estimate of such taxes and will be increased or decreased at the time of delivery if a change in the applicable sales tax rate has occurred, in which case Customer shall pay GSFA (or be refunded by GSFA) the difference in the applicable sales tax.

3. Product Completion Date. Within thirty (30) calendar days of the date on which the last required signatory executes the Product Proposal (such date, the “**Executed Date**”), GSFA shall submit to Customer a tentative Product completion date based on the then-estimated time to complete the manufacturing of the Product(s) and for the Product(s) to be ready for inspection and final approval by Customer at the manufacturing facility (which may differ from the Product completion estimate contained in the Product Proposal). Due to global supply chain constraints, any Product completion date contained herein, or in the Product Proposal, or otherwise provided to Customer, is a good faith estimate only as of the date provided to Customer, and merely an approximation based on current information available to GSFA and Manufacturer. Customer shall not be entitled to rely on any such estimate, and GSFA shall have no liability to Customer for a failure by GSFA or Manufacturer to meet any such estimate. All Product completion estimates are subject to modification and, if applicable, GSFA will provide updates to such estimates to Customer when available.

4. Stock / Demo Units. Notwithstanding any other provision contained in the Agreement (including Section 12 hereof concerning warranties), any Products constituting stock/demo unit(s) are sold to Customer on an as-is, first-come and first-served basis and GSFA makes no further representation or warranty to any customer with respect to such unit(s). Regardless of the terms of the Product Proposal, GSFA shall only be obligated to sell such stock/demo unit(s) to the first customer to enter into a purchase agreement with GSFA identifying such unit(s), and after the execution by GSFA of such agreement any subsequent purchase agreement (including the Agreement, as applicable) shall have no further force or effect with respect to such unit(s).

5. Multiple Unit Purchase. If the Grand Total Purchase Price includes pricing for multiple Products, the Product price stated in the Product Proposal shall only be valid if the quantity of Products being proposed are purchased at the same time, pursuant to the same Agreement. GSFA shall have no obligation to offer the same price for any Product if purchased by Customer pursuant to a later purchase agreement.

6. Late Fee; Storage Fee. A late fee equal to 0.033% of the outstanding portion of the Grand Total Purchase Price will be charged per calendar day for overdue payments beginning ten (10) calendar days after the payment is due and continuing for the first thirty (30) calendar days thereafter. After such thirty (30) calendar day period, the late fee shall increase to 0.044% per calendar day until payment of the outstanding portion of the Grand Total Purchase Price is received; provided that if Customer is a public agency, the foregoing late fees shall not exceed the statutory limit set forth in Section 926.10 of the California Government Code. If Customer is unable to satisfy the delivery requirements hereunder or is unwilling to take delivery of the Product, then GSFA shall be entitled to a storage charge running from the earlier of: (i) the date of delivery agreed to between GSFA and Customer (provided GSFA is willing and able to deliver the Product on such date), or (ii) twenty-one (21) calendar days after GSFA notifies Customer that the Product is available for delivery. The storage charge is equal to: (i) \$175.00 per calendar day per apparatus stored, or (ii) the actual charges incurred by GSFA with a third party for storage of the Product, whichever is greater. Such storage charge shall continue until the actual time of delivery and Customer’s possession of the Product, and any such storage by GSFA or such third party shall be at the sole risk of Customer.

## 7. Delivery; Inspection and Acceptance.

a. Delivery. Subject to Section 5 hereof, the Product is scheduled to be delivered to the location and within the time period specified in the Product Proposal. Such delivery date is an estimate, and GSFA is, notwithstanding this Section 7.a, not bound to such date unless it otherwise agrees in a separate writing to complete delivery by a date certain. For the avoidance of doubt, GSFA is not responsible for delivery delays caused by or because of actions, omissions or conduct of Customer, the Manufacturer, or their respective employees, affiliates, suppliers, contractors, and carriers. Risk of loss for the Product shall pass to Customer at the point and time of delivery (which shall include an attempted delivery by GSFA which cannot be completed due to any act or omission of Customer). However, title to the Product shall only pass to Customer upon delivery if Customer has then fully paid GSFA all amounts due hereunder (including additional amounts due under any valid Change Order). Absent GSFA's separate written agreement, which it may or may not provide in its sole and absolute discretion, delivery of the Product will not occur before Customer has fully paid all amounts due under the Agreement and provided proof of insurance reasonably satisfactory to GSFA. If GSFA permits Customer to take possession of the Product prior to such payment, Customer may not mount equipment, conduct training, or place the Product into service until all amounts due under the Agreement have been paid. If Customer has ordered multiple Products, GSFA reserves the right to deliver such Products in installments and to separately invoice Customer for such Products.

b. Inspection and Acceptance. Upon delivery, Customer shall have ten (10) calendar days within which to inspect the Product for substantial conformance to the Specifications, and in the event of substantial non-conformance to the Specifications to furnish GSFA with written notice sufficient to permit GSFA to evaluate such non-conformance ("**Notice of Nonconformance to Specifications**"). Contingent upon part availability and Customer's cooperation, any Product not in substantial conformance to material Specifications shall be remedied by GSFA (by repair or replacement, at GSFA's election) within thirty (30) calendar days from GSFA's receipt of the Notice of Nonconformance to Specifications. In the event GSFA does not receive a Notice of Nonconformance to Specifications within ten (10) calendar days of delivery, the Product will be deemed to be in conformance with Specifications and accepted by Customer.

## 8. Changes to Agreement Terms.

a. Change Orders. The Customer may request that GSFA incorporate a change to the Product or the Specifications for the Product, or GSFA may submit changes to the Agreement required or permitted to be made by GSFA (pursuant to Section 8.b or otherwise), by delivering a written Change Order to the other party hereto, which shall include a description of the proposed change sufficient to permit the receiving party to evaluate such change (either, a "**Change Order**"). For any Change Order submitted by Customer, GSFA will provide Customer a written response (a "**Response**") stating (i) whether GSFA will accommodate such Change Order (which GSFA may decide in its sole and absolute discretion); and (ii) the terms of the modification to the order, including any increase or decrease in the Grand Total Purchase Price resulting from such Change Order, a date on which any increase in the Grand Total Purchase Price must be paid, and an estimate of any effect on production scheduling or delivery resulting from such Change Order. Customer shall have seven (7) calendar days after receipt of the Response to notify GSFA as to whether Customer desires to make the changes GSFA has approved in the Response. In the event Customer countersigns GSFA's Response, Customer shall pay the increase (or be refunded the decrease) in the Grand Total Purchase Price by the date specified in the Response. GSFA may also send Customer a Change Order to account for any changes to the Agreement required or permitted to be made by GSFA (including those changes required pursuant to Section 8.b hereof), and such Change Order shall be effective upon delivery to Customer unless Customer elects to terminate the applicable Product order under the Agreement in accordance with Section 9.

### b. Additional Changes.

i. Component Price Volatility; Increases Imposed by Manufacturer. GSFA shall not be responsible for (i) any unforeseen price increase or surcharge enacted by suppliers of major components of the Product (including but not limited to commercial chassis, engine, transmission, and fire pump); or (ii) price increases imposed on GSFA by Manufacturer pursuant to Manufacturer's terms and conditions for sale of the Product (a "**Manufacturer**

**Price Increase**”), after Customer becomes bound by the Agreement. Customer shall be responsible for all amounts arising from any price increases for major components of the Product (including all associated taxes and fees thereon) or any Manufacturer Price Increases occurring after the execution of the Agreement which increase the cost of the Product to GSFA, and such amounts will be documented on a Change Order adjusting the Grand Total Purchase Price accordingly. Customer shall pay any such price increase prior to Product delivery. A Manufacturer Price Increase may include, but shall not be limited to, an increase in Product price resulting from an increase in the Producer Price Index of Components for Manufacturing (see [www.bls.gov](http://www.bls.gov) Series ID: WPUID6112) in excess of a compounded annual growth rate of five percent (5%), as measured between the month Manufacturer accepts the applicable Product order and the month that is fourteen (14) months prior to the then-current estimated Product completion date (the foregoing, a **“PPI-Based Price Increase”**). If, upon Customer’s receipt of a Change Order reflecting a PPI-Based Price Increase, Customer elects to terminate the applicable Product order in accordance with Section 8.b.iii rather than pay such increase, then in lieu of the cancellation fees described in Section 9.a hereof GSFA shall be entitled to recover and Customer shall pay GSFA’s actual non-reimbursable costs incurred in connection with the Product order through the date of Customer’s termination of such Product order.

ii. New Legal Standards. In the event the Product design, materials or specifications require an alteration arising from new regulations issued by any governmental entity or trade association, including, but not limited to, the NFPA, DOT, and EPA, and such alteration increases the cost of the Product to GSFA, Customer shall be responsible for changes to the Grand Total Purchase Price arising from such alteration. GSFA shall promptly notify Customer when it becomes aware of any potential or required change in regulations occurring prior to delivery that would impact the Product purchased.

iii. Change Orders. Customer shall execute any Change Order submitted by GSFA documenting any of the changes required or permitted by Sections 8.b.i and 8.b.ii above (which shall, to the extent practicable, itemize any increases in the Grant Total Purchase Price and specify a commercially reasonable date by which Customer must pay such increase), unless Customer instead elects to terminate the applicable Product order under the Agreement within fifteen (15) calendar days of Customer’s receipt of such Change Order and in accordance with Section 9. Absent such a termination, failure or refusal to execute a Change Order does not alter Customer’s obligations under this Section 8.b.

c. Changes in Commercial Specifications. Specifications for all components of the Product manufactured by companies other than the Manufacturer are subject to change without notice. Specifications for such components will be as available at the time of manufacture of the Product. GSFA shall not be liable for any deviations in such specifications arising from a substitution of components or changes in the design of any component by their original manufacturer.

## 9. Termination.

a. By Customer. Customer may terminate a Product order identified in the Product Proposal or a Change Order by providing written notice to GSFA in accordance with Section 16 hereof. If Customer elects to terminate a Product order, Customer shall pay GSFA a cancellation fee as follows: (a) after the Product order is accepted and entered by GSFA, 10% of the portion of the Grand Total Purchase Price applicable to such Product (including all associated taxes, fees and costs) (such amount, the **“Product Purchase Price”**); (b) after completion of the pre-construction phase of the order process, 20% of the Product Purchase Price; and (c) after the requisition of any materials or commencement of any manufacturing or assembly of the Product by either GSFA or Manufacturer but before substantial completion of such Product, 50% of the Product Purchase Price. Customer shall not be permitted to terminate a Product order after substantial completion of manufacturing and assembly of such Product (excluding any Dealer Preparation or other pre-delivery services or untypical Product customization, if applicable). Notwithstanding the foregoing, if the applicable tier of cancellation fee is not sufficient to cover all actual costs and fees incurred by GSFA with Manufacturer in connection with Customer’s termination of the Product order (**“Manufacturer Termination Fees”**), then in addition to such cancellation fee Customer shall pay the balance of all Manufacturer Termination Fees. If Customer received a Prepayment Discount, such discount shall not be considered for the purpose of calculating the above cancellation fee. The tier of cancellation fee applicable to any cancellation,

as well as the determination of whether a Product has reached substantial completion, shall be in the sole and absolute discretion of GSFA. Customer may request a fee waiver, and GSFA, in its sole discretion, may agree to waive and/or adjust such fee. GSFA will return the balance of the Grand Total Purchase Price or Product Purchase Price, as applicable, within thirty (30) calendar days of the effective date of the cancellation of the Product order or termination of the Agreement.

Customer may terminate the Agreement for an Event of Default by GSFA after providing GSFA with written notice in accordance with Section 16 (which notice shall describe with reasonably particularity the Event of Default justifying such termination) if such Event of Default remains uncured (if capable of cure) thirty (30) days following GSFA's receipt of such notice; provided, however, that the foregoing cure period shall continue if and for so long as GSFA has commenced and is continuing to undertake commercially reasonable efforts to cure such Event of Default as promptly as reasonably practicable.

b. By GSFA. GSFA may terminate the Agreement for an Event of Default by Customer after providing Customer with written notice in accordance with Section 16 (which notice shall describe with reasonably particularity the Event of Default justifying such termination) if such Event of Default remains uncured (if capable of cure) thirty (30) days following Customer's receipt of such notice; provided, however, that the foregoing cure period shall continue if and for so long as Customer has commenced and is continuing to undertake commercially reasonable efforts to cure such Event of Default as promptly as reasonably practicable. Notwithstanding the foregoing, GSFA may terminate the Agreement effective immediately upon written notice to Customer for Customer's failure to pay any amount owed under the Agreement when due.

Notwithstanding any other provision of this Agreement, if Customer terminates a Product order in accordance with Section 9.a above, GSFA may elect to instead terminate the Agreement upon notice to Customer in accordance with Section 16 hereof. If GSFA terminates the Agreement in accordance with this Section 9.b, Customer shall pay the applicable tier of cancellation fee for all Products pursuant to Section 9.a above as if Customer had elected to terminate each applicable Product order.

c. Based on Discontinuation or Cancellation by Manufacturer. In the event that Manufacturer cancels a Product order (provided that such cancellation is not the result of an act by Customer in violation of the Agreement) or discontinues the manufacture of a Product prior to its completion and delivery: (i) if such Product is the only Product contemplated under the Agreement, then the Agreement shall terminate; or (ii) if additional Products are contemplated under the Agreement, then only the Product order for the applicable cancelled or discontinued Product shall be terminated. Such Agreement termination or Product termination, as applicable, shall be effective upon GSFA's written notice to Customer of such cancellation or discontinuance in accordance with Section 16 hereof. GSFA's only obligation to Customer in such event shall be the return of any Prepayment paid by Customer for the cancelled or discontinued Product. For the avoidance of doubt, the cancellation fees contemplated in Section 9.a hereof shall not apply in the event of a termination pursuant to this Section 9.c.

10. Customer's Obligations. Customer shall provide its timely and best efforts to cooperate with GSFA and Manufacturer during the Product manufacturing and Dealer Preparation process. Reasonable and timely cooperation includes, without limitation, Customer's providing timely information in response to any requests from Manufacturer or GSFA and the participation of Customer's authorized representatives in traveling to Manufacturer's facility for inspections and approval of the Product, including a final approval before the Product leaves Manufacturer's facility.

11. Representations and Warranties. Customer hereby represents and warrants to GSFA as of the Executed Date that the execution of the Agreement and the purchase of the Product(s) and performance of the other obligations of Customer under the Agreement have been approved by Customer in accordance with applicable general laws and, as applicable, Customer's charter, ordinances, purchasing policies, and other governing documents, and executed by the appropriate Customer employees, officials, and/or representatives, and funding for Customer's performance of its obligations under the Agreement has been duly budgeted and appropriated by Customer.

12. Standard Warranty. All applicable Manufacturer warranties are contained in the Product Warranties. Any additional warranties must be expressly approved in a writing signed by GSFA, and Customer acknowledges and agrees that Manufacturer will not be liable for any such additional warranties.

a. Disclaimer. OTHER THAN AS EXPRESSLY SET FORTH IN THE AGREEMENT, GSFA, ITS AFFILIATES, AND THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES, SHAREHOLDERS, AGENTS, OR REPRESENTATIVES, DO NOT MAKE ANY EXPRESS OR IMPLIED WARRANTIES WITH RESPECT TO THE PRODUCT (WHETHER RELATING TO THE CONDITION OR QUALITY OF THE PRODUCT, OR OTHERWISE) PROVIDED HEREUNDER OR OTHERWISE REGARDING THE AGREEMENT (INCLUDING, WITHOUT LIMITATION, WITH RESPECT TO ANY APPLICABLE DEALER PREPARATION), WHETHER ORAL OR WRITTEN, EXPRESS, IMPLIED OR STATUTORY. WITHOUT LIMITING THE FOREGOING, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, THE IMPLIED WARRANTY AGAINST INFRINGEMENT, THE IMPLIED WARRANTY OR CONDITION OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE ARE EXPRESSLY EXCLUDED AND DISCLAIMED BY GSFA. STATEMENTS MADE BY SALES CONSULTANTS OR IN PROMOTIONAL MATERIALS DO NOT CONSTITUTE WARRANTIES.

b. Exclusions of Incidental and Consequential Damages. In no event shall GSFA be liable for special, consequential, incidental, indirect or punitive damages incurred by Customer in connection with any matter arising out of or relating to the Agreement, or the breach thereof, even if GSFA has been advised of the possibility of such damages, and regardless of whether such damages arise out of breach of warranty, the Agreement, indemnity, whether resulting from non-delivery or from GSFA's own negligence, or otherwise, except and solely to the extent such damages arise from the gross negligence or willful misconduct of GSFA.

13. Default. The occurrence of one or more of the following events (each, an "**Event of Default**") shall constitute a default under the Agreement: (a) Customer's failure to pay any amounts due or to perform any of its obligations under the Agreement; (b) GSFA's failure to perform any of its obligations under the Agreement; (c) either Party becoming insolvent or becoming subject to bankruptcy or insolvency proceedings; (d) any representation made by either Party under the Agreement which is false in any material respect; (e) any action by Customer to dissolve, merge, consolidate or transfer a substantial portion of its property to another entity during the term of the Agreement; (f) any other material breach of the terms of the Agreement by a Party; or (g) a default or breach by Customer under any other agreement with GSFA or its affiliates.

14. Indemnification of GSFA. Customer shall indemnify, defend, and hold harmless GSFA, its agents, servants, successors and assigns from and against all losses, damages, injuries, claims, demands and expenses, including attorneys' fees and other legal expenses, of whatever nature ("**Damages**"), to the extent such Damages arise out of or in connection with: (i) Customer's breach of the Agreement, or (ii) Customer's use, storage, or operation of the Product following delivery, regardless of where, how, and by whom operated (excluding any negligent operation by GSFA). The indemnification and assumptions of liability and obligation herein provided shall continue in full force and effect notwithstanding the termination of the Agreement, whether by expiration of time, by operation of law or otherwise. This provision is not intended to and shall not constitute the exclusive remedy of the Parties under the Agreement; the Parties may seek indemnity from one another under other legal principles, whether based in equity or law, so long as they do not nullify or cancel the effects of this paragraph.

15. Force Majeure. GSFA shall not be responsible nor deemed to be in default of any provision of the Agreement on account of delays in performance due to causes which are beyond GSFA's or Manufacturer's control and which make GSFA's performance impracticable, including but not limited to wars, insurrections, strikes or labor unrest, riots, fires, storms, floods, other acts of nature, explosions, earthquakes, accidents, any act of federal, state or local government, failure or delays in transportation, inability to obtain necessary labor, supplies or manufacturing facilities, supply chain issues, allocation regulations or orders affecting materials, equipment, facilities or completed products, failure to obtain any required license or certificates, acts of God or the public enemy or terrorism, failure of transportation, disease, pandemics or epidemics, quarantine restrictions, failure of vendors (due to causes similar to those within the scope of this clause) to perform their agreements or labor troubles causing cessation, slowdown, or interruption of work.

16. Notice. Any notices, requests, consents, claims, demands, waivers and other communications required or permitted to be given hereunder must be given in writing at the address of each Party set forth below, or to such other address as either Party may substitute by written notice to the other in accordance with this Section 16, by one of the following methods: hand delivery; registered, express, or certified mail, return receipt requested, postage prepaid; or nationally recognized private express courier. All such communications will be deemed to have been given: (i) when delivered by hand (with written confirmation of receipt); (ii) on the third (3<sup>rd</sup>) calendar day after the date mailed, by registered, express or certified mail; or (iii) when delivered by the addressee if sent by a nationally recognized private express courier.

GSFA:

Golden State Fire Apparatus Inc.  
7400 Reese Road  
Sacramento, CA 95828

CUSTOMER:

To the address listed in the Product Proposal

17. Contradictions. In the event of a conflict between the Agreement and any Change Order, or between Change Orders, the terms of the latest executed Change Order shall control.

18. Manufacturer's Statement of Origin. It is agreed that the manufacturer's statement of origin ("**MSO**") for the Product covered by the Agreement, if applicable, shall be retained and remain in the possession of GSFA per California Department of Vehicles (DMV) directives. Notwithstanding the foregoing, GSFA shall provide Customer with the original MSO if the Customer is self-registering, and Customer shall comply with all good-faith Process of Duty and other DMV requirements applicable to the Product and retain its own MSO.

19. Assignment. The relationship of the Parties established under the Agreement is that of independent contractors and neither Party is a partner, employee, agent, or joint venturer of or with the other. Neither Party may assign its rights and obligations under the Agreement unless it has obtained the prior written approval of the other Party.

20. Governing Law; Jurisdiction; Disputes. Without regard to any conflict of laws provisions, the Agreement is to be governed by and under the laws of the state of California. Prior to taking any legal action that may and/or can arise out of the Agreement, the Parties shall first attempt mediation with an agreed upon mediator. If the Parties cannot agree upon a mediator within thirty (30) calendar days of the submission of written notice of a dispute in accordance with Section 16 hereof, if any disputed matter remain unresolved within thirty (30) calendar days of the commencement of discussions, or if any party refuses to meet, then either party may submit any remaining disputes concerning and/or claim regarding the Agreement and/or the terms and conditions herein to the Superior Court, County of Sacramento (and the parties expressly consent to exclusive personal jurisdiction and venue before such court).

21. Entire Agreement; Amendments. The Agreement, including the Product Proposal, its exhibits and all valid Change Orders, is the exclusive agreement between the Parties regarding the subject matter contained herein and therein. No change in, modification of, or revision of the Agreement shall be valid unless in writing and signed by duly authorized representatives of both Parties with authority to sign such amendments to the Agreement.

**END OF STANDARD TERMS AND CONDITIONS**

# **3 PRODUCT SPECIFICATIONS**

**Exhibit "B"**

**Customer:** Manteca Fire Department**Representative** Klockzien, Dave**Requirements Manager:****Description:** Type 1 Velocity Rescue**Chassis:** Velocity Chassis (Big Block), 2010**Body:** HDR, Non-Walk-In, Aluminum**Bid Number:** 990**Job Number:****Organization:** Golden State Fire Apparatus, Inc

OptionCode	Type	Option	ProposalText
0766614		Boiler Plates, Heavy Duty Rescue	<p>Golden State Fire Apparatus is pleased to submit a proposal to Manteca Fire Department for a <b>Pierce® Heavy Duty Rescue</b> per your request for quotation. The following paragraphs will describe in detail the apparatus, construction methods, and equipment proposed. This proposal will indicate size, type, model and make of components parts and equipment, providing proof of compliance with each and every item (except where noted) in the departments advertised specifications.</p> <p>PIERCE MANUFACTURING was founded in 1913. Since then, we have been building bodies with one philosophy, "BUILD THE FINEST". Our skilled craftsmen take pride in their work, which is reflected, in the final product. We have been building fire apparatus since the early "forties" giving Pierce Manufacturing over 75 years of experience in the fire apparatus market. Pierce Manufacturing has built and put into service more than 62,500 apparatus, including more than 33,900 on Pierce custom chassis designed and built specifically for fire and emergency applications. Our Appleton, Wisconsin facility has over 870,000 total square feet of floor space situated on approximately 105 acres of land. Our Bradenton, Florida facility has 300,000 square feet of floor space situated on approximately 38 acres of land.</p> <p>Our beliefs in high ethical standards are carried through in all of our commitments and to everyone with whom we do business. Honesty, Integrity, Accountability and Citizenship are global tenets by which we all live and work. Consequently, we neither engage in, nor have we ever been convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.</p> <p>Pierce has only one brand of fire apparatus "Pierce", ensuring you are receiving top of the line product that meets your specification.</p> <p>In accordance with the current edition of applicable NFPA standards, this proposal will specify whether the fire department, manufacturer, or apparatus dealership will provide required loose equipment.</p> <p>Images and illustrative material in this proposal are as accurate as known at the time of publication, but are subject to change without notice. Images and illustrative material is for reference only, and may include optional equipment and accessories and may not include all standard equipment.</p> <p><b>GENERAL DESIGN AND CONSTRUCTION</b></p> <p>To control quality, ensure compatibility, and provide a single source for service and warranty, the custom cab, chassis, pump module and body will be entirely designed, assembled/welded and painted in Pierce owned manufacturing facilities. This includes, but not limited to the cab weldment, the pumphouse module assembly, the chassis assembly, the body and the electrical system.</p> <p><b>QUALITY AND WORKMANSHIP</b></p> <p>Pierce has set the pace for quality and workmanship in the fire apparatus field. Our tradition of building the highest quality units with craftsmen second to none has been the rule right from the beginning and we demonstrate that ongoing commitment by: Ensuring all steel welding follows American Welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding follows American Welding society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding follows American welding Society B2.1-2000 requirements for structural welding of sheet metal. Our flux core arc welding uses alloy rods, type 7000 and is performed to American Welding Society standards A5.20-E70T1. Furthermore, all employees classified as welders are tested and certified to meet the American welding Society codes upon hire and every three (3) years thereafter. Pierce also employs an American Welding Society certified welding inspector in plant during working hours to monitor weld quality.</p> <p>Pierce Manufacturing operates a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International Organization for Standardization (ISO) specify the quality systems that are established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance is included with this proposal.</p> <p>In addition to the Quality Management system, we also employ a Quality Achievement Supplier program to ensure the vendors and suppliers that we utilize meet the high standards we demand. That is just part of our overall "Quality at the Source" program at Pierce.</p> <p>To demonstrate the quality of our products and services, a list of at least two (2) fire departments/municipalities that have purchased vehicles for a second time is provided.</p> <p><b>DELIVERY</b></p> <p>The apparatus will be delivered under its own power to ensure proper break-in of all components while the apparatus is still under warranty. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.</p> <p><b>MANUAL AND SERVICE INFORMATION</b></p> <p>At time of delivery, complete operation and maintenance manuals covering the apparatus will be provided. A permanent plate will be mounted in the driver's compartment specifying the quantity and type of fluids required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.</p> <p><b>SAFETY VIDEO</b></p> <p>At the time of delivery Pierce will also provide one (1) 39-minute, professionally produced apparatus safety video, in DVD format. A link to the video is also available on the Pierce Training website. This video will address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus, including the following: vehicle pre-trip inspection, chassis operation, pump operation, aerial operation, and safety during maintenance.</p> <p><b>PERFORMANCE TESTS</b></p> <p>A road test will be conducted with the apparatus fully loaded and a continuous run of no less than</p>



ten (10) miles. During that time the apparatus will show no loss of power nor will it overheat. The transmission drive shaft or shafts and the axles will run quietly and be free of abnormal vibration or noise. The apparatus when fully loaded will not have less than 25 percent nor more than 50 percent on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle. The apparatus will meet the current edition of applicable NFPA standards acceleration and braking requirements.

#### **SERVICE AND WARRANTY SUPPORT**

Pierce dealership support will be provided by Golden State EVS by operating a Pierce authorized service center. The service center will have factory-trained mechanics on staff versed in Pierce fire apparatus. The service facility will be located within twenty five (25) miles of the fire department.

In addition to the dealership, Pierce has service facilities located in both, Weyauwega, Wisconsin and Bradenton, Florida. Pierce also maintains a dedicated parts facility of over 100,000 square feet in Appleton, Wisconsin. The parts facility stocks in excess of \$5,000,000 in parts dedicated to service and replacement parts. The parts facility employs a staff dedicated solely for the distribution and shipment of service and replacement parts.

Service parts for the apparatus being proposed can be found via Pierceparts.com which, is an interactive online tool that delivers information regarding your specific apparatus as well as the opportunity to register for training classes.

As a Pierce customer you have the ability to view the complete bill of materials for your specific apparatus, including assembly drawings, piece part drawings, and beneficial parts notations. You will also have the ability to search the complete Pierce item master through a parts search function which offers all Pierce SKU's and descriptions offered on all Pierce apparatus. Published component catalogs, which include proprietary systems along with an extensive operator's manual library is available for easy reference.

Pierce Manufacturing maintains a dedicated service and warranty staff of over 35 personnel, dedicated to customer support, which also maintains a 24 hour 7 day a week toll free hot line, four (4) on staff EVTs, and offers hands-on repair and maintenance training classes multiple times a year.

#### **LIABILITY**

The successful bidder will defend any and all suits and assume all liability for the use of any patented process including any device or article forming a part of the apparatus or any appliance furnished under the contract.

#### **INSURANCE PROVIDED BY BIDDER**

##### **Commercial General Liability Insurance**

The successful bidder will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance:

Each Occurrence:

\$1,000,000

Products/Completed Operations Aggregate:

\$1,000,000

Personal and Advertising Injury:

\$1,000,000

General Aggregate:

\$2,000,000

Coverage will be written on a Commercial General Liability form. The policy will be written on an occurrence form and will include Contractual Liability coverage for bodily injury and property damage subject to the terms and conditions of the policy. The policy will include Owner as an additional insured when required by written contract.

##### **Commercial Automobile Liability Insurance**

The successful bidder will, during the performance of the contract, keep in force at least the following minimum limits of commercial automobile liability insurance and coverage will be written on a Commercial Automobile liability form:

Each Accident Combined Single Limit:

\$1,000,000

##### **Umbrella/Excess Liability Insurance**

The successful bidder will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:

Aggregate:

\$3,000,000

Each Occurrence:

\$3,000,000

The umbrella policy will be written on an occurrence basis and at a minimum provide excess to the bidder's General Liability and Automobile Liability policies.

The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.

Coverage will be provided by a carrier(s) rated A- or better by A.M. Best.

All policies will provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance will provide the following cancellation clause: Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate will show the purchaser as certificate holder.

#### **INSURANCE PROVIDED BY MANUFACTURER**

##### **Product Liability Insurance**

The manufacturer will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of Product Liability insurance:

Each Occurrence:

\$1,000,000

Products/Completed Operations Aggregate:

\$1,000,000

Coverage will be written on a Commercial General Liability form. The policy will be written on an occurrence form. The manufacturer's policy will include the owner as additional insured when required by written contract between the Owner and a Pierce authorized dealer.

		<p><b>Umbrella/Excess Liability Insurance</b></p> <p>The manufacturer will, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of umbrella liability insurance:</p> <p>Each Occurrence: \$25,000,000</p> <p>Aggregate: \$25,000,000</p> <p>The umbrella policy will be written on an occurrence basis and provide excess to the manufacturer's General Liability/Products policies.</p> <p>The required limits can be provided by one (1) or more policies provided all other insurance requirements are met.</p> <p>Coverage will be provided by a carrier(s) rated A- or better by A.M. Best.</p> <p>All policies will provide a 30-day notice of cancellation to the named insured. The Certificate of Insurance will provide the following cancellation clause: Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.</p> <p>Manufacturer agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with the bid. The certificate will show the purchaser as the certificate holder.</p>
0661794	Single Source Compliance	<p><b>SINGLE SOURCE MANUFACTURER</b></p> <p>Pierce Manufacturing, Inc. provides an integrated approach to the design and manufacture of our products that delivers superior apparatus and a dedicated support team. From our facilities, the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping and operators panel) and body will be entirely designed, tested, and hand assembled to the customer's exact specifications. The electrical system either hardwired or multiplexed, will be both designed and integrated by Pierce Manufacturing. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) will be provided by Pierce as a single source manufacturer. Pierce's single source solution adds value by providing a fully engineered product that offers durability, reliability, maintainability, performance, and a high level of quality.</p>
0584456	Manufacture Location, Appleton, Wisconsin	Your apparatus will be manufactured in Appleton, Wisconsin.
0584452	RFP Location: Appleton, Wisconsin	
0588609	Vehicle Destination, US	
0670275	Unit to be Similar in some Aspects, Excluding Pump Panel	<p><b>SPECIAL INSTRUCTIONS</b></p> <p>The apparatus being proposed will be designed and built to match the match 38180 cab as close as possible. However, some variation may be necessary due to changes in our manufacturing processes or our product offering. Revisions in NFPA guidelines and/or other regulations may also affect our ability to match the previous unit.</p>
0816491	Comply NFPA 1900 Changes Effective Jan 1, 2024, With Exceptions	<p><b>NFPA 2024 STANDARDS</b></p> <p>This unit will comply with the NFPA standards effective January 1, 2024, except for fire department directed exceptions. These exceptions will be set forth in the Statement of Exceptions.</p> <p>Certification of slip resistance of all stepping, standing and walking surfaces will be supplied with delivery of the apparatus.</p> <p>All horizontal surfaces designated as a standing or walking surface that are greater than 48.00" above the ground must be defined by a 1.00" wide line along its outside perimeter. Perimeter markings and designated access paths to destination points will be identified on the customer approval print and are shown as approximate. Actual location(s) will be determined based on materials used and actual conditions at final build. Access paths may pass through hose storage areas and opening or removal of covers or restraints may be required. Access paths may require the operation of devices and equipment such as the aerial device or ladder rack.</p> <p>A plate that is highly visible to the driver while seated will be provided. This plate will show the overall height, length, and gross vehicle weight rating.</p> <p>The manufacturer will have programs in place for training, proficiency testing and performance for any staff involved with certifications.</p> <p>An official of the company will designate, in writing, who is qualified to witness and certify test results.</p>
0533352	Special Services (Rescue) Fire Apparatus	
0588614	Vehicle Certification, Rescue	

0681285	Agency, Apparatus Certification, Rescue, U.L.	<p><b>NFPA COMPLIANCY</b> Apparatus proposed by the bidder will meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Fire department's specifications that differ from NFPA specifications will be indicated in the proposal as "non-NFPA".</p> <p><b>GENERATOR TEST</b> If the unit has a generator, the generator will be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results will be provided to the Fire Department at the time of delivery.</p> <p><b>BREATHING AIR TEST</b> If the unit has breathing air, Pierce Manufacturing will draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, <i>Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection</i>.</p>
0816495	Certification, Vehicle Inspection Program, NFPA 1900	<p><b>VEHICLE INSPECTION PROGRAM CERTIFICATION</b> To assure the vehicle is built to current NFPA 1900 standards, the apparatus, in its entirety, will be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus. A placard will be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.</p>
0766110	Consortium, Sourcewell	
0535579	Not Required, Unit of Measure, (no pump, no tank)	
0030006	Bid Bond Not Requested	<p><b>BID BOND NOT REQUESTED</b> A bid bond will not be included. If requested, the following will apply: All bidders will provide a bid bond as security for the bid in the form of a 5 percent bid bond to accompany their bid. This bid bond will be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond will be issued by an authorized representative of the Surety Company and will be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond will include language, which assures that the bidder/principal will give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the Basic One (1) Year Limited Warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract. Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle will apply only to the Basic One (1) Year Limited Warranty for such vehicle. Any surety bond related to the sale of a vehicle will not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision will prevail.</p>
0816569	Performance Bond, Not Requested, PPI Terms	<p><b>PERFORMANCE BOND NOT REQUESTED</b> A performance bond will not be included. If requested at a later date, one will be provided to you for an additional cost and the following will apply: The successful bidder will furnish a Performance and Payment bond (Bond) equal to 100 percent of the total contract amount within 30 days of the notice of award. Such Bond will be in a form acceptable to the Owner and issued by a surety company included within the Department of Treasury's Listing of Approved Sureties (Department Circular 570) with a minimum A.M. Best Financial Strength Rating of A and Size Category of XV. In the event of a bond issued by a surety of a lesser Size Category, a minimum Financial Strength rating of A+ is required. Bidder and Bidder's surety agree that the Bond issued hereunder, whether expressly stated or not, also includes the surety's guarantee of the vehicle manufacturer's Bumper to Bumper warranty period included within this proposal. Owner agrees that the penal amount of this bond will be simultaneously amended to 25 percent of the total contract amount upon satisfactory acceptance and delivery of the vehicle(s) included herein. Notwithstanding anything contained within this contract to the contrary, the surety's liability for any warranties of any type will not exceed three (3) years from the date of such satisfactory acceptance and delivery, or the actual Bumper to Bumper warranty period, whichever is shorter. Due to global supply chain constraints, any delivery date contained herein is a good faith estimate as of the date of this order/contract, and merely an approximation based on current information. Delivery updates will be made available, and a final firm delivery date will be provided as soon as possible. If the Producer Price Index of Components for Manufacturing [www.bls.gov Series ID: WPUID6112] ("PPI") has increased at a compounded annual growth rate of 5.0% or more between the month Pierce accepts the order ("Order Month") and a month 14 months prior to the then predicted Ready For Pickup date ("Evaluation Month"), then pricing may be updated in an amount equal to the increase in PPI over 5.0% for each year or fractional year between the Order Month and the Evaluation Month. The seller will document any such updated price for the customer's approval before proceeding and provide an option to cancel the order.</p>

0000007	Approval Drawing	<b>APPROVAL DRAWING</b> A drawing of the proposed apparatus will be prepared and provided to the purchaser for approval before construction begins. The Pierce sales representative will also be provided with a copy of the same drawing. The finalized and approved drawing will become part of the contract documents. This drawing will indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc. A "revised" approval drawing of the apparatus will be prepared and submitted by Pierce to the purchaser showing any changes made to the approval drawing.
0002928	Electrical Diagrams	<b>ELECTRICAL WIRING DIAGRAMS</b> Two (2) electrical wiring diagrams, prepared for the model of chassis and body, will be provided.
0564202	Velocity Chassis (Big Block), 2010	<b>VELOCITY CHASSIS</b> The Pierce Velocity® is the custom chassis developed exclusively for the fire service. Chassis provided will be a new, tilt-type custom fire apparatus. The chassis will be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis will be designed and manufactured for heavy-duty service, with adequate strength and capacity for the intended load to be sustained and the type of service required. The chassis will be the manufacturer's first line tilt cab.
0523786	Angle of Approach	<b>ANGLE OF APPROACH</b> The angle of approach will be 12 degrees. This will be effective with the truck in a loaded state.
0523787	Angle of Departure	<b>ANGLE OF DEPARTURE</b> The angle of departure will be 11.3 degrees. This will be effective with the truck in a loaded state.
0000110	Wheelbase	<b>WHEELBASE</b> The wheelbase of the vehicle will be 243.50.
0000070	GVW Rating	<b>GVW RATING</b> The gross vehicle weight rating will be 55,000.
0000203	Frame Rails, 13.38 x 3.50 x .375, Qtm/AXT/Imp/Vel	<b>FRAME</b> The chassis frame will be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus. The side rails will have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle. Each rail will have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle. The frame rails will be constructed of 120,000 psi yield strength heat-treated 0.38" thick steel with 3.50" wide flanges.
0889469	Frame Liner, "C/Inv L" 12.50" x 3.00" x .25", AXT/Vel/Imp/Enf, 56" QVal	<b>FRAME REINFORCEMENT</b> In addition, a mainframe internal liner will be provided. The liner will be an internal "C" design that steps to an internal "L" design over the rear axle. It will be heat-treated steel measuring 12.50" x 3.00" x 0.25" through the front portion of the liner, stepping to 9.38" x 3.00" x 0.25" through the rear portion of the liner. Each liner will have a section modulus of 13.58 cubic inches, yield strength of 110,000 psi, and rbm of 1,494,042 in-lb. Total rbm at wheelbase center will be 4,391,869 in-lb. The frame liner will be mounted inside of the chassis frame rail and extend the full length of the frame.

## ATTACHMENT 1

0508846	Axle, Front, Oshkosh TAK-4, Non Drive, 24,000 lb, Velocity	<p><b>FRONT NON DRIVE AXLE</b></p> <p>The Oshkosh TAK-4® front axle will be of the independent suspension design with a ground rating of 24,000 lb.</p> <p>Upper and lower control arms will be used on each side of the axle. Upper control arm castings will be made of 100,000-psi yield strength 8630 steel and the lower control arm casting will be made of 55,000-psi yield ductile iron.</p> <p>The center cross members and side plates will be constructed out of 80,000-psi yield strength steel.</p> <p>Each control arm will be mounted to the center section using elastomer bushings. These rubber bushings will rotate on low friction plain bearings and be lubricated for life. Each bushing will also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations.</p> <p>There will be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension.</p> <p>The upper control arm will be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load.</p> <p>Camber at load will be 0 degrees for optimum tire life.</p> <p>The ball joint bearing will be of low friction design and be maintenance free.</p> <p>Toe links that are adjustable for alignment of the wheel to the center of the chassis will be provided.</p> <p>The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle.</p> <p>The steering linkage will provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase.</p> <p>The axle will have a turning angle of up to 45 degrees.</p>
0090914	Suspension, Front TAK-4, 24,000 lb, Qtm/AXT/Vel/Enf/SFR	<p><b>FRONT SUSPENSION</b></p> <p>Front Oshkosh TAK-4™ independent suspension will be provided with a minimum ground rating of 24,000 lb.</p> <p>The independent suspension system has been designed to provide maximum ride comfort. The design will allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment.</p> <p>Each wheel will have a torsion bar type spring. In addition, each front wheel end will also have energy absorbing jounce bumpers to prevent bottoming of the suspension.</p> <p>The suspension design will be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms.</p> <p>The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side.</p> <p>The independent suspension was put through a durability test that simulated 140,000 miles of inner city driving.</p>
0087572	Shock Absorbers, KONI, TAK-4, Qtm/AXT/Imp/Vel/Enf	<p><b>FRONT SHOCK ABSORBERS</b></p> <p>KONI heavy-duty telescoping shock absorbers will be provided on the front suspension.</p>
0000322	Oil Seals, Front Axle	<p><b>FRONT OIL SEALS</b></p> <p>Oil seals with viewing window will be provided on the front axle.</p>
0802640	Tires, Front, Goodyear, Armor Max MSA, 445/65R22.50, 20 ply	<p><b>FRONT TIRES</b></p> <p>Front tires will be Goodyear radials 445/65R22.50, 20 ply all-position Armor Max MSA tread, rated for 24,600 lb maximum axle load and 68 mph maximum speed.</p>
0019618	Wheels, Front, Alcoa, 22.50" x 13.00", Aluminum, Hub Pilot	<p>The tires will be mounted on Alcoa 22.50" x 13.00" polished aluminum disc type wheels with a ten (10) stud, 11.25" bolt circle.</p>
0833634	SP Axle, Rear, Oshkosh TAK-4 T3, 40,000 lb, Rear Steer, 2 Axle, Imp/Vel/Enf, HDR	<p><b>REAR AXLE</b></p> <p>The rear axle will be a tandem axle assembly, of the independent suspension design, with the ability to support a mechanical rear axle steering system. Tandem rear axles will have a ground rating of 40,000 lb.</p> <p>The rear axles will be designed for specific use of the independent suspension.</p> <p>The rear independent suspension driving axles will be equipped with a carrier reduction of 1.69 to 1.00 with a planetary wheel end reduction of 3.55 to 1.00. Driving torque will be transmitted from the center differential to the planetary wheel drive by means of a half shaft.</p> <p>Oil fills and level checks will be required at the center differential and the planet wheel end locations.</p> <p>An inter-axle differential, which divides torque evenly between axles, will be provided with an indicator light mounted on the cab instrument panel.</p> <p><b>REAR AXLE STEERING</b></p> <p>The tandem rear axle assembly will include a mechanical rear steering system. The mechanical rear steering system will be applied to both rear axles.</p> <p>The steering geometry will be designed to minimize tire scrub of the rear tandem axle tires while reducing the overall turning diameter of the apparatus.</p> <p>The mechanical rear steering system will not use electronic controls and will not have a means to be disengaged. Coordinated steering is the only steering mode supported by the mechanical steering system.</p> <p>Rear steering system is actuated by a mechanical means of connecting the front master/slave steering gear system to a rear axle master/slave steering gear system.</p>

0818721	Top Speed of Vehicle, 68 MPH/109 KPH, Non-NFPA/ULC 2024	<b>TOP SPEED OF VEHICLE</b> NFPA 1900 and ULC 515, 2024 edition requires limits on the top speed of vehicles. NFPA 7.16.1 requires that the maximum top speed of fire apparatus with a GVWR over 33,000 lb will not exceed either 68 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. NFPA 7.16.2 requires that if the combined water tank and foam agent tank on the fire apparatus exceed 1250 gallons or the GVWR of the vehicle is over 50,000 lb, the maximum top speed of the apparatus will not exceed either 60 mph or the manufacturer's maximum fire service speed rating for the tires installed on the apparatus, whichever is lower. It is the intention of the standard to improve safety by limiting the speed of all apparatus to 68 mph, and tankers or heavy apparatus to 60 mph. By requesting an exception to this requirement, the purchasing authority is consciously choosing to operate their apparatus at speeds above the limits designated as safe speeds by the NFPA Technical Committee on Fire Department Apparatus. The top speed of the apparatus as manufactured exceeds the NFPA requirements. Per fire department specification of a top speed that exceeds NFPA requirements, the apparatus will be non-compliant to NFPA 1900 and ULC 515 standards at time of contract execution. The rear tires being specified have a top speed limit of 68 mph / 109 kph from the tire manufacturer.
0888477	Suspen, Rear, Oshkosh TAK-4, Independent, 40,000 lb, HDR	<b>REAR SUSPENSION</b> The rear suspension will be an Oshkosh TAK-4® independent type with a minimum ground rating of 40,000 lbs. The independent suspension will be configured with upper and lower control arms with a spring seat for a coil spring mounted to the lower control arm. The spring tower will be integrated into the suspension frame mount. Each control arm has elastomeric bushings at the inner pivot locations with a ball joint bearing at the outer pivot location. All suspension pivot joints will be of a maintenance free design. The rear independent suspension will be provided with steering toe links providing tow adjustments and maintaining wheel control throughout the range of wheel travel. The independent suspension will be designed to provide maximum ride quality when traveling at highway speeds over improved roads or a moderate speeds over secondary road surfaces with minimal transfer of shock and vibration to the apparatus. Each independent suspension will utilize a coil type of spring. The design will allow for removal of the spring without the use of any spring compression. The rear suspension will provide a minimum wheel travel of 10.00", 6.00" jounce and 4.00" of rebound.
0000485	Oil Seals, Rear Axle	<b>REAR OIL SEALS</b> Oil seals will be provided on the rear axle(s).
0802654	Tires, Rear, Goodyear, Armor Max MSA, 445/65R22.5, 20 ply, (AWS/IRS), Tandem	<b>REAR TIRES</b> Rear tires will be four (4) Goodyear radials 445/65R22.50, 20 ply all-position Armor Max MSA tread, rated for 49,200 lb maximum axle load and 68 mph maximum speed.
0826900	Wheels, Rear, 22.50" x 13.00", Steel, Hub Pilot, Tandem, AWS/IRS	The tires will be mounted on 22.50" x 13.00" steel disc type wheels with a ten (10) stud, 11.25" bolt circle.
0568081	Tire Balancing, Counteract Beads	<b>TIRE BALANCE</b> All tires will be balanced with Counteract balancing beads. The beads will be inserted into the tire and eliminate the need for wheel weights.
0819008	No Tire Pressure Indicator, Fire Department Omits, Non-NFPA 2024 Compliant	<b>TIRE PRESSURE INDICATOR</b> NFPA 1900, 2024 edition, section 7.14.6 requires each tire be equipped with a visual indicator or monitoring system that indicates tire pressure. Per Fire Department specification, a tire pressure indicator is not on the apparatus as manufactured. This apparatus will be non-compliant to NFPA 1900 standards effective at time of contract execution.
0801932	Lug Nut, Covers, Stainless Steel	<b>LUG NUT COVERS</b> Stainless steel lug nut covers will be installed on all lug nuts.
0003245	Axle Hub Covers w/center hole, S/S, Front Axle	<b>FRONT HUB COVERS</b> Stainless steel hub covers will be provided on the front axle. An oil level viewing window will be provided.
0002045	Mud Flap, Front and Rear, Pierce Logo	<b>MUD FLAPS</b> Mud flaps with a Pierce logo will be installed behind the front and rear wheels.

0617577	Chocks, Wheel, Worden HWG- SB, Super Gripper	<b>WHEEL CHOCKS</b> There will be two (2) pairs of Worden Safety Products, Model HWG-SB, wheel chocks provided. Heavy Duty, large molded aluminum wheel chock with solid bottom, natural cast aluminum finish.
0646364	Mounting Brackets, Chocks, Worden Safety, Model U815T	<b>Wheel Chock Brackets</b> There will be two (2) pairs of Worden Safety, Model U815T, mounting wheel chock brackets provided. The brackets will be mounted forward or rear wheel on each side under body.
0821337	ABS Wabco Brake System, Tandem Rear Axle, Tak-4, NFPA 1900/ULC	<b>ANTI-LOCK BRAKE SYSTEM</b> The vehicle will be equipped with a Wabco 4S4M, anti-lock braking system. The ABS will provide a four (4) channel anti-lock braking control on both the front and rear wheels (rear axle of tandems). A digitally controlled system that utilizes microprocessor technology will control the anti-lock braking system. Each wheel sensor will be monitored by the system. When any particular wheel begins to lockup, a signal will be sent to the control unit. This control unit then will reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system will eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.
0030185	Brakes, Knorr/Bendix 17", Disc, Front, TAK-4	<b>BRAKES</b> The service brake system will be full air type. The front brakes will be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance. The brake system will be certified, third party inspected, for improved stopping distance.
0581433	Brakes, Bendix, Cam, Rear, 16.50 x 7.00"	The rear brakes will be Bendix®, Model ES1657D, 16.50" x 7.00" cam operated with automatic slack adjusters.
0735527	Air Compressor, Brake, Wabco 26.8 CI, Paccar	<b>AIR COMPRESSOR, BRAKE SYSTEM</b> The air compressor will be a Wabco single piston compressor with a 26.8 CI displacement.
0000789	Brake Reservoirs, Five	<b>BRAKE SYSTEM</b> The brake system will include: Bendix dual brake treadle valve Heated automatic moisture ejector on air dryer Total air system capacity of 6,653 cubic inches Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi Spring set parking brake system Parking brake operated by a push-pull style control valve A parking "brake on" indicator light on instrument panel Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, will be provided with an automatic spring brake application at 40 psi A pressure protection valve will be provided to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa). Quarter turn drain valves on each air tank The air tank will be primed and painted to meet a minimum 750 hour salt spray test. The air tanks will be painted black #98. To reduce the effects of corrosion, the air tank will be mounted with stainless steel brackets.
0568012	Air Dryer, Wabco System Saver 1200, Heater, 2010	<b>BRAKE SYSTEM AIR DRYER</b> The air dryer will be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100 watt heater.
0000790	Brake Lines, Nylon	<b>BRAKE LINES</b> Color-coded nylon brake lines will be provided. The lines will be wrapped in a heat protective loom in the chassis areas that are subject to excessive heat.
0544415	Inlet/Outlet, Air, w/Disconnect Fitting, Location	<b>AIR INLET/OUTLET</b> One (1) air inlet/outlet will be installed with the female coupling located (1) left side cab step well as far forward as possible. This system will tie into the "wet" tank of the brake system and include a check valve in the inlet line and an 85 psi pressure protection valve in the outlet line. The air outlet will be controlled by a needle valve. A mating male fitting will be provided with the loose equipment. The air inlet will allow a shoreline air hose to be connected to the vehicle. This will allow station air to be supplied to the brake system of the vehicle to insure constant air pressure.

0014130	Air Tank, Additional for Extra Air Horn Capacity	<b>ADDITIONAL AIR TANK FOR AIR HORN</b> An additional air tank with 1,454 cubic inch displacement will be provided to increase the capacity of the air system. This tank will be dedicated for air horn use. The air tank will be primed and painted to meet a minimum 750 hour salt spray test. To reduce the effects of corrosion, the air tank will be mounted with stainless steel brackets. The air tank(s) will be painted same as frame color. The output flow of the engine air compressor varies with engine rpm. Full compressor output is only achieved at governed engine speed. Engine speed may be limited by generators, pumps and other PTO driven options.
0642617	Air Line, S/S Braid, Air Governor To Air Dryer	<b>AIR LINE</b> The air line from the air compressor governor to the air dryer will be stainless steel braid.
0808514	Engine, Paccar MX, 510HP, 1850 lb-ft W/OBD, EPA 2027, Velocity	<b>ENGINE</b> The chassis will be powered by an electronically controlled engine as described below: Make: Paccar Model: MX Power: 510 hp at 1600rpm Torque: 1850 lb-ft at 1000rpm Governed Speed: 1900 rpm Emissions Certification: EPA 2027 Fuel: Diesel Cylinders: Six (6) Displacement: 13.7L Starter: DP60 Fuel Filters: Dual cartridge style with check valve, water separator, and water in fuel sensor The engine will include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system will give the owner or repair technician access to state of health information for various vehicle sub systems. The system will monitor vehicle systems, engine and after treatment. The system will illuminate a malfunction indicator light on the dash console if a problem is detected.
0811409	Not Required, Engine Contingency Adjustment	
0001244	High Idle w/Electronic Engine, Custom	<b>HIGH IDLE</b> A high idle switch will be provided, inside the cab, on the instrument panel, that will automatically maintain a preset engine rpm. A switch will be installed, at the cab instrument panel, for activation/deactivation. The high idle will be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light will be provided, adjacent to the switch. The light will illuminate when the above conditions are met. The light will be labeled "OK to Engage High Idle."
0735687	Engine Brake, Fully Integrated, Paccar MX13 Engine	<b>ENGINE BRAKE</b> The compression release brake option is a fully integrated MX engine braking system. It utilizes the turbocharger and back pressure valve, but adds in a hydraulically operated compression brake to increase overall retarding power. To maximize the effectiveness of the compression brake the MX engine brake system works in conjunction with the turbocharger and back pressure valve. The driver will be able to turn the engine brake system on/off and have a high, medium and low setting.
0733852	Clutch, Fan, Air Actuated, Paccar, VEL	<b>CLUTCH FAN</b> A fan clutch will be provided. The fan clutch will be automatic when the pump transmission is in "Road" position and constantly engaged when in "Pump" position.
0734434	Air Intake, Water & Ember Screen, Paccar, VEL	<b>ENGINE AIR INTAKE</b> The engine air intake will be located above the engine cooling package. It will draw fresh air from the front of the apparatus through the radiator grille. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine. The ember separator will be easily accessible by tilting the cab.



0814375	Exhaust System, Horizontal, Right Side	<b>EXHAUST SYSTEM</b> The exhaust system will be stainless steel from the turbo to the engines aftertreatment device. The exhaust system will include an aftertreatment device to meet current EPA standards. An insulation wrap will be provided on all exhaust pipe between the turbo and the aftertreatment device to minimize the transfer of heat to the cab. The exhaust will terminate horizontally ahead of the right side rear wheels and will be flush with the body rub rail. The exhaust pipes will be aluminized steel. There will be an aluminized steel exhaust diffuser reduced to 5.00" in the center to accommodate the fire department's air recovery system with a standard straight tip on the end provided to reduce the temperature of the exhaust as it exits. Heat deflector shields will be provided to isolate chassis and body components from the heat of the tailpipe diffuser.
0734440	Radiator, VEL, Paccar	<b>RADIATOR</b> The radiator and the complete cooling system will meet or exceed the current edition of applicable NFPA and engine manufacturer cooling system standards. For maximum corrosion resistance and cooling performance, the entire radiator core will be constructed using long life aluminum alloy. The radiator core will consist of aluminum fins, having a serpentine design, brazed to aluminum tubes. Supply tank will be made of heavy duty glass-reinforced nylon and the return tank will be made of aluminum. Both tanks will be crimped onto the core assembly using header tabs and a compression gasket to complete the radiator core assembly. There will be a full steel frame around the inserts to enhance cooling system durability and reliability. The radiator will be compatible with commercial antifreeze solutions. The radiator assembly will be isolated from the chassis frame rails with rubber isolators to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven terrain. The radiator will include a de-aeration/expansion tank. For visual coolant level inspection, the radiator will have a built-in sight glass. The radiator will be equipped with a 15 psi pressure relief cap. A drain port will be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system. Shields or baffles will be provided to prevent recirculation of hot air to the inlet side of the radiator.
0511425	Cooling Hoses, Rubber	<b>COOLANT LINES</b> Gates, or Goodyear, rubber hose will be used for all engine coolant lines installed by the chassis manufacturer. Hose clamps will be stainless steel "constant torque type" to prevent coolant leakage. They will react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.
0041125	Fuel Tank, 65 Gallon, Dual Fills	<b>FUEL TANK</b> A 65 gallon fuel tank will be provided and mounted at rear of chassis. The tank will be constructed of 12-gauge, hot rolled steel. It will be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank will be mounted with stainless steel straps. A .75" drain plug will be provided in a low point of the tank for drainage. A fill inlet will be located on the left hand and right hand sides of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only." A .50" diameter vent will be provided running from top of tank to just below fuel fill inlets. The tank will meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume. Servicing the fuel tank pick-up tubes and fuel gauge sending unit will be capable of being accomplished by draining fuel and dropping tank.
0001129	Lines, Fuel	All fuel lines will be provided as recommended by the engine manufacturer.
0807989	DEF Tank, 7.3 Gallon, LS Fill, Under Cab,Paccar,Treadplate Shield and Cover, VEL	<b>DIESEL EXHAUST FLUID TANK</b> A 7.3 gallon diesel exhaust fluid (DEF) tank will be provided and mounted under the cab on the driver's side. A fill inlet will be provided on the driver's side of the cab. The tank will meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing. The tank will include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing. A housing shield will be provided to protect the DEF tank and the surrounding insulation from road debris including an outboard cover plate with a cut out for the fill neck.
0552793	Not Required, Fuel Priming Pump	
0802279	Shutoff Valve, Fuel Lines (2) @ Above Transmission, Paccar	<b>FUEL SHUTOFF</b> Two (2) shutoff valves will be installed in the fuel lines at the bulkhead junctions above the transmission.
0891206	Cooler, Engine Fuel, Paccar MX13	<b>FUEL COOLER</b> An air to fuel cooler will be installed in the engine fuel return line.

0011125	Door, Fuel Fill Painted Job Color	<b>FUEL FILL DOOR</b> Fuel fill door will be painted job color.
0019441	Drain Plug, Fuel Tank, Magnetic, In Place Of Standard	<b>FUEL TANK DRAIN</b> A fuel tank drain, magnetic plug, will be installed on the under side of the fuel tank.
0597656	Fuel Lines, Extended, Pumper/Aerial	<b>FUEL LINES</b> The fuel lines for the fuel tank will be a minimum of 4' longer than standard. This will allow the lines to be coiled above the fuel tank and aid in an easier removal of the fuel tank if necessary.
0690880	No Selection Required From This Category	
0887546	Trans, Allison 6th Gen, 4000 EVS P, w/Prognostics, Imp/Vel/SFR/Enf	<b>TRANSMISSION</b> An Allison 6th generation, Model EVS 4000P, electronic, torque converting, automatic transmission will be provided. The transmission will be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display will indicate when service is due. Two (2) PTO openings will be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock). A transmission temperature gauge with an amber light and buzzer will be installed on the cab instrument panel.
0625331	Transmission, Shifter, 6-Spd, Push Button, 4000 EVS	<b>TRANSMISSION SHIFTER</b> A six (6)-speed push button shift module will be mounted to right of driver on console. Shift position indicator will be indirectly lit for after dark operation. The transmission ratio will be: 1st 3.51 to 1.00 2nd 1.91 to 1.00 3rd 1.43 to 1.00 4th 1.00 to 1.00 5th 0.75 to 1.00 6th 0.64 to 1.00 R 4.80 to 1.00
0684459	Transmission Oil Cooler, Modine, External	<b>TRANSMISSION COOLER</b> A Modine plate and fin transmission oil cooler will be provided using engine coolant to control the transmission oil temperature.
0801876	Fluid, 4000 Series Trans, Allison Approved TES-668 Synthetic, IPOS, Custom	<b>TRANSMISSION FLUID</b> The transmission will be provided with TranSynd, or other Allison approved TES-668 heavy duty synthetic transmission fluid.
0001375	Driveline, Spicer 1810	<b>DRIVELINE</b> Drivelines will be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints. The shafts will be dynamically balanced before installation. A splined slip joint will be provided in each driveshaft where the driveline design requires it. The slip joint will be coated with Glidecoat® or equivalent.
0734211	Steering, Sheppard M110 w/Tilt, TAK-4, Paccar Pump, w/Cooler, Paccar	<b>STEERING</b> Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, will be provided. For reduced system temperatures, the power steering will incorporate an air to oil cooler and Paccar hydraulic pump with integral pressure and flow control. All power steering lines will have wire braded lines with crimped fittings. A tilt and telescopic steering column will be provided to improve fit for a broader range of driver configurations.
0001544	Not Required, Steering Assist Cylinder on Front Axle	

0509230	Steering Wheel, 4 Spoke without Controls	<b>STEERING WHEEL</b> The steering wheel will be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design.
0690274	Logo/Emblem, on Dash	<b>LOGO AND CUSTOMER DESIGNATION ON DASH</b> The dash panel will have an emblem containing the Pierce logo and customer name. The emblem will have three (3) rows of text for the customer's department name. There will be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row. The first row of text will be: Manteca The second row of text will be: Fire The third row of text will be: Department
0612391	Oil, Steering Gear, 15W40, CK-4	<b>STEERING GEAR OIL</b> 15W 40, CK-4 oil will be provided for the steering gear.
0621041	Winch, Warn, Zeon 10, 10,000 lb. Portable Receiver Type, 80' Wire Rope	<b>WINCH</b> A WARN™, Model ZEON® 10 multi-mount, part number 90340, 10,000 lb portable 12V electric winch will be provided. The winch will mount to the vehicle receiver hitch described elsewhere in this proposal and be held in place with a locking hardened pin. A heavy gauge wire and electrical plug will be provided for quick connection to the vehicle electrical system.. The winch will be provided with 80' of .375" wire rope cable with clevis hook. An accessory remote control cable, part number 13447, 40' long, will be supplied. A label will be placed on or near the receiver that states the maximum winch load rating and the maximum rope load rating that the receiver can support.
0633464	Bumper, Non-Extended, Steel, Painted, Imp/Vel	<b>BUMPER</b> A one (1) piece bumper manufactured from 0.25" formed steel with a 0.38" bend radius will be provided. The bumper will be a minimum of 10.00" high with a 1.50" top and bottom flange. The bumper will be 95.28" wide with 45 degree corners. To provide adequate support strength, the bumper will be mounted directly to the front of the C channel frame. The frame will be a bolted modular extension frame constructed of 50,000 psi tensile steel. The bumper will be metal finished and painted to match the lower job color of the apparatus. <b>Gravel Pan</b> A gravel pan, constructed of bright aluminum treadplate, will be furnished between the bumper and the cab face. The pan will be properly supported from the underside to prevent flexing and vibration.
0725516	No Selection Required, No Bumper Tray Selected	
0614646	No Lift & Tow Package, Imp/Vel, AXT, SFR/Enf	
0072306	Tow Eyes, Chrome, Extended Out Front of Bumper	<b>TOW EYES</b> Two (2) chrome tow eyes will be mounted through the front face of the bumper. The inner and outer edges of the tow eyes will have a .25" radius. Tow eyes will be mounted directly to the bumper frame. Cutouts will be provided in the front face of stainless steel bumper to allow tow eyes to extend out the front. The tow eyes will be designed and positioned to allow up to a 9,000 lb straight horizontal pull in line with the centerline of the vehicle. The tow eyes will not be used for lifting of the apparatus.
0822662	SP Receiver, Portable Winch, (3), Front Bumper Extension, 10K, Front/Ends	<b>PORTABLE WINCH RECEIVERS</b> Three (3) portable winch receivers will be installed under the front bumper extension of the apparatus. One (1) will be facing forward and one (1) will be facing each side of the bumper. On the forward facing receiver there will be 2.00" of clearance by the Q2B to allow the winch to attach. The winch receiver will be constructed of heavy steel tubing, reinforced to the bumper extension framework for the receiving portion. The winch receivers will each be rated for 10,000 lb. A single electrical plug will be provided under the center of the bumper extension, able to supply power to any receiver.
0698960	Coating, Top Flange, Front Bumper, Outside Exterior, UL-LX Coating, Black	<b>FRONT BUMPER UL-LX COATING</b> Protective black UL-LX® coating will be provided on the outside exterior of the top front bumper flange. It will not be sprayed on the underside of the flange. The lining will be properly installed by an authorized UL-LX dealer.

Lights, Driving, WIn M4DWR, Recess  
In Bumper, Hdlt Sw & Sep Sw, Trim  
Fet

**COMBINATION DRIVING/WARNING LIGHTS****ATTACHMENT 1**

There will be two (2) Whelen®, Model M4DWR, 12Vdc combination driver/warning LED lights with clear lenses and chrome trim provided. One (1) on each side recessed into the front bumper. The driving LED's will be switched on with the headlight switch and a separate switch that will include an internal indicator. This switch will be properly identified and installed on the switch panel within reach of the driver. The driving LED lights will be able to switch on or off independently of the low beam headlights, and will be reset to an off position whenever the headlight switch or the vehicle ignition switch are set to the off position. The driving LED lights will also be deactivated when the high beam headlights are activated, when the headlight switch is turned off or when the ignition switch is turned off. The red warning LED's of the lights will flash with the other front warning lights, and will disable the driving light function when active.

**CAB**

The Velocity cab will be designed specifically for the fire service and will be manufactured by Pierce Manufacturing.

To provide quality at the source and single source customer support, the cab will be built by the apparatus manufacturer in a facility located on the manufacturer's premises.

For reasons of structural integrity and enhanced occupant protection, the cab will be of heavy duty design, constructed to the following minimal standards.

The cab will have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts) and rear wall areas. The A-pillar will be constructed of 0.25" heavy wall extrusions joined by a solid A356-T6 aluminum joint casting. The B-pillar and C-pillar will also be constructed from 0.25" heavy wall extrusions. The rear wall will be constructed of two (2) 4.00" x 2.00" outer aluminum extrusions and two (2) 3.00" x 2.00" inner aluminum extrusions. All main vertical structural members will run from the floor to 7.50" x 3.50" x 0.125" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.75" thick corner casting at each of the front corners of the roof assembly.

The front of the cab will be constructed of a 0.25" thick firewall, covered with a 0.125" front skin (for a total thickness of 0.38"), and reinforced with 24.50" wide x 10.00" deep x 0.50" thick supports on each side of the engine tunnel. The cross-cab support will be welded to the A-pillar, 0.25" firewall, and engine tunnel, on the left and right sides.

The cab floors will be constructed of 0.1875" thick aluminum plate and reinforced at the firewall with an additional 0.25" thick cross-floor support providing a total thickness of 0.44" of structural material at the front floor area. The front floor area will also be supported with three (3) 0.50" plates bolted together that also provides the mounting point for the cab lift. This tubing will run from the front of the cab to the 0.1875" thick engine tunnel, creating the structure to support the forces created when lifting the cab.

The cab will be a full-tilt style. A 3-point cab mount system with rubber isolators will improve ride quality by isolating chassis vibrations from the cab.

The crew cab will be a totally enclosed design with the interior area completely open to improve visibility and verbal communication between the occupants.

The centerline of front axle to the rear of the cab will be 70.00" long.

The forward cab section will have an overall height (from the cab roof to the ground) of approximately 102.00". The crew cab section will have a 10.00" raised roof, with an overall cab height of approximately 122.00". The raised portion will start at the most forward point of the B-pillar and continue rearward to the back of the cab. The overall height listed will be calculated based on a truck configuration with the lowest suspension weight ratings, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension will increase the overall height listed.

An enclosure will be integrated into the raised roof of the crew cab to accommodate the mounting of a mast light. The purpose of the enclosure is to conceal the mast light and not disturb cab aesthetics. The cab will appear to have a 20.00" raised roof with the added enclosure.

The cab will have an interior width of not less than 93.50". The driver and passenger seating positions will have a minimum 24.00" clear width at knee level.

To reduce injuries to occupants in the seated positions, proper head clearance will be provided. The floor-to-ceiling height inside the forward cab will be no less than 60.25". The floor-to-ceiling height inside the crew cab will be no less than 62.95" in the center position and 68.75" in the outboard positions.

The crew cab will measure a minimum of 57.50" from the rear wall to the backside of the engine tunnel (knee level) for optimal occupant legroom.

**FENDER LINERS**

Full-circular, aluminum, inner fender liners in the wheel wells will be provided.

**PANORAMIC WINDSHIELD**

A one (1)-piece, safety glass windshield with more than 2,802 square inches of clear viewing area will be provided. The windshield will be full width and will provide the occupants with a panoramic view. The windshield will consist of three (3) layers: the outer light, the middle safety laminate, and the inner light. The 0.114" thick outer light layer will provide superior chip resistance. The middle safety laminate layer will prevent the windshield glass pieces from detaching in the event of breakage. The inner light will provide yet another chip resistant layer. The cab windshield will be bonded to the aluminum windshield frame using a urethane adhesive. A custom frit pattern will be applied on the outside perimeter of the windshield for a finished automotive appearance.

**WINDSHIELD WIPERS**

Three (3) electric windshield wipers with a washer, in conformance with FMVSS and SAE requirements, will be provided. The wiper blades will be 21.65" long and together will clear a minimum of 1,783 square inches of the windshield for maximum visibility in inclement weather. The windshield washer fluid reservoir will be located at the front of the vehicle and be accessible through the access hood for simple maintenance.

**FAST SERVICE ACCESS FRONT TILT HOOD**

A full-width access hood will be provided for convenient access to engine coolant, steering fluid, wiper fluid, cab lift controls, headlight power modules, and ember separator. The hood will also provide complete access to the windshield wiper motor and components. The hood will be contoured to provide a sleek, automotive appearance. The hood will be constructed of two (2) fiberglass panels bonded together and will include reinforcing ribs for structural integrity. The hood will include air cylinders to hold the hood in open and closed positions, and a heavy duty latch system that will meet FMVSS 113 (Hood Latch System). The spring-loaded hood latch will be located at the center of the hood with a double-action release lever located behind the Pierce logo. The two (2)-step release requires the lever first be pulled to the driver side until the hood releases from the first latch (primary latch) then to the passenger side to fully release the hood (secondary latch).

**ATTACHMENT 1**

0894910	Engine Tunnel, Foil Insulation w/Mech Fasteners, Imp/Vel FR, w/T3 Rear Axle	<b>ENGINE TUNNEL</b> To provide structural strength, the engine tunnel sidewalls will be constructed of 0.50" aluminum plate that is welded to both the 0.25" firewall and 0.38" heavy wall extrusion under the crew cab floor. To maximize occupant space, the top edges will be tapered. The engine hood will be insulated for protection from heat and sound. Perforated foil faced insulation will be over a 1.00" thick closed cell foam affixed with pressure sensitive adhesive and further secured with mechanical fasteners. Thermal rating for this insulation will be -40 degrees Fahrenheit to 300 degrees Fahrenheit. The noise insulation keeps the dBA level within the limits stated in the current edition of applicable NFPA standards.
0887600	Cab Insulation, Impel/Velociry FR	<b>INTERIOR CAB INSULATION</b> The cab will include 1.50" insulation in the ceiling, 3.00" insulation in the side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.
0677478	Rear Wall, Exterior, Cab, Aluminum Treadplate	<b>CAB REAR WALL EXTERIOR COVERING</b> The exterior surface of the rear wall of the cab will be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.
0122466	Cab Lift, Elec/Hyd, w/Manual Override, Imp/Vel	<b>CAB LIFT</b> A hydraulic cab lift system will be provided, consisting of an electric-powered hydraulic pump, fluid reservoir, dual lift cylinders, remote cab lift controls and all necessary hoses and valves. The hydraulic pump will have a backup manual override, for use in the event of an electrical failure. The cab lift controls will be located at the driver side front of the cab, easily accessible under the full width front access hood. The controls will include a permanently mounted raise/lower switch. For enhanced visibility during cab tilt operations, a remote control tether with on/off switch will be supplied on a coiled cord that will extend from 2.00' (coiled) to 6.00' (extended). The cab will be capable of tilting 42 degrees and 80 degrees with crane assist to accommodate engine maintenance and removal. The cab pivots will be located 46.00" apart to provide stability while tilting the cab. The rear of the cab will be locked down by a two (2)-point, automatic, hydraulic, double hook mechanism that fully engages after the cab has been lowered (self-locking). The dual 2.25" diameter hydraulic cylinders will be equipped with a velocity fuse that protects the cab from accidentally descending when the cab is in the tilt position. For increased safety, a redundant mechanical stay arm will be provided that must be manually put in place on the driver side between the chassis and cab frame when cab is in the raised position. This device will be manually stowed to its original position before the cab can be lowered. <b>Cab Lift Interlock</b> The cab lift safety system will be interlocked to the parking brake. The cab tilt mechanism will be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism will be disabled.
0550343	Special Circuit, Cab Tilt w/o Ignition Switch	<b>CAB TILT CIRCUIT</b> The cab tilt mechanism will be operational with the battery switch on and with parking brake set.
0751126	Grille, Bright Finished, Painted Mesh Screen, Front of Cab, Impel/Velociry	<b>GRILLE</b> An aluminum mesh grille screen, inserted behind a formed bright finished grille surround, will be provided on the front center of the cab, and will serve as an air intake to the radiator. The mesh screen will be painted black #101.
0002224	Scuffplates, S/S At Cab Door Jambs, 4-Door Cab	<b>DOOR JAMB SCUFFPLATES</b> All cab door jambs will be furnished with a 1.00" polished stainless steel scuffplate, mounted on the striker side of the jamb.
0527032	Trim, S/S Band, Across Cab Face, Rect Lights, Velocity	<b>FRONT CAB TRIM</b> A band of 22 gauge polished stainless steel trim will be installed across the front of the cab, from door hinge to door hinge. The trim band will be centered on the head lights and applied with two (2)-sided tape. A 0.625" self adhesive trim strip will be applied around the perimeter of the trim band. There will be polished stainless steel corner covers provided over the painted cab corner where the cab turn signals are located.
0015440	No Chrome Molding, On side of cab	
0032189	Mirrors, Ramco, 8000PCHR, Heated/Remote, w/Heated/Remote Convex, Door Mount	<b>MIRRORS</b> One (1) Ramco, Model 8000-PCHR, polished aluminum mirror will be mounted on each of the cab doors. The mirrors will be 9.25" wide x 13.50" high with a convex section. <b>The mirror head will have a highly polished aluminum finish.</b> <b>The flat glass in each mirror will be heated and adjustable, with remote controls that are convenient to the driver.</b> <b>The convex section in each mirror will be heated and adjustable, with remote controls that are convenient to the driver.</b>

0667921	Door, Half-Height, Velocity FR 4-Door Cab, Raised Roof	<b>CAB DOORS</b> The forward cab and crew cab doors will be the half-height style door. To enhance entry and egress to the cab, the forward cab doors will be a minimum of 43.59" wide x 64.71" high. The crew cab doors will measure a minimum of 37.87" wide x 73.75" high. The forward cab and crew cab doors will be constructed of extruded aluminum with a nominal material thickness of 0.125". The exterior door skins will be constructed from 0.090" aluminum. The forward cab door windows will include a 7.50" high x 10.00" wide drop area at the front to enhance visibility. A customized, vertical, pull-down type door handle will be provided on the exterior of each cab door. The finish of the door handle will be chrome/black. The exterior handle will be designed specifically for the fire service to prevent accidental activation, and will provide 4.00" wide x 2.00" deep hand clearance for ease of use with heavy gloved hands. Each door will also be provided with an interior flush, open style paddle handle that will be readily operable from fore and aft positions, and be designed to prevent accidental activation. The interior handles will provide 4.00" wide x 1.25" deep hand clearance for ease of use with heavy gloved hands. The cab doors will be provided with both interior (rotary knob) and exterior (keyed) locks exceeding FMVSS standards. The keys will be Model 751. The locks will be capable of activating when the doors are open or closed. The doors will remain locked if locks are activated when the doors are opened, then closed. A full length, heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf will be provided on all cab doors. There will be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit. A chrome grab handle will be provided on the inside of each cab and crew cab door. A red webbed grab handle will be installed on the crew cab door stop strap. The grab handles will be securely mounted. The cab steps at each cab door location will be located below the cab doors and will be exposed to the exterior of the cab.
		<b>ATTACHMENT 1</b>
0655511	Door Panel, Brushed Stainless Steel, Impel/Velocity 4-Door Cab	<b>Door Panels</b> The inner cab door panels will be constructed out of brushed stainless steel. The cab door panels will be removable.
0667905	Storage Pockets w/ Elastic Cover, Recessed, Overhead, Impel/Velocity FR	<b>RECESSED POCKET WITH ELASTIC COVER</b> To provide organized storage (clutter control) in the cab for miscellaneous equipment, the cab interior will be provided with recessed storage pockets. The pockets will be 5.63" wide x 2.00" high x 4.00" deep. The pockets will be provided with a perforated elastic material cover to secure the equipment in the pocket. The pockets will be installed in all available mounting locations of the overhead console.
0667902	Controls, Electric Windows, All Cab Doors, Impel/Velocity FR	<b>ELECTRIC WINDOW CONTROLS</b> Each cab entry door will be equipped with an electrically operated tempered glass window. A window control panel will be located on the door panel within easy reach of the respective occupant. Each switch will allow intermittent or auto down operation for ease of use. Auto down operation will be actuated by holding the window down switch for approximately 1 second. The driver control panel will contain a control switch for each cab door's window. All other door control panels will contain a single switch to operate the window within that door. The window switches will be connected directly to the battery power. This allows the windows to be raised and lowered when the battery switch is in the off position.
0512419	Electric Door Locks, Cab Doors, Imp/Vel	<b>ELECTRIC CAB DOOR LOCKS</b> The front driver and passenger doors will have a door lock master switch (custom designed rotary lock knob) built into the interior door latch that will control all front and rear side exit door locks. Each rear cab door will have its own lock control. Each door will have a keyed exterior lock mechanism built into the door handle assembly. There will be one (1) concealed switch on the exterior of the cab, located under the front full width service access panel, that operates the cab door locks. The lock system will include two (2) key FOBs that allow for keyless entry into the vehicle. The key FOB system will use code hopping technology for high security and be FCC part 15 compliant.
0555485	Steps, 4-Door Full Tilt Cab, Imp/Vel	<b>CAB STEPS</b> The forward cab and crew cab access steps will be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps will be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps will be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps will be a minimum 31.00" wide, and the crew cab steps will be 24.25" wide with an 8.00" minimum depth. The inside cab steps will not exceed 18.00" in height and be limited to two (2) steps.
0770200	Handrail, Exterior, Hansen, Knurled, Alum, LED Backlit, 4-Door Cab	<b>CAB EXTERIOR HANDRAILS</b> A Hansen knurled aluminum handrail will be provided adjacent to each cab and crew cab door opening to assist during cab ingress and egress. Each handrail will be provided with red LED lights. The lights will be activated when the parking brake is applied. The LED lights may be load managed.

0892637	Lights, Cab & Crw Cab Acs Stps, P25, LED w/Bezel, 1Lt Per Step	<b>STEP LIGHTS</b> There will be four (4) white P25 LED step lights provided. The lights will be installed at each cab and crew cab door, one (1) per step. The lights will be located in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep. In order to ensure exceptional illumination, each light will provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light. The light(s) will have a chrome housing. The lights will be activated when the adjacent door is opened.
0002140	Fenders, S/S on Cab	<b>FENDER CROWNS</b> Stainless steel fender crowns will be installed at the cab wheel openings.
0592071	No Windows, Side of Crew Cab, Vel/Imp	
0566382	Not Required, Trim, Cab Side Windows, Velocity	
0012090	Not Required, Windows, Front/Side of raised roof	
0509286	Not Required, Windows Rear of Crew Cab, Imp/Vel	
0558334	Not Required, Trim, Cab Rear Windows, No Rear Windows	
0786278	Window Tint, Crew Cab Door, Right Side, Medium Gray	<b>RIGHT SIDE ROLLUP CREW CAB DOOR WINDOW TINT</b> The rollup window in the right side crew cab door will be tinted medium gray.
0786285	Window Tint, Upper Crew Cab Door, Right Side, Medium Gray	<b>RIGHT SIDE UPPER CREW CAB DOOR WINDOW TINT</b> The upper window in the right side crew cab door will be tinted medium gray.
0786289	Window Tint, Crew Cab Door, Left Side, Medium Gray	<b>LEFT SIDE ROLLUP CREW CAB DOOR WINDOW TINT</b> The rollup window in the left side crew cab door will be tinted medium gray.
0786293	Window Tint, Upper Crew Cab Door, Left Side, Medium Gray	<b>LEFT SIDE UPPER CREW CAB DOOR WINDOW TINT</b> The upper window in the left side crew cab door will be tinted medium gray.
0745808	Scuffplate, Inner Door Pan, Aux Cab Compts, Pair	<b>SCUFFPLATE</b> A full height polished stainless steel scuffplate will be installed on the inside of each of the auxiliary cab compartment door pans.
0619947	Lip, Dash Board, 1.00" Aluminum Angle Lip, Officer Side	<b>EQUIPMENT MOUNTING AREA</b> There will be an aluminum angle with a 1.00" lip installed on the dash to prevent items from sliding off the dash panel. The angle will run full length across the front, flat portion of the dashboard closest to the officer. The lip will be painted to match the cab interior.
0123686	Drip Rail, Cab Roof, Impel/Velocity/Velocis SLT	<b>CAB ROOF DRIP RAIL</b> For enhanced protection from inclement weather, a drip rail will be furnished on the sides of the cab. The drip rail will be constructed of bright polished extruded aluminum, and be bonded to the sides of the cab. The drip rail will extend the full length of the cab roof.
0664452	Bracket, Air Bottle, Zico, ULLH, Load & Lock	<b>AIR BOTTLE HOLDER(S)</b> There will be two (2) Ziamatic, Model ULLH, SCBA holder(s) with a LLS, collision restraint holding strap, provided in the crew cab. The bracket will be a one (1) size fits all style and will accommodate SCBA cylinders from the high pressure 30-minute to the high pressure 60-minute. The bracket(s) will be located one (1) in each EMS cabinet.

## ATTACHMENT 1



0798684	Work Surface, 3/16" Alum, Full Eng Tnl, Flat, Vel/Imp FR	<p><b>WORK SURFACE</b></p> <p>There will be a work surface provided on the engine tunnel. The work surface will be flat. It will not follow the engine tunnel angles. The work surface will cover the entire engine tunnel and will be constructed of 0.19" aluminum to allow for the mounting of equipment. The work surface will start to the rear of the center instrument panel and finish at the end of the engine tunnel. The work surface will be painted to match the cab interior.</p>
0745931	SP Modification, Reinforcement, Officer's Side Recessed Dash, AXT, Imp/Vel	<p><b>MODIFICATION/REINFORCEMENT OF OFFICER'S DASH</b></p> <p>The area under the officer's side dash will be reinforced with an aluminum plate for a more rigid mounting for the customer's computer mount. The plate will be painted to match the cab interior.</p>
0745913	Desk Top/Drawer, Over Engine tunnel, Vel/Imp	<p><b>DESK TOP/STORAGE DRAWER</b></p> <p>A desk assembly with pull out drawer will be mounted on the rear of engine tunnel, between the rear facing seats.</p> <p>The desktop surface will be constructed with a composite material and finished with gray Nevamar. The desktop will be slanted slightly.</p> <p>Below the desktop will be a slide-out working surface constructed a composite material and finished with gray Nevamar. This work surface will be at the same angle as the top surface. The work surface will be secured when stowed and usable from the two (2) center forward facing seats.</p> <p>There will be a pull-out drawer below the work surface including two (2) non-locking flush mounted pawl latches. The drawer will be 2.00" high x 20.00" deep.</p> <p>The desk frame and drawer assembly will be constructed of smooth aluminum painted to match the interior of the crew cab. Support framing will be provided between the desk top/drawer assembly and the top of the engine tunnel. The support framing will be sized to provide and adequate height for the desk used with forward facing seats or a command chair.</p>
0748671	Cab Interior, Vinyl, Velocity FR, CARE	<p><b>CAB INTERIOR</b></p> <p>With safety as the primary objective, the wrap-around style cab instrument panel will be designed with unobstructed visibility to instrumentation. The dash layout will provide the driver with a quick reference to gauges that allows more time to focus on the road.</p> <p>The center console will be a high impact ABS polymer and will be easily removable.</p> <p>The passenger side dashboard will be constructed of painted aluminum for durability and low maintenance. For enhanced versatility, the passenger side dash will include a flat working surface.</p> <p>To provide optional (service friendly) control panels, switches and storage modules, a painted aluminum overhead console will also be provided.</p> <p>To complete the cab front interior design, painted aluminum modesty panels will be provided under the dash on both sides of the cab. The driver side modesty panel will provide mounting for the battery switch and diagnostic connectors, while the passenger side modesty panel provides a glove box, and ground access to the main electrical distribution panel via quick quarter turn fasteners.</p> <p>To provide a deluxe automotive interior, the engine tunnel, side walls and rear wall will be covered by a leather grain vinyl that is resistant to oil, grease, and mildew.</p> <p>The headliner will be installed in both forward and rear cab sections. The headliner panel will be a composition of an aluminum panel covered with a sound barrier and upholstery.</p> <p>The cab structure will include designated raceways for electrical harness routing from the front of the cab to the rear upper portion of the cab. Raceways will be extruded in the forward door frame, floor, walls and overhead in the area where the walls meet the ceiling. The raceways located in the floor will be covered by aluminum extrusion, while the vertical and overhead raceways will be covered by painted aluminum covers. The raceways will improve harness integrity by providing a continuous harness path that eliminates wire chafing and abrasion associated with exposed wiring or routing through drilled metal holes. Harnesses will be laid in place.</p> <p><b>CAB INTERIOR UPHOLSTERY</b></p> <p>The cab interior upholstery will be 36 oz dark silver gray vinyl. All cab interior materials will meet FMVSS 302 (flammability of interior materials).</p>
0667943	Cab Interior, Paint Color, Impel/Velocity FR	<p><b>CAB INTERIOR PAINT</b></p> <p>The following metal surfaces will be painted black, vinyl textured paint:</p> <ul style="list-style-type: none"> <li>Modesty panel in front of driver</li> <li>Vertical surface of dash in front of the officer (not applicable for recessed dash)</li> <li>Glove box in front of the officer (if applicable)</li> <li>Power distribution in front of the officer</li> <li>Rear heater vent panels</li> </ul> <p>The remaining cab interior metal surfaces will be painted fire smoke gray, vinyl texture paint.</p>
0509532	Floor, Rubber Padded Cab & Crew Cab, Imp/Vel	<p><b>CAB FLOOR</b></p> <p>The cab and crew cab floor areas will be covered with Polydamp™ acoustical floor mat consisting of a black pyramid rubber facing and closed cell foam decoupler.</p> <p>The top surface of the material has a series of raised pyramid shapes evenly spaced, which offer a superior grip surface. Additionally, the material has a 0.25" thick closed cell foam (no water absorption) which offers a sound dampening material for reducing sound levels.</p>

0894651	HVAC, Heavy-Duty, Velocity FR, w/PACCAR, CARE	<p><b>DEFROST/AIR CONDITIONING SYSTEM</b> A ceiling mounted combination heater, defroster and air conditioning system will be installed in the cab above the engine tunnel area.</p> <p><b>Cab Defroster</b> A 54,000 BTU heater-defroster unit with 690 SCFM of air flow will be provided inside the cab. The heater-defrost will be installed in the forward portion of the cab ceiling. Air outlets will be strategically located in the cab header extrusion per the following: One (1) adjustable will be directed towards the left side cab window One (1) adjustable will be directed towards the right side cab window Six (6) fixed outlets will be directed at the windshield The defroster will be capable of clearing 98 percent of the windshield and side glass when tested under conditions where the cab has been cold soaked at 0 degrees Fahrenheit for 10 hours, and a 2 ounce per square inch layer of frost/ice has been able to build up on the exterior windshield. The defroster system will meet or exceed SAE J382 requirements.</p> <p><b>Cab/Crew Auxiliary Heater</b> There will be one (1) 31,000 BTU auxiliary heater with 560 SCFM of air flow provided in each outboard rear facing seat riser with a dual scroll blower. An aluminum plenum incorporated into the cab structure to be used to transfer heat to the forward positions.</p> <p><b>Air Conditioning</b> A 13.10 cubic inch compressor will be installed on the engine. A roof-mounted condenser with a 78,000 BTU output at 2,400 SCFM that meets and exceeds the performance specification will be installed on the cab roof. The condenser cover to be painted to match the cab roof. The air conditioning system will be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 75 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test will be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours. The evaporator unit will be installed in the rear portion of the cab ceiling over the engine tunnel. The evaporator will include one (1) high performance heating core, one (1) high performance cooling core with (1) plenum directed to the front and one (1) plenum directed to the rear of the cab. The evaporator unit will have a 52,000 BTU at 690 SCFM rating that meets and exceeds the performance specifications. Adjustable air outlets will be strategically located on the forward plenum cover per the following: Four (4) will be directed towards the seating position on the left side of the cab Four (4) will be directed towards the seating position on the right side of the cab Adjustable air outlets will be strategically located on the evaporator cover per the following: Five (5) will be directed towards crew cab area A high efficiency particulate air (HEPA) filter will be included for the system. Access to the filter cover will be secured with four (4) screws. The air conditioner refrigerant will be R-134A and will be installed by a certified technician.</p> <p><b>Climate Control</b> An automotive style controller will be provided to control the heat and air conditioning system within the cab. The controller will have three (3) functional knobs for fan speed, temperature, and air flow distribution (front to rear) control. The system will control the temperature of the cab and crew cab automatically by pushing the center of the fan speed control knob. Rotate the center temperature control knob to set the cab and crew cab temperature. The AC system will be manually activated by pushing the center of the temperature control knob. Pushing the center of the air flow distribution knob will engage the AC for max defrost, setting the fan speeds to 100 percent and directing all air flow to the overhead forward position.</p> <p><b>Gravity Drain Tubes</b> Two (2) condensate drain tubes will be provided for the air conditioning evaporator. The drip pan will have two (2) drain tubes plumbed separately to allow for the condensate to exit the drip pan. No pumps will be provided. The drain tubes will terminate under the cab, on the inboard side of the front wheelwells.</p>	<b>ATTACHMENT 1</b>
0627910	Sun Visor, Vinyl/Fabric, Imp/Vel	<p><b>SUN VISORS</b> There will be two (2) vinyl covered sun visors provided. The sun visors will be located above the windshield with one (1) mounted on each side of the cab. There will be a polished stainless steel bracket provided to help secure each sun visor in the stowed position.</p>	
0548173	Grab Handles, Driver and Passenger Door Post, Imp/Vel	<p><b>GRAB HANDLE</b> A black rubber covered grab handle will be mounted on the door post of the driver side and passenger side cab door to assist in entering the cab. The grab handle will be securely mounted to the post area between the door and windshield.</p>	
0002526	Light, Engine Compt, All Custom Chassis	<p><b>ENGINE COMPARTMENT LIGHT</b> An engine compartment light will be installed under the engine tunnel, of which the switch is an integral part. Light will have a 0.125" diameter hole in its lens to prevent moisture retention.</p>	
0122516	Fluid Check Access, Imp/Vel	<p><b>ACCESS TO ENGINE DIPSTICKS</b> For access to the engine oil and transmission fluid dipsticks, there will be a door on the engine tunnel, inside the crew cab. The door will be on the rear wall of the engine tunnel, on the vertical surface. The door will be flush with the wall of the engine tunnel. The engine oil dipstick will allow for checking only. The transmission dipstick will allow for both checking and filling. An additional port will be provided for filling the engine oil. The door will have a rubber seal for thermal and acoustic insulation. One (1) flush lift and turn latch with black finish will be provided on the access door.</p>	

0818696	SP	Map box, 3 bin, 2 Glove Boxes, 4 Cup Holders, 27 W x 22 D	<p><b>MAP BOX</b></p> <p>A map box with three (3) bins, two (2) glove boxes, and four (4) cup holders, open from top, will be located on the engine tunnel, mount at pickup.</p> <p>The box will have overall dimensions of 27.00" wide x 22.00" deep.</p> <p>Centered on the left and right sides of the map box will be storage for one (1) latex glove box. Each glove box will be 5.75" wide x 4.00" high x 10.00" long. The glove boxes will drop in from the top. On each side of the glove box storage will be a square cup holder area that is 5.75" wide x 4.00" high x 5.75" long.</p> <p>Between the map box and cup holders will be a map storage area that is 15.00" wide x 22.00" deep x 8.00" high. The map storage area will be divided into three (3) bins that run front to back. The two (2) bins on the officer side will be 2.00" wide (interior dimension). The third bin next to the driver will be 10.75" wide.</p> <p>The map box will be constructed of 0.125" aluminum and will be painted to match the cab interior.</p>	<b>ATTACHMENT 1</b>
0583042		Side Roll and Frontal Impact Protection	<p><b>CAB SAFETY SYSTEM</b></p> <p>The cab will be provided with a safety system designed to protect occupants in the event of a side roll or frontal impact, and will include the following:</p> <p>A supplemental restraint system (SRS) sensor will be installed on a structural cab member behind the instrument panel. The SRS sensor will perform real time diagnostics of all critical subsystems and will record sensory inputs immediately before and during a side roll or frontal impact event.</p> <p>A slave SRS sensor will be installed in the cab to provide capacity for eight (8) crew cab seating positions.</p> <p>A fault-indicating light will be provided on the vehicle's instrument panel allowing the driver to monitor the operational status of the SRS system.</p> <p>A driver side front air bag will be mounted in the steering wheel and will be designed to protect the head and upper torso of the occupant, when used in combination with the 3-point seat belt.</p> <p>A passenger side knee bolster air bag will be mounted in the modesty panel below the dash panel and will be designed to protect the legs of the occupant, when used in combination with the 3-point seat belt.</p> <p>Air curtains will be provided in the outboard bolster of outboard seat backs to provide a cushion between occupant and the cab wall.</p> <p>Suspension seats will be provided with devices to retract them to the lowest travel position during a side roll or frontal impact event.</p> <p>Seat belts will be provided with pre-tensioners to remove slack from the seat belt during a side roll or frontal impact event.</p> <p><b>Frontal Impact Protection</b></p> <p>The SRS system will provide protection during a frontal or oblique impact event. The system will activate when the vehicle decelerates at a predetermined G force known to cause injury to the occupants. The cab and chassis will have been subjected, via third party test facility, to a crash impact during frontal and oblique impact testing. Testing included all major chassis and cab components such as mounting straps for fuel and air tanks, suspension mounts, front suspension components, rear suspensions components, frame rail cross members, engine and transmission and their mounts, pump house and mounts, frame extensions and body mounts. The testing provided configuration specific information used to optimize the timing for firing the safety restraint system. The sensor will activate the pyrotechnic devices when the correct crash algorithm, wave form, is detected.</p> <p>The SRS system will deploy the following components in the event of a frontal or oblique impact event:</p> <ul style="list-style-type: none"> <li>Driver side front air bag</li> <li>Passenger side knee bolster air bag</li> <li>Air curtains mounted in the outboard bolster of outboard seat backs</li> <li>Suspension seats will be retracted to the lowest travel position</li> <li>Seat belts will be pre-tensioned to firmly hold the occupant in place</li> </ul> <p><b>Side Roll Protection</b></p> <p>The SRS system will provide protection during a fast or slow 90 degree roll to the side, in which the vehicle comes to rest on its side. The system will analyze the vehicle's angle and rate of roll to determine the optimal activation of the advanced occupant restraints.</p> <p>The SRS system will deploy the following components in the event of a side roll:</p> <ul style="list-style-type: none"> <li>Air curtains mounted in the outboard bolster of outboard seat backs</li> <li>Suspension seats will be retracted to the lowest travel position</li> <li>Seat belts will be pre-tensioned to firmly hold the occupant in place</li> </ul>	
0622619		Seating Capacity, 4 Belted Seats	<p><b>SEATING CAPACITY</b></p> <p>The seating capacity of the vehicle (including tiller cab and belted seat positions in the rescue body) will be four (4).</p>	

0697005	Seat, Driver, Pierce PS6, Premium, Air Ride, High Back, Safety, PRIMARY	<p><b>DRIVER SEAT</b></p> <p>A Pierce PS6® seat will be provided in the cab for the driver. The seat design will be a cam action type with air suspension. For increased convenience, the seat will include electric controls to adjust the rake (15 degrees), height (1.75" travel) and horizontal (7.00" travel) position. Electric controls will be located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat will have a reclining back, adjustable from 20 degrees back to 45 degrees forward. Providing for maximum comfort, the seat back will be a high back style with manual lumbar adjustment lever, for lower back support, and will include minimum 7.50" deep side bolster pads for maximum support. The lumbar adjustment lever will be easily located at the lower outboard position of the seat cushion. For optimal comfort, the seat will be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control).</p> <p>The seat will include the following features incorporated into the side roll protection system: Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position.</p> <p>A suspension seat safety system will be included. When activated in the event of a side roll, this system will pretension the seat belt and retract the seat to its lowest travel position.</p> <p>The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.</p>
0696996	Seat, Officer, Pierce PS6, Premium, Air Ride, High Back, Safety, PRIMARY	<p><b>OFFICER SEAT</b></p> <p>A Pierce PS6® seat will be provided in the cab for the officer. The seat will be a cam action type, with air suspension. For increased convenience, the seat will include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control will be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple passenger configurations, the seat will have a reclining back adjustable from 20 degrees back to 0 degrees forward. The seat back will be a high back style with manual lumbar adjustment lever, and will include minimum 7.50" deep side bolster pads for maximum support. For optimal comfort, the seat will be provided with 17.00" deep dual density foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle that will activate an alarm indicating a seat is occupied but not buckled.</p> <p>The seat will include the following features incorporated into the side roll protection system: Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position.</p> <p>A suspension seat safety system will be included. When activated this system will pretension the seat belt and retract the seat to its lowest travel position.</p> <p>The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.</p>
0540561	Radio Compartment, Behind Officer Seat, Vented, Imp/Vel	<p><b>RADIO COMPARTMENT</b></p> <p>A compartment for the radio amplifier will be located on the floor of the cab behind the front passenger seat. A lift-up door with a chrome plated lift and turn latch will be provided for access. The compartment will be constructed of smooth aluminum and painted to match the cab interior. Louvers will be provided to allow for ventilation.</p>
0765633	Cabinet, Rear Facing, LS, 30.5 W x 38 H x 24 D, Ext Acc Only, Imp/Vel	<p><b>REAR FACING LEFT SIDE CABINET</b></p> <p>A rear facing cabinet will be provided in the crew cab at the left side outboard position. The cabinet will be 30.50" wide x 38.00" high x 24.00" deep.</p> <p>The cabinet will provide access from outside the cab only with one (1) double pan door painted to match the cab exterior with a locking D-ring latch with #751 key. The clear door opening will be 19.75" wide x 35.00" high. The door will be located on the side of the cab over the wheelwell and include a pneumatic stay arm as a door stop.</p> <p>The cabinet will include no adjustable shelves or trays painted to match the cab interior.</p> <p>The cabinet will include no louvers.</p> <p>The exterior access will be provided with a polished stainless steel scuffplate on the lower door frame.</p> <p>The cabinet will be constructed of smooth aluminum, and painted to match the cab interior.</p> <p><b>Cabinet Light</b></p> <p>There will be one (1) Amdor H2O LED strip light installed on the left side of the exterior cabinet door opening and one (1) Amdor H2O LED strip light installed on the right side of the exterior cabinet door opening. The lights will be controlled by an automatic door switch.</p>
0102783	Not Required, Seat, Rr Facing C/C, Center	

0765626	Cabinet, Rear Facing, RS, 26.5 W x 38 H x 21.5 D, Ext Acc Only, Imp/Vel	<b>REAR FACING RIGHT SIDE CABINET</b> A rear facing cabinet will be provided in the crew cab at the right side outboard position. The cabinet will be 26.50" wide x 38.00" high x 21.50". The cabinet will include no adjustable shelves or trayspainted to match the cab interior. The cabinet will include no louvers. The cabinet will only provide access from outside the cab with one (1) double pan door painted to match the cab exterior with a locking D-ring latch with #751 key. A pneumatic stay arm will be provided as a door stop. The exterior clear door opening will be 16.00" wide x 35.00" high. The door will be located on the side of the cab over the wheelwell. The exterior access will be provided with a polished stainless steel scuffplate on the lower door frame. The cabinet will be constructed of smooth aluminum and painted to match the cab interior. <b>Cabinet Light</b> There will be one (1) Amdor H2O LED strip light installed on the left side of the exterior cabinet door opening and one (1) Amdor H2O LED strip light installed on the right side of the exterior cabinet door opening. The lights will be controlled by an automatic door switch.
0818594	Seat, Fwd Fcng C/C, LS Otbrd, Pierce PS6, 9 Deg Hi-Back, Foldup, 17", Sfty, PRIMARY	<b>FORWARD FACING LEFT SIDE OUTBOARD SEAT</b> There will be one (1) forward facing, Pierce PS6®, foldup seat provided at the left side outboard position in the crew cab. The seat back will be a high back style. To provide improved ride comfort, and maximize accessibility to the crew cab, the seat will be provided with 17.00" deep foam cushions, and the seat back will be provided with 99 degree fixed recline angle. To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle, that will activate an alarm indicating a seat is occupied but not buckled. The seat will include the following features incorporated into the side roll protection system: Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position. A seat safety system will be included. When activated, this system will pretension the seat belt around the occupant to firmly hold them in place in the event of a side roll. The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.
0819925	Cabinet, Fwd Fcng, Ctr, 36 W x 56 H x 14 D, Roll, Imp/Vel	<b>FORWARD FACING CENTER CABINET</b> A forward facing cabinet will be provided in the crew cab at the center position. The cabinet will be 36.00" wide x 56.00" high x 14.00" deep with one (1) Amdor rollup door with anodized finish, non-locking. The cabinet will be provided with no false floor. The frame to frame opening of the cabinet will be 33.50" wide x 50.75" high. The minimum clear door opening will be 30.75" wide x 44.87" high. The cabinet will include two (2) infinitely adjustable shelves with a 1.25" up-turned lippainted to match the cab interior. The cabinet will include no louvers. The cabinet will be constructed of smooth aluminum and painted to match the cab interior. <b>Cabinet Light</b> There will be one (1) white Amdor LED strip light installed on the left side of the interior cabinet door opening and one (1) white Amdor LED strip light installed on the right side of the interior cabinet door opening. The lighting will be controlled by an automatic door switch.
0818809	Seat, Fwd Fcng C/C, RS Otbrd, Pierce PS6, 9 Deg Hi-Back, Foldup, 17", Sfty, PRIMARY	<b>FORWARD FACING RIGHT SIDE OUTBOARD SEAT</b> There will be one (1) forward facing, Pierce PS6®, foldup seat provided at the right side outboard position in the crew cab. The seat back will be a high back style. To provide improved ride comfort, and maximize accessibility to the crew cab, the seat will be provided with 17.00" deep foam cushions, and the seat back will be provided with 99 degree fixed recline angle. To ensure safe operation, the seat will be equipped with seat belt sensors in the seat cushion and belt receptacle, that will activate an alarm indicating a seat is occupied but not buckled. The seat will include the following features incorporated into the side roll protection system: Side air curtain will be mounted integral to the outboard bolster of the seat back. The air curtain will be covered by a decorative panel when in the stowed position. A seat safety system will be included. When activated, this system will pretension the seat belt around the occupant to firmly hold them in place in the event of a side roll. The seat will be furnished with a 3-point, shoulder type seat belt. The seat belt will be furnished with dual automatic retractors that will provide ease of operation in the normal seating position.
0651182	Scuffplate, Cabinet, Interior Door Pan, Cab	<b>DOOR PAN SCUFFPLATE</b> There will be a polished stainless steel scuffplate on the interior door pan of two (2) cabinet door (s) located left side rear facing cabinet and right side rear facing cabinet.
0646614	Cabinet, (2) Rr Fcng, Overhead, 22 W x 10 H x 34 D, Imp/Vel FR	<b>REAR FACING OVERHEAD STORAGE COMPARTMENT</b> There will be two (2) overhead rear facing storage compartments installed at the raised roof within the crew cab, on each side of the air conditioner. The compartments will be approximately 22.00" wide x 10.00" high x 34.00" deep at the bottom. Each compartment will include one (1) lift up compartment door. Non-locking latch, paddle handle, and gas operated stay arms will be provided. The compartment will be constructed of smooth aluminum and painted to match the cab interior. <b>COMPARTMENT LIGHT</b> The storage compartment lighting will consist of one (1) white Amdor LED strip light installed horizontally above each compartment door opening.

0820412	Fasteners, Mechanical, Strip Lighting, Cab Compartments	<b>BRACKETS/CLAMPS FOR COMPARTMENT LIGHTING</b> Metal clamps will be used to retain the strip lighting in all cab compartments.
0766467	Upholstery, Seats In Cab, All Vinyl, Seats Inc, CARE	<b>SEAT UPHOLSTERY</b> All seat upholstery will be leather grain 36 oz dark silver gray vinyl resistant to oil, grease and mildew. The cab and tiller cab (if applicable) will have four (4) seating positions.
0511471	No SCBA Brackets Required In Cab Seats, Imp/Vel, AXT 2010, Qtm 2010,Saber FR/Enf	
0639023	SP Driver Seat Hooked to Battery Switched IPO Ignition Switched	<b>DRIVER SEAT POWER</b> The driver seat power for the adjustability will be powered when the master battery switch is turned on in place of the standard ignition switched.
0603867	Seat Belt, ReadyReach	<b>SEAT BELTS</b> All seating positions in the cab, crew cab and tiller cab (if applicable) will have red seat belts. To provide quick, easy use for occupants wearing bunker gear, the female buckle and seat belt webbing length will meet or exceed the current edition of applicable NFPA and CAN/ULC - S515 standards. The 3-point shoulder type seat belts will also include the ReadyReach® D-loop assembly to the shoulder belt system. The ReadyReach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location. Any flip up seats will include a 3-point shoulder type belts only.
0604867	Seat Belt Height Adjustment, 4 Seats, Imp/Vel	<b>SHOULDER HARNESS HEIGHT ADJUSTMENT</b> All seating positions furnished with 3-point shoulder type seat belts will include a height adjustment. This adjustment will optimize the belts effectiveness and comfort for the seated firefighter. A total of four (4) seating positions will have the adjustable shoulder harness.
0817557	Helmet Storage, Provided by Fire Department, NFPA/ULC 2024	<b>HELMET STORAGE PROVIDED BY FIRE DEPARTMENT</b> NFPA 1900, 2024 edition, section 11.1.8.4.1 and CAN/ULC S515:2024 edition, section 5.2, requires a location for helmet storage be provided. There is no helmet storage on the apparatus as manufactured. The fire department will provide a location for storage of helmets.
0647638	Lights, Dome, Weldon Dual LED 4 Lts	<b>CAB DOME LIGHTS</b> There will be four (4) Weldon, 808* series, dual LED dome lights with grey bezels provided. Two (2) lights will be mounted above the inside shoulder of the driver and officer and two (2) lights will be installed and located, one (1) on each side of the crew cab. The color of the LED's will be red and white. The white LED's will be controlled by the door switches and the lens switch. The color LED's will be controlled by the lens switch.
0649826	Lights, Dome, ROM, Durolumen Dual Red/WhiteLED	<b>ADDITIONAL DOME LIGHT</b> There will be one (1) ROM, DuroLumen dual red and white LED light(s) provided in the cab and/or crew cab located crew cab above and forward of center seating to illuminate slide out work surface on engine tunnel. The white LED's will be controlled by a switch located near the command desk. The red LED's will be controlled by a switch located near the command desk. The light(s) may be load managed when the parking brake is applied.
0650184	Lights, Dome, Weldon, Dual LED	<b>ADDITIONAL DOME LIGHTS</b> There will be one (1) Weldon 8080/8081 series, dual LED dome lights with grey bezel(s) mounted in the cab and/or crew cab located centered above the foreword facing seat, inline with the rear 2 lights (match 38180). The color of the LED's will be red and white. The white LED(s) will be controlled by the same switching as the crew cab dome lights. The color LED(s) will be controlled by the same switching as the crew cab dome lights. The light(s) may be load managed when the parking brake is applied.
0896451	Enhanced Software for Cab and Crew Cab Dome Lts	<b>ENHANCED SOFTWARE FOR CAB AND CREW CAB DOME LIGHTS</b> The cab and crew cab dome lights will remain on for 10 seconds for improved visibility after the doors are closed. The dome lights will dim after 10 seconds or immediately if the vehicle's transmission is put into gear.
0631776	Not Required, Overhead Map Lights	

0739629	Spotlight, WIn Arges, 2 Lights	<p><b>CAB SPOTLIGHT</b>  There will be two (2) Whelen®, Model Arges™, Model PRO™, remote lights with white LEDs, 5 to 60 degree optics and black housing located on the cab roof, Driver and passenger side outboard behind lightbar so Z bracket over lightbar. The lights will be mounted on painted Z brackets.  This lights may be load managed when the parking brake is applied.</p>	<b>ATTACHMENT 1</b>
0739628	Controller, Spotlight, WIn Arges Dash Mt, 2 Lt	<p><b>Spotlight Controller</b>  There will be two (2) wired dash mounted remote controllers provided for the spotlights. One (1) remote will be on the driver side to control the driver side spotlight, and one (1) remote will be on the passenger side to control the passenger side spotlight.</p>	
0896177	Location, Spotlight Controller, Driver and Officer, Loc, 2 Lts	<p><b>SPOTLIGHT CONTROLLER LOCATIONS</b>  The remotes to control the spotlights will be located one (1) within reach of the driver driver side match 38180 per IP layout and one (1) within reach of the officer passenger side match 38180 per IP layout.  There will be a box installed for each controller to enclose the control and wiring.</p>	
0824716	SP Handlts, (4) Streamlight, Survivor LED, 12v, Yellow, 90541	<p><b>HAND HELD SPOTLIGHT</b>  There will be four (4) Streamlight®, Model Survivor® part number 90541, LED flashlights with alkaline batteries and yellow body provided and installed TBD at pre-construction.</p>	
0568369	Cab Instruments, Ivory Gauges, Chrome Bezels, Impel/Velocity 2010	<p><b>CAB INSTRUMENTATION</b>  The cab instrument panel will consist of gauges, an LCD display, telltale indicator lights, alarms, control switches, and a diagnostic panel. The function of instrument panel controls and switches will be identified by a label adjacent to each item. Actuation of the headlight switch will illuminate the labels in low light conditions. Telltale indicator lamps will not be illuminated unless necessary. The cab instruments and controls will be conveniently located within the forward cab section directly forward of the driver. Gauge and switch panels will be designed to be removable for ease of service and low cost of ownership.</p> <p><b>Gauges</b>  The gauge panel will include the following ten (10) ivory gauges with chrome bezels to monitor vehicle performance:  <b>Voltmeter gauge (Volts)</b>  <b>Low volts (11.8 VDC)</b>  <b>Amber indicator on gauge assembly with alarm</b>  <b>High volts (15 VDC)</b>  <b>Amber indicator on gauge assembly with alarm</b>  <b>Very low volts (11.3 VDC)</b>  <b>Amber indicator on gauge assembly with alarm</b>  <b>Very high volts (16 VDC)</b>  <b>Amber indicator on gauge assembly with alarm</b>  <b>Tachometer (RPM)</b>  <b>Speedometer (Primary (outside) MPH, Secondary (inside) Km/H)</b>  <b>Fuel level gauge (Empty - Full in fractions)</b>  <b>Low fuel (1/8 full)</b>  <b>Amber indicator on gauge assembly with alarm</b>  <b>Very low fuel (1/32) fuel</b>  <b>Amber indicator on gauge assembly with alarm</b>  <b>Engine oil pressure gauge (PSI)</b>  <b>Low oil pressure to activate engine warning lights and alarms</b>  <b>Red indicator on gauge assembly with alarm</b>  <b>Front air pressure gauge (PSI)</b>  <b>Low air pressure to activate warning lights and alarm</b>  <b>Red indicator on gauge assembly with alarm</b>  <b>Rear air pressure gauge (PSI)</b>  <b>Low air pressure to activate warning lights and alarm</b>  <b>Red indicator on gauge assembly with alarm</b>  <b>Transmission oil temperature gauge (Fahrenheit)</b>  <b>High transmission oil temperature activates warning lights and alarm</b>  <b>Amber indicator on gauge assembly with alarm</b>  <b>Engine coolant temperature gauge (Fahrenheit)</b>  <b>High engine temperature activates an engine warning light and alarm</b>  <b>Red indicator on gauge assembly with alarm</b>  <b>Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions)</b>  <b>Low fluid (1/8 full)</b>  <b>Amber indicator on gauge assembly with alarm</b>  <b>All gauges and gauge indicators will perform prove out at initial power-up to ensure proper performance.</b></p> <p><b>Indicator Lamps</b>  To promote safety, the following telltale indicator lamps will be integral to the gauge assembly and are located above and below the center gauges. The indicator lamps will be "dead-front" design that is only visible when active. The colored indicator lights will have descriptive text or symbols.  The following amber telltale lamps will be present:  <b>Low coolant</b>  <b>Trac cntl (traction control) (where applicable)</b>  <b>Check engine</b>  <b>Check trans (check transmission)</b>  <b>Aux brake overheat (Auxiliary brake overheat)</b>  <b>Air rest (air restriction)</b></p>	

Caution (triangle symbol)

Water in fuel

DPF (engine diesel particulate filter regeneration)

Trailer ABS (where applicable)

Wait to start (where applicable)

HET (engine high exhaust temperature) (where applicable)

ABS (antilock brake system)

MIL (engine emissions system malfunction indicator lamp) (where applicable)

SRS (supplemental restraint system) fault (where applicable)

DEF (low diesel exhaust fluid level)

The following red telltale lamps will be present:

Warning (stop sign symbol)

Seat belt

Parking brake

Stop engine

Rack down

The following green telltale lamps will be provided:

Left turn

Right turn

Battery on

The following blue telltale lamp will be provided:

High beam

Alarms

Audible steady tone warning alarm: A steady audible tone alarm will be provided whenever a warning message is present.

Audible pulsing tone caution alarm: A pulsing audible tone alarm (chime/chirp) will be provided whenever a caution message is present without a warning message being present.

Alarm silence: Any active audible alarm will be able to be silenced by holding the ignition switch at the top position for 3 to 5 seconds. For improved safety, silenced audible alarms will intermittently chirp every 30 seconds until the alarm condition no longer exists. The intermittent chirp will act as a reminder to the operator that a caution or warning condition still exists. Any new warning or caution condition will enable the steady or pulsing tones respectively.

**Indicator Lamp and Alarm Prove-Out**

Telltale indicators and alarms will perform prove-out at initial power-up to ensure proper performance.

**Control Switches**

For ease of use, the following controls will be provided immediately adjacent to the cab instrument panel within easy reach of the driver.

Emergency master switch: A molded plastic push button switch with integral indicator lamp will be provided. Pressing the switch will activate emergency response lights and siren control. A green lamp on the switch provides indication that the emergency master mode is active. Pressing the switch again disables the emergency master mode.

Headlight / Parking light switch: A three (3)-position maintained rocker switch will be provided. The first switch position will deactivate all parking lights and the headlights. The second switch position will activate the parking lights. The third switch position will activate the headlights.

Panel backlighting intensity control switch: A three (3)-position momentary rocker switch will be provided. The first switch position decreases the panel backlighting intensity to a minimum level as the switch is held. The second switch position is the default position that does not affect the backlighting intensity. The third switch position increases the panel backlighting intensity to a maximum level as the switch is held.

The following standard controls will be integral to the gauge assembly and are located below the right hand gauges. All switches have backlit labels for low light applications.

High idle engagement switch: A two (2)-position momentary rocker switch with integral indicator lamp will be provided. The first switch position is the default switch position. The second switch position will activate and deactivate the high idle function when pressed and released. The "Ok To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch will indicate when the high idle function is engaged.

"Ok To Engage High Idle" indicator lamp: A green indicator light will be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement.

The following standard controls will be provided adjacent to the cab gauge assembly within easy reach of the driver. All switches will have backlit labels for low light applications.

Ignition switch: A three (3)-position maintained/momentary rocker switch will be provided. The first switch position will deactivate vehicle ignition. The second switch position will activate vehicle ignition. The third momentary position will disable the Command Zone audible alarm if held for 3 to 5 seconds. A green indicator lamp will be activated with vehicle ignition.

Engine start switch: A two (2)-position momentary rocker switch will be provided. The first switch position is the default switch position. The second switch position will activate the vehicle's engine. The switch actuator is designed to prevent accidental activation.

4-way hazard switch: A two (2)-position maintained rocker switch will be provided. The first switch position will deactivate the 4-way hazard switch function. The second switch position will activate the 4-way hazard function. The switch actuator will be red and includes the international 4-way hazard symbol.

Heater, defroster, and air conditioning control panel.

Turn signal arm: A self-canceling turn signal with high beam headlight and windshield wiper/washer controls will be provided. The windshield wiper control will have high, low, and intermittent modes.

Parking brake control: An air actuated push/pull park brake control valve will be provided.

Chassis horn control: Activation of the chassis horn control will be provided through the center of the steering wheel.

**Custom Switch Panels**

The design of cab instrumentation will allow for emergency lighting and other switches to



be placed within easy reach of the operator thus improving safety. There will be positions for up to four (4) switch panels in the overhead console on the driver's side, up to four (4) switch panels in the engine tunnel console facing the driver, up to four (4) switch panels in the overhead console on the officer's side and up to two (2) switch panels in the engine tunnel console facing the officer. All switches will have backlit labels for low light applications.

#### Diagnostic Panel

A diagnostic panel will be accessible while standing on the ground and located inside the driver's side door left of the steering column. The diagnostic panel will allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches will allow ABS systems to provide blink codes should a problem exist.

The diagnostic panel will include the following:

Engine diagnostic port

Transmission diagnostic port

ABS diagnostic port

SRS diagnostic port (where applicable)

Command Zone USB diagnostic port

ABS diagnostic switch (blink codes flashed on ABS telltale indicator)

Diesel particulate filter regeneration switch (where applicable)

Diesel particulate filter regeneration inhibit switch (where applicable)

#### Cab LCD Display

A digital four (4)-row by 20-character dot matrix display will be integral to the gauge panel.

The display will be capable of showing simple graphical images as well as text. The display will be split into three (3) sections. Each section will have a dedicated function.

The upper left section will display the outside ambient temperature.

The upper right section will display, along with other configuration specific information:

Odometer

Trip mileage

PTO hours

Fuel consumption

Engine hours

The bottom section will display INFO, CAUTION, and WARNING messages. Text messages will automatically activate to describe the cause of an audible caution or warning alarm.

The LCD will be capable of displaying multiple text messages should more than one caution or warning condition exist.

0509511 Air Restriction Indicator, Imp/Vel, AXT, Enf MUX

#### AIR RESTRICTION INDICATOR

A high air restriction warning indicator light LCD message with amber warning indicator and audible alarm will be provided.

0606017 SP Light, Do Not Move Apparatus, W/in VTX609R Red LED 2lts, DS PS Indicator

#### "DO NOT MOVE APPARATUS" INDICATOR

There will be two (2) Whelen, Model VTX609R, red LED indicator lights with chrome trim located in the driving compartment. The lights will be illuminated automatically per the current NFPA requirements. The light will be labeled "Do Not Move Apparatus If Light Is On."

One (1) light will be installed over the driver's position.

One (1) light will be installed over the passenger's position in the cab.

One light will indicate the status of the doors on the driver's side of the apparatus and one light will indicate the status of the doors on the passenger's side and rear of apparatus.

All other items that activate the "Do Not Move Truck" indicator light will activate both flashing red indicator lights.

The same circuit that activates the Do Not Move Apparatus indicator will activate a pulsing alarm when the parking brake is released.

0509042 Messages, Open Dr/DNMT, Color Dsply,

#### DO NOT MOVE TRUCK MESSAGES

Messages will be displayed on the Command Zone™, color display located within sight of the driver whenever the Do Not Move Truck light is active. The messages will designate the item or items not in the stowed for vehicle travel position (parking brake disengaged).

The following messages will be displayed (where applicable):

Do Not Move Truck

DS Cab Door Open (Driver Side Cab Door Open)

PS Cab Door Open (Passenger's Side Cab Door Open)

DS Crew Cab Door Open (Driver Side Crew Cab Door Open)

PS Crew Cab Door Open (Passenger's Side Crew Cab Door Open)

DS Body Door Open (Driver Side Body Door Open)

PS Body Door Open (Passenger's Side Body Door Open)

Rear Body Door Open

DS Ladder Rack Down (Driver Side Ladder Rack Down)

PS Ladder Rack Down (Passenger Side Ladder Rack Down)

Deck Gun Not Stowed

Lt Tower Not Stowed (Light Tower Not Stowed)

Fold Tank Not Stowed (Fold-A-Tank Not Stowed)

Aerial Not Stowed (Aerial Device Not Stowed)

Stabilizer Not Stowed

Steps Not Stowed

Handrail Not Stowed

Any other device that is opened, extended, or deployed that creates a hazard or is likely to cause major damage to the apparatus if the apparatus is moved will be displayed as a caution message after the parking brake is disengaged.

0611681	Switching, Cab, Membrane, Impel/Velocity, AXT WiFi MUX	<p><b>SWITCH PANELS</b></p> <p>The emergency light switch panel will have a master switch for ease of use, plus individual switches for selective control. Each switch panel will contain eight (8) membrane-type switches each rated for one million (1,000,000) cycles. Panels containing less than eight (8) switch assignments will include non-functioning black appliques. Documentation will be provided by the manufacturer indicating the rated cycle life of the switches. The switch panel(s) will be located in the overhead position above the windshield on the driver side overhead to allow for easy access. Additional switch panel(s) will be located in the overhead position(s) above the windshield or in designated locations on the lower instrument panel layout.</p> <p>The switches will be membrane-type and also act as an integral indicator light. For quick, visual indication the entire surface of the switch will be illuminated white whenever back lighting is activated and illuminated green whenever the switch is active. An active illuminated switch will flash when interlock requirements are not met or device is actively being load managed. For ease of use, a two (2)-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch will be placed in the center of the switch. The label will allow light to pass through the letters for ease of use in low light conditions.</p>
0555915	Wiper Control, 2-Speed with Intermittent, MUX, Impel/Velocity	<p><b>WIPER CONTROL</b></p> <p>For simple operation and easy reach, the windshield wiper control will be an integral part of the directional light lever located on the steering column. The wiper control will include high and low wiper speed settings, a one (1)-speed intermittent wiper control and windshield washer switch. The control will have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use.</p>
0834416	USB, Cab, 4, 12V DC, Dual USB Termination, NFPA1900/ULC	<p><b>CAB USB</b></p> <p>There will be four (4) USB terminations with a combination USB type A &amp; C, wired to switched battery power, provided per the following:</p> <ul style="list-style-type: none"> <li>One (1) within reach of the driver</li> <li>One (1) within reach of the passenger</li> <li>Two (2) on the rear of the engine tunnel, one (1) each side.</li> </ul> <p>This circuit may be load managed.</p>
0826636	Wiring, Spare, (1) 15A 12V DC, Multi Loc, Cab, B+, 1st, NFPA1900/ULC	<p><b>SPARE CIRCUITS</b></p> <p>There will be one (1) shared 15 amp circuit, including a positive and a negative wire, dropped out in multiple locations on the apparatus. All dropout locations will be wired in a parallel configuration.</p> <p>The wires will have the following features:</p> <ul style="list-style-type: none"> <li>The positive wire will be connected directly to the battery power</li> <li>The negative wire will be connected to ground</li> <li>Wires will be capable of carrying 10 amps</li> </ul> <p>The spare wiring circuit will be located and terminated as follows:</p> <ul style="list-style-type: none"> <li>Spare circuit drop #1 will (1) on command desk in crew cab and termination with a panel mount style Type-A &amp; Type-C dual USB socket with cover at the wire end</li> <li>Spare circuit drop #2 will (1) in Location 14 and termination with a panel mount style Type-A &amp; Type-C dual USB socket with cover at the wire end</li> <li>Spare circuit drop #3 will not be required and termination is not required with no location</li> <li>Spare circuit drop #4 will not be required and termination is not required with no location</li> <li>Spare circuit drop #5 will not be required and termination is not required with no location</li> <li>Spare circuit drop #6 will not be required and termination is not required with no location</li> </ul> <p>Wires will be protected to meet the NFPA Automotive Fire Apparatus standard.</p> <p>Battery Direct loads cannot be Load Managed.</p>
0821236	Wiring, Spare, 20 A 12V DC, 6 Ckt FB, Blue Sea 5025 Batt Dir 1st NFPA1900/ULC	<p><b>SPARE CIRCUIT</b></p> <p>There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The wires will have the following features:</p> <ul style="list-style-type: none"> <li>The positive wire will be connected directly to the battery power.</li> <li>The negative wire will be connected to ground.</li> <li>Wires will be capable of carrying 20 amps.</li> </ul> <p>Power and ground will terminate in B1 high on rear wall behind roll up door .</p> <p>Termination will be to a Blue Sea System, Model 5025, 6 circuit with negative bus bar. The terminal block will include a cover with circuit labels.</p> <p>Wires will be protected to meet the NFPA Automotive Fire Apparatus standard.</p> <p>Battery direct loads cannot be Load Managed</p>
0821263	Wiring, Spare, 20 A 12V DC, 12 Ckt FB, Blue Sea 5026 Batt Dir 1st NFPA1900/ULC	<p><b>SPARE CIRCUIT</b></p> <p>There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus.</p> <p>The wires will have the following features:</p> <ul style="list-style-type: none"> <li>The positive wire will be connected directly to the battery power.</li> <li>The negative wire will be connected to ground.</li> <li>Wires will be capable of carrying 20 amps.</li> </ul> <p>Power and ground will terminate behind officer seat on front of EMS cabinet, low.</p> <p>Termination will be to a Blue Sea System, Model 5026, 12 circuit with negative bus bar, straight blade fuse block. The terminal block will include a cover with circuit labels.</p> <p>Wires will be protected to meet the NFPA Automotive Fire Apparatus standard.</p> <p>Battery direct loads cannot be Load Managed</p>

0807484	SP	Wiring, Spare, 3 A 12V DC 1st, Switch Cntrl	<b>SPARE CIRCUIT</b> There will be one (1) pair of wires, including a positive and a negative, installed on the apparatus. The wires will have the following features: The positive wire will be connected directly to the battery power. The negative wire will be connected to ground. Wires will be capable of carrying 3.0 amps. Power and ground will terminate behind officer seat for cradle point. Termination will be with heat shrinkable butt splicing. The circuit(s) will be activated by a switch in the driver's side switch panel. Wires will be protected to meet the NFPA Automotive Fire Apparatus standard. The circuit(s) may be load managed when the parking brake is set.
0708660	SP	Wiring, Spare, 37.5 A 12V DC, Cust Install Radio, 30A Bat Dir, 7.5A Sw & Grnd	<b>CUSTOMER SUPPLIED RADIO WIRING</b> There will be one (1) 12 volt combination wiring leads of which each will include one (1) direct battery, one (1) master battery switched and one (1) negative for use with radio equipment. Each lead will be 18.00" long and be provided behind the officers seat. The leads will be clearly marked in a coil and terminate with butt splices. A breaker rated for 30 amps will be provided for circuit protection of the direct battery lead with a minimum of 10 gauge wire. A breaker rated for 7.5 amps will be provided for circuit protection of the master battery switched lead. The wires will be colored coded as follows: <b>red for direct battery</b> <b>yellow for master battery switched</b> <b>black for ground</b>
0566101		Recess, Dash Panel, Officer Side, Vel/Imp	<b>DASH PANEL RECESS</b> The dash panel across from the officer will be recessed to accommodate the mounting of miscellaneous items. The recess will be 7.25" down x 7.81" back and 20.88" wide.
0819994		Radio, Jensen, AM/FM/WB, Bluetooth	<b>STEREO RADIO</b> There will be one heavy duty AM/FM / Weatherband / Bluetooth stereo radio. The radio will be installed per instrument panel layout. There will be 5.25" speakers installed one (1) pair of 5.25" speakers in the cab and one (1) pair of 5.25" speakers in the crew cab. The antenna will be a roof-mounted rubber antenna located in an open space, on the cab roof. The following Jensen features will be included: 180 watts max power (45W x 4); 100 watts RMS (25W x 4) Bluetooth® streaming audio (A2DP/AVRCP) Weatherband AM/FM tuner with 30 presets Audio settings (volume/bass/treble/balance/fade) Toggle switch between day and night display Daylight-readable, segmented LCD Two-wire power with non-volatile memory and clock support Low battery alert
0743033		Bin, Center Dash Console	<b>CENTER STORAGE BIN</b> A bin will be provided within reach of the officer in the center of the cab close to the windshield. The depth and width of the bin will be maximized for the space available. The bin is not intended for storage of loose equipment. Items stored on bin will be permanently attached to meet NFPA requirements.
0537251		Bracket, Mounting, For Push Buttons, Officer Side, VEL/IMP	<b>MOUNTING BRACKET FOR PUSH BUTTON CONTROLS</b> There will be a mounting bracket provided within easy reach of the officer next to the defrost air intake for the mounting of push button controls. The mounting bracket will be large enough to mount from top to bottom- the air horn, Q2B, Q2B brake, RPTT. Total of four (4) controls controls vertically, one in front of the other. The bracket will be fabricated from smooth aluminum and will be painted to match the cab interior.
0814201		Vehicle Information Center, 7" Color Display, Touchscreen, MUX, CL714	<b>INFORMATION CENTER</b> An information center employing a 7.00" diagonal touch screen color LCD display will be encased in an ABS plastic housing. The information center will have the following specifications: Operate in temperatures from -40 to 158 degrees Fahrenheit LCD optically bonded to hardened AR glass lens Five weather resistant user interface switches Grey with black accents Sunlight Readable Linux operating system Minimum of 1000nits rated display Display can be changed to an available foreign language A LCD display integral to the cab gauge panel will be included as outlined in the cab instrumentation area. Programmed to read US Customary <b>General Screen Design</b> Where possible, background colors will be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background will be used. If a caution or warning situation arises the following will occur:

An amber background/text color will indicate a caution condition.  
A red background/text color will indicate a warning condition.  
The information center will utilize an "Alert Center" to display text messages for audible alarm tones. The text messages will be written to identify the item(s) causing the audible alarm to sound. If more than one (1) text message occurs, the messages will cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" will change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color will be shown for all alert center messages.  
A label for each button will exist. The label will indicate the function for each active button for each screen. Buttons that are not utilized on specific screens will have a button label with no text or symbol.

## **Home/Transit Screen**

This screen will display the following:

- Vehicle Mitigation (if equipped)
- Water Level (if the water level system includes compatible communications to the information center)
- Foam Level (if the foam level system includes compatible communications to the information center)
- Seat Belt Monitoring Screen
- Tire Pressure Monitoring (if equipped)
- Digital Speedometer
- Active Alarms

## **On Scene Screen**

This screen will display the following and will be auto activated with pump engaged (if equipped):

- Battery Voltage
- Fuel
- Oil Pressure
- Coolant Temperature
- RPM
- Water Level (if equipped)
- Foam Level (if equipped)
- Foam Concentration (if equipped)
- Water Flow Rate (if equipped)
- Water Used (if equipped)
- Active Alarms

## **Virtual Buttons**

There will be four (4) virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.

## **Page Screen**

The page screen will display the following and allow the user to progress into other screens for further functionality:

- Diagnostics
- Faults
  - Listed by order of occurrence
  - Allows to sort by system
- Interlock
  - Throttle Interlocks
  - Pump Interlocks (if equipped)
  - Aerial Interlocks (if equipped)
  - PTO Interlocks (if equipped)
- Load Manager
  - A list of items to be load managed will be provided. The list will provide a description of the load. The lower the priority numbers the earlier the device will be shed should a low voltage condition occur.
  - The screen will indicate if a load has been shed (disabled) or not shed.
  - "At a glance" color features are utilized on this screen.
- Systems
  - Command Zone
  - Module type and ID number
  - Module Version
  - Input or output number
  - Circuit number connected to that input or output
  - Status of the input or output
  - Power and Constant Current module diagnostic information
  - Foam (if equipped)
  - Pressure Controller (if equipped)
  - Generator Frequency (if equipped)
- Live Data
  - General Truck Data
  - Maintenance
    - Engine oil and filter
    - Transmission oil and filter
    - Pump oil (if equipped)
    - Foam (if equipped)
    - Aerial (if equipped)
- Setup
  - Clock Setup
  - Date & Time
    - 12 or 24 hour format
    - Set time and date
  - Backlight
  - Daytime
  - Night time
  - Sensitivity
  - Unit Selection
  - Home Screen
  - Virtual Button Setup
  - On Scene Screen Setup

Configure Video Mode

Set Video Contrast

Set Video Color

Set Video Tint

Do Not Move

The screen will indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices will be indicated

Driver Side Cab Door

Passenger's Side Cab Door

Driver Side Crew Cab Door

Passenger's Side Crew Cab Door

Driver Side Body Doors

Passenger's Side Body Doors

Rear Body Door(s)

Ladder Rack (if applicable)

Deck Gun (if applicable)

Light Tower (if applicable)

Hatch Door (if applicable)

Stabilizers (if applicable)

Steps (if applicable)

Notifications

View Active Alarms

Shows a list of all active alarms including date and time of the occurrence is shown with each alarm

Silence Alarms - All alarms are silenced

Timer Screen

HVAC (if equipped)

Tire Information (if equipped)

Ascendant Set Up Confirmation (if equipped)

Button functions and button labels may change with each screen.

0814219

Vehicle Information Center, 7" Color Display, MUX, Additional, Touchscreen, CL714

## ADDITIONAL INFORMATION CENTER

There will be one (1) information center(s) each employing a 7.00" diagonal touch screen color LCD display located on the right side engine tunnel.

The information center(s) will have the following specifications:

Operate in temperatures from -40 to 158 degrees Fahrenheit

LCD optically bonded to hardened AR glass lens

Five weather resistant user interface switches

Grey with black accents

Sunlight Readable

Linux operating system

Minimum of 1000nits rated display

Display can be changed to an available foreign language

A LCD display integral to the cab gauge panel will be included as outlined in the cab instrumentation area.

Programmed to read US Customary

### General Screen Design

Where possible, background colors will be used to provide "At a Glance" vehicle information. If information provided on a screen is within acceptable limits, a green background will be used.

If a caution or warning situation arises the following will occur:

An amber background/text color will indicate a caution condition

A red background/text color will indicate a warning condition

The information center will utilize an "Alert Center" to display text messages for audible alarm tones. The text messages will be written to identify the item(s) causing the audible alarm to sound. If more than one (1) text message occurs, the messages will cycle every second until the problem(s) have been resolved. The background color for the "Alert Center" will change to indicate the severity of the "warning" message. If a warning and a caution condition occur simultaneously, the red background color will be shown for all alert center messages.

A label for each button will exist. The label will indicate the function for each active button for each screen. Buttons that are not utilized on specific screens will have a button label with no text or symbol.

### Home/Transit Screen

This screen will display the following:

Vehicle Mitigation (if equipped)

Water Level (if equipped)

Foam Level (if equipped)

Seat Belt Monitoring Screen

Tire Pressure Monitoring (if equipped)

Digital Speedometer

Active Alarms

### On Scene Screen

This screen will display the following and will be auto activated with pump engaged (if equipped):

Battery Voltage

Fuel

Oil Pressure

Coolant Temperature

RPM

Water Level (if equipped)

Foam Level (if equipped)

Foam Concentration (if equipped)

Water Flow Rate (if equipped)

Water Used (if equipped)

Active Alarms

### Virtual Buttons

There will be four (4) virtual switch panel screens that match the overhead and lower lighting and HVAC switch panels.

## Page Screen

## ATTACHMENT 1

The page screen will display the following and allow the user to progress into other screens for further functionality:

Diagnostics

Faults

Listed by order of occurrence

Allows to sort by system

Interlock

Throttle Interlocks

Pump Interlocks (if equipped)

Aerial Interlocks (if equipped)

PTO Interlocks (if equipped)

Load Manager

A list of items to be load managed will be provided. The list will provide a description of the load. The lower the priority numbers the earlier the device will be shed should a low voltage condition occur.

The screen will indicate if a load has been shed (disabled) or not shed.

"At a glance" color features are utilized on this screen.

Systems

Command Zone

Module type and ID number

Module Version

Input or output number

Circuit number connected to that input or output

Status of the input or output

Power and Constant Current module diagnostic information

Foam (if equipped)

Pressure Controller (if equipped)

Generator Frequency (if equipped)

Live Data

General Truck Data

Maintenance

Engine oil and filter

Transmission oil and filter

Pump oil (if equipped)

Foam (if equipped)

Aerial (if equipped)

Setup

Clock Setup

Date & Time

12 or 24 hour format

Set time and date

Backlight

Daytime

Night time

Sensitivity

Unit Selection

Home Screen

Virtual Button Setup

On Scene Screen Setup

Configure Video Mode

Set Video Contrast

Set Video Color

Set Video Tint

Do Not Move

The screen will indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices will be indicate

Driver Side Cab Door

Passenger's Side Cab Door

Driver Side Crew Cab Door

Passenger's Side Crew Cab Door

Driver Side Body Doors

Passenger's Side Body Doors

Rear Body Door(s)

Ladder Rack (if applicable)

Deck Gun (if applicable)

Light Tower (if applicable)

Hatch Door (if applicable)

Stabilizers (if applicable)

Steps (if applicable)

Notifications

View Active Alarms

Shows a list of all active alarms including date and time of the occurrence is shown with each alarm

Silence Alarms - All alarms are silenced

Timer Screen

HVAC (if equipped)

Tire Information (if equipped)

Button functions and button labels may change with each screen.

0816633	Collision Mitigation, HAAS Alert (R2V), HA7	<p><b>COLLISION MITIGATION</b></p> <p>There will be a HAAS Alert®, Model HA7 Responder-to-Vehicle (R2V) collision avoidance system provided on the apparatus. The HA7 cellular transponder module will be installed behind the cab windshield, as high and near to the center as practical, to allow clear visibility to the sky. The module dimensions are 5.40" long x 2.70" wide x 1.30" high, and operating temperature range is -40 degrees Celsius to 85 degrees Celsius.</p> <p>The transponder will be connected to the vehicle's emergency master circuit and battery direct power and ground.</p> <p>While responding with emergency lights on, the HA7 transponder sends alert messages via cellular network to motorists in the vicinity of the responding truck that are equipped with the WAZE app.</p> <p>While on scene with emergency lights on, the HA7 transponder sends road hazard alerts to motorists in the vicinity of the truck that are equipped with the WAZE app.</p> <p>The HA7 Responder-to-Vehicle (R2V) collision avoidance system will include the transponder and a 5 year cellular plan subscription.</p> <p>Activation of the HAAS Alert system requires a representative of the customer to accept the End User License Agreement (EULA) via an on-line portal.</p>
0606247	Vehicle Data Recorder w/CZ Display Seat Belt Monitor	<p><b>VEHICLE DATA RECORDER</b></p> <p>There will be a vehicle data recorder (VDR) capable of reading and storing vehicle information provided.</p> <p>The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A USB cable can be used to connect the VDR to a laptop to retrieve required information. The program to download the information from the VDR will be available to download on-line.</p> <p>The vehicle data recorder will be capable of recording the following data via hardwired and/or CAN inputs:</p> <ul style="list-style-type: none"> <li>Vehicle Speed - MPH</li> <li>Acceleration - MPH/sec</li> <li>Deceleration - MPH/sec</li> <li>Engine Speed - RPM</li> <li>Engine Throttle Position - % of Full Throttle</li> <li>ABS Event - On/Off</li> <li>Seat Occupied Status - Yes/No by Position</li> <li>Seat Belt Buckled Status - Yes/No by Position</li> <li>Master Optical Warning Device Switch - On/Off</li> </ul> <p>Internal clock syncs the time and date when a laptop is connected.</p> <p><b>Seat Belt Monitoring System</b></p> <p>A seat belt monitoring system (SBMS) will be provided on the Command Zone™ color display. The SBMS will be capable of monitoring up to 10 seating positions indicating the status of each seat position per the following:</p> <ul style="list-style-type: none"> <li>Seat Occupied &amp; Buckled = Green LED indicator illuminated</li> <li>Seat Occupied &amp; Unbuckled = Red LED indicator with audible alarm</li> <li>No Occupant &amp; Buckled = Red LED indicator with audible alarm</li> <li>No Occupant &amp; Unbuckled = No indicator and no alarm</li> <li>FAULT = Blue LED indicator illuminated</li> </ul> <p>The seat belt monitoring screen will become active on the Command Zone color display when:</p> <ul style="list-style-type: none"> <li>The home screen is active:</li> <li>and there is any occupant seated but not buckled or any belt buckled with an occupant.</li> <li>and there are no other Do Not Move Apparatus conditions present. As soon as all Do Not Move Apparatus conditions are cleared, the SBMS will be activated.</li> </ul> <p>The SBMS will include an audible alarm that will warn that an unbuckled occupant condition exists and the parking brake is released, or the transmission is not in park.</p>
0735006	Intercom, David Clark, 4-Pos, 2-Radio, (D, O, RPTT), 2obC, U3805	<p><b>INTERCOM SYSTEM</b></p> <p>There will be a four (4) position David Clark, Model U3800, intercom system with single radio interface capability at the driver and officer positions and remote radio push to talk buttons located per instrument panel layout . Two (2) crew cab outboard seats will have intercom only capability.</p> <p>The following components will be provided:</p> <ul style="list-style-type: none"> <li>One (1) U3805 Radio Cord Junction Module</li> <li>Two (2) U3815 Radio interface modules (Driver, Officer)</li> <li>Two (2) Remote Push To Talk Button Kits</li> <li>One (1) U3800 Master station (1 Crew)</li> <li>One (1) U3801 Remote headset intercom station (1 Crew)</li> <li>One (1) C3820 Power cord</li> </ul> <p>All necessary station cables and connectors</p>
0637058	David Clark Universal Radio Interfaces Included with Single/Dual System	<p><b>RADIO / INTERCOM INTERFACE INCLUDED</b></p> <p>All radio interfaced stations will have universal radio interfaces installed. The interface wiring will be routed within the cab to behind the officers seat .</p>

0597914	Headset, David Clark, H3442 Under Helmet, Flex Mic	<b>UNDER THE HELMET HEADSET</b> There will be four (4) under the helmet, headset(s) provided all seated locations. Each David Clark, Model H3442, headset will feature: M-7A noise canceling electret microphone Hybrid wire/flex boom assembly, 280° rotating, for perfect microphone placement on left or right side Dynamic earphone elements Advanced Undercut Gel Ear Seals for superior comfort Microphone on/off switch 6 ft. extended coil cord Adjustable overhead support assembly Carbon steel nape-band spring, black finish, rotates for left or right side mic positioning Independently Certified NRR: 23dB
0819774	Hangers For Headsets, Each, Ship Loose NFPA1900/ULC	<b>HEADSET HANGERS</b> There will be four (4) headset hanger(s) shipped with loose equipment. The hanger(s) will meet the current edition of applicable NFPA standards for equipment mounting.
0640003	Install Customer Provided Modem	<b>MOBILE RADIO MODEM INSTALLATION</b> There will be one (1) customer supplied modem(s) sent to the apparatus manufacturers preferred installer to be installed behind officer seat on front of EMS cabinet. Specific shipping requirements will be followed.
0616382	Install Customer Provided GPS/Multimode Antenna(s)	<b>GPS / MULTIMODE ANTENNA INSTALLATION</b> There will be one (1) customer supplied GPS / Multimode antenna(s) with stud mount for thick roof material to be installed on the roof. The antenna coax cable(s) will be run per the packing list / instructions provided to the third party installer. Specific shipping requirements will be followed. The GPS / Multimode antenna will be sent to the apparatus manufacturers preferred installer prior to cab fabrication.
0559156	Install Customer Provided Two-Way Radio(s)	<b>TWO WAY RADIO INSTALLATION</b> There will be one (1) customer supplied two way radio(s) sent to the apparatus manufacturers preferred radio installer to be installed PS overhead, loc 4 per the shipping document. No antenna mount or whip will be included in this option. Specific radio shipping requirements will be followed.
0687904	Antenna Mount, Custom Chassis, Cable Routed to Behind Officer Seat	<b>RADIO ANTENNA MOUNT</b> There will be three (3) standard 1.125", 18 thread antenna-mounting base(s) installed behind officer seat on the cab roof with high efficiency, low loss, coaxial cable(s) routed to behind the officer seat. A weatherproof cap will be installed on the mount.
0816158	Camera, Pierce, LS Mux, RS, LS, R, Cameras, AHD	<b>VEHICLE CAMERA SYSTEM</b> There will be a color vehicle camera system provided with the following: One (1) Analog High Definition (AHD) camera located on the right side of the apparatus, pointing rearward, displayed automatically with the right side turn signal. One (1) AHD camera located on the left side of the apparatus, pointing rearward, displayed automatically with the left side turn signal. One (1) AHD, black camera located at the rear of the apparatus, pointing rearward, displayed automatically with the vehicle in reverse. The camera images will be displayed on the left side vehicle information center display. Audio from the microphone on the rear camera will be emitted by an amplified speaker with volume control located behind the driver seat. The following components will be included: One (1) 1080P Rear Camera Two (2) 1080P Side Cameras All necessary cables
0814861	Camera, Switcher, Pierce, 4 channel, AHD, CVBS	<b>Camera Switcher</b> There will be one (1), HMU318 HD Image Processor multiplexer, 4 channel camera video switcher with remote control provided to allow single, dual, triplex, quad, trefoil, Y split and PIP view display modes on the vehicle information center display provided. The switcher will have one (1) CVBS, Composite Video Blanking and Sync, standard Definition video output and one (1) AHD, Analog High Definition video output for High Definition cameras.
0896458	Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT	<b>ELECTRICAL POWER CONTROL SYSTEM</b> The primary power distribution will be located forward of the officer's seating position and be easily accessible while standing on the ground for simplified maintenance and troubleshooting. Additional electrical distribution centers will be provided throughout the vehicle to house the vehicle's electrical power, circuit protection, and control components. The electrical distribution centers will be located strategically throughout the vehicle to minimize wire length. For ease of maintenance, all electrical distribution centers will be easily accessible. All distribution centers containing fuses, circuit breakers and/or relays will be easily accessible. Distribution centers located throughout the vehicle will contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership. Circuit protection devices, which conform to SAE standards, will be utilized to protect electrical



circuits. All circuit protection devices will be rated per NFPA requirements to prevent wire and component damage when subjected to extreme current overloads. General protection circuit breakers will be Type-I automatic reset (continuously resetting). When required, automotive type fuses will be utilized to protect electronic equipment. Control relays and solenoid will have a direct current rating of 125 percent of the maximum current for which the circuit is protected per NFPA.

## **Solid-State Control System**

A solid-state electronics based control system will be utilized to achieve advanced operation and control of the vehicle components. A fully computerized vehicle network will consist of electronic modules, electronic control modules to include black housings, a power indicator and status indicator located near their point of use to reduce harness lengths and improve reliability. The control system will comply with SAE J1939-11 recommended practices.

The control system will operate as a master-slave system whereas the main control module instructs all other system components. The system will contain patented Mission Critical software that maintains critical vehicle operations in the unlikely event of a main controller error. The system will utilize a Real Time Operating System (RTOS) fully compliant with OSEK/VDX™ specifications providing a lower cost of ownership.

For increased reliability and simplified use the control system modules will include the following attributes:

Green LED indicator light for module power

Red LED indicator light for network communication stability status

Control system self test at activation and continually throughout vehicle operation

No moving parts due to transistor logic

Software logic control for NFPA mandated safety interlocks and indicators

Integrated electrical system load management without additional components

Integrated electrical load sequencing system without additional components

Customized control software to the vehicle's configuration

Factory and field programmable to accommodate changes to the vehicle's operating parameters

To assure long life and operation in a broad range of environmental conditions, the solid-state control system modules will meet the following specifications:

Module circuit board will meet SAE J771 specifications

Operating temperature from -40C to +70C

Storage temperature from -40C to +70C

Vibration to 50g

IP67 rated enclosure (Totally protected against dust and also protected against the effect of temporary immersion between 15 centimeters and one (1) meter)

Operating voltage from eight (8) volts to 32 volts DC

The main controller will activate status indicators and audible alarms designed to provide warning of problems before they become critical.

## **Circuit Protection and Control Diagram**

Copies of all job-specific, computer network input and output (I/O) connections will be provided with each chassis. The sheets will indicate the function of each module connection point, circuit protection information (where applicable), wire numbers, wire colors and load management information.

## **On-Board Electrical System Diagnostics**

The on-board information center will include the following diagnostic information:

Text description of active warning or caution alarms

Simplified warning indicators

Amber caution indication with intermittent alarm

Red warning indication with steady tone alarm

Advanced diagnostic feature will be provided in this control system. From the Command Zone display or connected wireless device, these features allow the user to monitor the real-time status of every input or output on the vehicle. It also allows users logged in as an administrator to force on inputs or outputs to assist the troubleshooting process.

## **TCU Module with WiFi**

An in cab module will provide WiFi wireless interface and data logging capability. The WiFi interface will comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module will communicate through a black WiFi antenna allowing a line of site communication range of up to 300 feet with a roof mounted antenna.

The module will transmit a password protected web page to a WiFi enabled device (i.e. most smart phones, tablets or laptops) allowing two levels of user interaction. The firefighter level will allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level will allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system.

The TCU capability will record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data will be recorded at the time the fault occurs. The data TCU will provide up to 2 Gigabytes of data storage.

The TCU will provide a means to download the TCU information and update software in the device.

## **Indicator Light and Alarm Prove-Out System**

A system will be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.

## **Voltage Monitor System**

A voltage monitoring system will be provided to indicate the status of the battery system connected to the vehicle's electrical load. The system will provide visual and audible warning when the system voltage is below or above optimum levels.

The alarm will activate if the system falls below 11.8 volts DC for more than two (2) minutes.

## **Dedicated Radio Equipment Connection Points**

There will be three (3) studs provided in the primary power distribution center located in front of the officer for two-way radio equipment. The studs will consist of the following:

12-volt 40-amp battery switched power

12-volt 60-amp ignition switched power

12-volt 60-amp direct battery power

There will also be a 12-volt 100-amp ground stud located in or adjacent to the power distribution center.

## **EMI/RFI Protection**

To prevent erroneous signals from crosstalk contamination and interference, the electrical system will meet, at a minimum, SAE J551/2, thus reducing undesired electromagnetic and radio

		<p>frequency emissions. An advanced electrical system will be used to ensure radiated and conducted electromagnetic interference (EMI) or radio frequency interference (RFI) emissions are suppressed at their source.</p> <p>The apparatus will have the ability to operate in the electromagnetic environment typically found in fire ground operations to ensure clean operations. The electrical system will meet, without exceptions, electromagnetic susceptibility conforming to SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter. The vehicle OEM, upon request, will provide EMC testing reports from testing conducted on an entire apparatus and will certify that the vehicle meets SAE J551/2 and SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter requirements. Component and partial (incomplete) vehicle testing is not adequate as overall vehicle design can impact test results and thus is not acceptable by itself.</p> <p>EMI/RFI susceptibility will be controlled by applying appropriate circuit designs and shielding. The electrical system will be designed for full compatibility with low-level control signals and high-powered two-way radio communication systems. Harness and cable routing will be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility.</p>
0896456	Prognostics, Electrical System	<p><b>ELECTRICAL SYSTEM PROGNOSTICS</b></p> <p>There will be a software based vehicle tool provided to predict remaining life of the vehicles critical fluid and events.</p> <p>The system will send automatic indications to the Command Zone™ information center and/or wireless enabled devices to proactively alert of upcoming service intervals.</p> <p>Prognostics will include the following:</p> <p>Engine oil and filter</p> <p>Transmission oil and filter</p>
0730603	Electrical System, Velocity ESP, Cummins, Paccar	<p><b>ELECTRICAL</b></p> <p>All 12-volt electrical equipment installed by the apparatus manufacturer will conform to modern automotive practices. All wiring will be high temperature crosslink type. Wiring will be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers will be provided which conform to SAE Standards. Wiring will be color, function and number coded. Function and number codes will be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors will be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids.</p> <p>Electrical wiring and equipment will be installed utilizing the following guidelines:</p> <p>All holes made in the roof will be caulked with silicon. Large fender washers, liberally caulked, will be used when fastening equipment to the underside of the cab roof.</p> <p>Any electrical component that is installed in an exposed area will be mounted in a manner that will not allow moisture to accumulate in it. Exposed area will be defined as any location outside of the cab or body.</p> <p>Electrical components designed to be removed for maintenance will not be fastened with nuts and bolts. Metal screws will be used in mounting these devices. Also a coil of wire will be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work.</p> <p>Corrosion preventative compound will be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections will require this compound in the plug to prevent corrosion and for easy separation (of the plug).</p> <p>All lights that have their sockets in a weather exposed area will have corrosion preventative compound added to the socket terminal area.</p> <p>All electrical terminals in exposed areas will have silicon applied completely over the metal portion of the terminal.</p> <p>All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, will be furnished. Rear identification lights will be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads will be protected from damage by installing a false bulkhead inside the rear compartments.</p> <p>An operational test will be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.</p> <p>The results of the tests will be recorded and provided to the purchaser at time of delivery.</p>
0098841	Batteries, (6) Deka Grp 31, 1000 CCA each, Threaded Stud	<p><b>BATTERY SYSTEM</b></p> <p>Six (6) 12 volt, Deka, Model 1231MF, maintenance free group 31 batteries that include the following features, each, will be provided:</p> <p>1000 CCA (cold cranking amps)</p> <p>185 reserve capacity</p> <p>High cycle</p> <p>Ref. CA of 1190 at 0 degrees Fahrenheit</p> <p>185 reserve capacity</p> <p>Threaded studs</p>
0008621	Battery System, Single Start, All Custom Chassis	<p><b>BATTERY SYSTEM</b></p> <p>There will be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.</p> <p><b>MASTER BATTERY SWITCH</b></p> <p>There will be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.</p> <p>An indicator light will be provided on the instrument panel to notify the driver of the status of the battery system.</p>

0123174	Battery Compartment, Imp/Vel	<b>BATTERY COMPARTMENTS</b> The batteries will be stored in well-ventilated compartments that are located under the cab and bolted directly to the chassis frame. The battery compartments will be constructed of 3/16" steel plate and be designed to accommodate a maximum of three (3) group 31 batteries in each compartment. The compartments will include formed fit heavy-duty roto-molded polyethylene battery tray inserts with drains on each side of the frame rails. The batteries will be mounted inside of the roto-molded trays. <b>JUMPER STUDS</b> One (1) set of battery jumper studs with plastic color-coded covers will be installed on the battery box on the driver's side. This will allow enough room for easy jumper cable access.
0813848	Charger, Sngl Sys, IOTA, DLS-75, 75 amp, IQ4 Controller	<b>BATTERY CHARGER</b> There will be an IOTA, Model DLS 75, 75 amp battery charger with IQ4 controller provided. The battery charger will be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger.
0814869	Location, Cab, Charger, Behind Driver Seat	The battery charger will be located in the cab behind the driver seat.
0813791	Panel, Charger Display, Kussmaul, 091-94-12, Batt Dir	<b>REMOTE CONTROL PANEL - BATTERY CHARGER</b> There will be a Kussmaul™, Model 091-94-12 universal display panel included. It will be wired directly to the chassis batteries.
0814942	Location, Cab, Ind/Remote, Driver's Seat with Bracket	The battery charger indicator will be located near the driver's seat riser with special bracketry.
0814958	Location, Body, Inverter, RS Forward Compartment	<b>INVERTER LOCATION</b> The Inverter will be located in the right side forward body compartment located on the right wall as high as practical.
0811952	Not Required, Indicator/Remote Status	
0016857	Shoreline, 20A 120V, Kussmaul Auto Eject, 091-55-20-120, Super	<b>AUTO EJECT FOR SHORELINE</b> There will be one (1) Kussmaul™, Model 091-55-20-120, 20 amp 120 volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus. The shoreline inlet(s) will include red weatherproof flip up cover(s). There will be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting. The shoreline(s) will be connected to Battery charger and shoreline receptacles. There will be a mating connector body supplied with the loose equipment. There will be a label installed near the inlet(s) that state the following: Line Voltage Current Rating (amps) Phase Frequency
0026800	Shoreline Location	The shoreline receptacle will be located on the driver's side cab step well area as far rearward as practical.
0780161	Transfer Switch, Shoreline to Inverter 30 Amp and Under	<b>SHORELINE TO INVERTER TRANSFER SWITCH</b> There will be an automatic transfer switch between the shoreline inlet and the onboard inverter. The loads connected to the transfer switch will be power from the onboard inverter when the shore line is not energized and the battery switch is on.
0009429	Electric Power Only, Portable Winch	<b>ELECTRIC POWER FOR WINCH</b> Electric power provisions will be furnished for the portable winch from the chassis battery system. The receiver plug will be located front bumper near forward facing receiver, Front bumper each end, rear bumper. A total quantity of four (4) receptacles will be provided.
0647728	Alternator, 430 amp, Delco Remy 55SI	<b>ALTERNATOR</b> A Delco Remy®, Model 55SI, alternator will be provided. It will have a rated output current of 430 amps, as measured by SAE method J56. The alternator will feature an integral regulator and rectifier system that has been tested and qualified to an ambient temperature of 257 degrees Fahrenheit (125 degrees Celsius). The alternator will be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.

## ATTACHMENT 1

0032656	Switching, Duplicate, PS Cab Overhead, Membrane MUX	<b>DUPLICATE SWITCHES, OFFICER'S SIDE</b> All switches that are provided on the driver's side overhead switch panels will be duplicated on the officer's side overhead switch panels. The switches will be membrane type with an indicator light which is an integral part of the switch.
0802371	Programming, Scene and Perimeter Lts Remain On When PB Released, MUX	<b>SCENE AND PERIMETER LIGHT PROGRAMMING</b> The scene and perimeter light(s) located on cab, pump house and body will remain illuminated when the parking brake is released.
0092582	Load Manager/Sequencer, MUX	<b>ELECTRONIC LOAD MANAGER</b> An electronic load management (ELM) system will be provided that monitors the vehicles 12-volt electrical system, automatically reducing the electrical load in the event of a low voltage condition, and automatically restoring the shed electrical loads when a low voltage condition expires. This ensures the integrity of the electrical system. For improved reliability and ease of use, the load manager system will be an integral part of the vehicle's solid state control system requiring no additional components to perform load management tasks. Load management systems which require additional components will not be allowed. The system will include the following features: System voltage monitoring. A shed load will remain inactive for a minimum of five minutes to prevent the load from cycling on and off. Sixteen available electronic load shedding levels. Priority levels can be set for individual outputs. High Idle to activate before any electric loads are shed and deactivate with the service brake. If enabled: "Load Man Hi-Idle On" will display on the information center. Hi-Idle will not activate until 30 seconds after engine start up. Individual switch "on" indicator to flash when the particular load has been shed. The information center indicates system voltage. The information center, where applicable, includes a "Load Manager" screen indicating the following: Load managed items list, with priority levels and item condition. Individual load managed item condition: ON = not shed SHED = shed <b>SEQUENCER</b> A sequencer will be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation will allow a gradual increase or decrease in alternator output, rather than loading or dumping the entire 12 volt load to prolong the life of the alternator. For improved reliability and ease of use, the load sequencing system will be an integral part of the vehicle's solid state control system requiring no additional components to perform load sequencing tasks. Load sequencing systems which require additional components will not be allowed. Emergency light sequencing will operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights will be activated one by one at half-second intervals. Sequenced emergency light switch indicators will flash while waiting for activation. When the emergency master switch is deactivated, the sequencer will deactivate the warning light loads in the reverse order. Sequencing of the following items will also occur, in conjunction with the ignition switch, at half-second intervals: Cab Heater and Air Conditioning Crew Cab Heater (if applicable) Crew Cab Air Conditioning (if applicable) Exhaust Fans (if applicable) Third Evaporator (if applicable)
0736670	Headlights, Rect LED, HiViz FT-4X6-4KIT, AXT/Enf/Imp/Sab/Vel, Halo Alt Flash	<b>HEADLIGHTS WITH HALO FLASH</b> There will be a HiViz part number FT-4X6-4KIT, that includes four (4) 4.00" high x 6.00" long rectangular LED lights with "Halo" parking lamp illumination around the outside of the lamps mounted in the front quad style housing. The headlights to include chrome bezels on each side of the cab grille: the outside lamp on each side will contain a part number FT-4X6-HL with low beam LEDs the inside lamp on each side will contain a part number FT-4X6-H with high beam LEDs the "Halo" around the headlights will be controlled by the headlight/parking light switch the lights will be controlled through the headlight switch The "Halo" around the headlights will flash alternately from driver side to passenger side when emergency master switch is on, a "Halo Flash" switch in the cab is on, and the parking brake is released.
0648425	Light, Directional, WIn 600 Cmb, Cab Crn, Wrp Bzl Out HD Lts, Imp/Vel/AXT/Qtm	<b>DIRECTIONAL LIGHTS</b> There will be two (2) Whelen 600® series, LED combination directional/marker lights provided. The lights will be located on the outside cab corners, next to the headlights. The color of the lenses will be clear.

0620054	Light, Directional/Marker, Intermediate, Weldon 9186-8580-29 LED 2lts	<b>INTERMEDIATE LIGHT</b> There will be two (2) Weldon, Model 9186-8580-29, amber LED turn signal marker lights furnished, one (1) each side, in the rear fender panel. The light will double as a turn signal and marker light.
0736083	Lights, Clearance/Marker, Side, P25 LED 2 Lts, Others With Visor Lt	<b>CAB CLEARANCE/MARKER/ID LIGHTS</b> There will be two (2) amber LED lights provided to indicate the presence and overall length of the vehicle in the following locations: Two (2) lights with amber LEDs as front side clearance lights will be installed, one (1) on each side above the cab doors. All other forward facing clearance lights will be included with the visor scene light.
0563675	Lights, Clearance/Marker/ID, Rear, Truck-Lite 33050R LED 7Lts	<b>REAR CLEARANCE/MARKER/ID LIGHTING</b> There will be three (3) Truck-Lite®, Model 33050R, LED lights used as identification lights recessed and located at the rear of the apparatus per the following: As close as practical to the vertical centerline Centers spaced not less than 6.00" or more than 12.00" apart Red in color All at the same height There will be two (2) Truck-Lite, Model 33050R, LED lights recessed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following: To indicate the overall width of the vehicle One (1) each side of the vertical centerline As near the top as practical Red in color To be visible from the rear All at the same height There will be two (2) Truck-Lite, Model 33050R, LED lights recessed on the side of the apparatus as marker lights as close to the rear as practical per the following: To indicate the overall length of the vehicle One (1) each side of the vertical centerline As near the top as practical Red in color To be visible from the side All at the same height There will be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground. There will be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground. Per FMVSS 108 and CMVSS 108 requirements.
0804514	Lights, Tail, Wln M62BTT* Red Stop/Tail & M62T* Amber Dir Arw For Hsg	<b>REAR FMVSS LIGHTING</b> The rear stop/tail and directional lighting included in the rear tail light housing will include the following: Two (2) Whelen®, Model M62BTT, 4.30" high x 6.70" wide x 1.40" deep brake/tail lights with red LEDs Two (2) Whelen, Model M62T, 4.30" high x 6.70" wide x 1.40" deep directional lights with amber LEDs. The directional lights will be set to Sequence (Slow) to Solid - Steady On flash pattern. The lens color(s) to be clear.
0806466	Lights, Backup, Wln M62BU, LED, For Tail Lt Housing	There will be two (2) Whelen Model M62BU, LED backup lights provided in the tail light housing.
0889577	Bracket, License Plate & Light, P25 LED, Stainless Brkt	<b>LICENSE PLATE BRACKET</b> One (1) license plate bracket constructed of stainless steel will be provided at the rear of the apparatus. One (1) white LED light with chrome housing will be provided to illuminate the license plate. A stainless steel light shield will be provided over the light that will direct illumination downward, preventing white light to the rear.
0556842	Bezels, Wln, (2) M6 Chrome Pierce, For mtg (4) Wln M6 lights	<b>LIGHTING BEZEL</b> There will be two (2) Whelen, Model M6FCV4P, four (4) place chromed ABS housings with Pierce logos provided for the rear M6 series stop/tail, directional, back up, scene lights or warning lights.
0589905	Alarm, Back-up Warning, PRECO 1040	<b>BACK-UP ALARM</b> A PRECO, Model 1040, solid-state electronic audible back-up alarm that actuates when the truck is shifted into reverse will be provided. The device will sound at 60 pulses per minute and automatically adjust its volume to maintain a minimum ten (10) dBA above surrounding environmental noise levels.

0578264	Flash Pattern, California Title13, LED Warning Lights	<b>WARNING LIGHT FLASH PATTERN</b> The flash pattern of all the exterior warning lights will be set to meet the California, Title XIII flash pattern by either the light manufacturer's default flash pattern or by a conversion change to the certified flash pattern.
0769566	Lights, Perimeter Cab, Amdor AY-LB-12HW020 & AY-LB-12HW012 LED 4Dr	<b>CAB PERIMETER SCENE LIGHTS</b> There will be four (4) Amdor white LED strip lights provided, one (1) for each cab door and crew cab door. Two (2) Amdor, Model AY-LB-12HW020, 350 lumens each, 20.00" LED strip lights, one (1) for each cab door. Two (2) Amdor, Model AY-LB-12HW012, 190 lumens each, 12.00" LED strip lights, one (1) for each crew cab door. These lights will be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights.
0616293	Not Required, Lights Perimeter Pump House, No Pump	
0770056	Lights, Perimeter Body, Amdor AY-LB-12HW020 LED 2lts, Rear Step	<b>BODY PERIMETER SCENE LIGHTS</b> There will be two (2) Amdor, Model AY-LB-12HW020, 350 lumens, 20.00" long, white LED's, 12 volt DC lights provided at the rear step area of the body, one (1) each side shining to the rear. The perimeter scene lights will be activated when a switch within reach of the driver is activated, a switch within reach of the passenger is activated and the parking brake is applied.
0769570	Lights, Perimeter, Amdor AY-LB-12HW020 20", Brkt	<b>ADDITIONAL PERIMETER LIGHTS</b> There will be six (6) Amdor® Model AY-LB-12HW020, 350 lumens, 20.00" long, with white LED's installed with one (1) light under compartment LS1, one (1) light under compartment RS1, one (1) light under compartment LS4, one (1) light under compartment RS4, one (1) light under compartment LS5 and one (1) light under compartment RS5. With the chassis battery switch energized, the lights will be activated by the same means as the body perimeter lights.
0814230	Not Required, Enhanced Software for Perimeter Lts	
0608996	Lights, Step, P25 LED, HDR-NWI, Rear & Rec Walkway, Rr Sw	<b>STEP LIGHTS</b> Step lights will be provided both at the rear of the body and in the recessed walkway on the roof of the body. All step lights will be white LED lights. There will be one (1) step light provided on each side of the tailboard at the rear of the body. There will be one (1) chrome plated hooded step light provided every 4' in the recessed walkway. Additional step lights will be installed under the following conditions: If a roof access ladder is installed on the rear of the apparatus, there will be one (1) step light installed at the top of the each roof access ladder. The step lights will be controlled by a switch installed at the rear of the unit in an easily accessible area. All steps on the apparatus will be illuminated per the current edition of applicable NFPA standards.
0741463	Light, Extruded Brow, HiViz FT-BG2-R275C-80-ML-*, 80", Sw Fet	<b>12 VOLT LIGHTING</b> There will be a HiViz Model FT-BG2-R2**C-80-ML-*, 3.90" high x 80.00" long 64,600 raw lumens 12 volt DC light with white and amber LEDs provided and mounted on the cab roof front brow. The painted parts of the light housing and brackets to be black. The white flood and scene LEDs will be controlled by a switch at the driver's side switch panel, by a switch at the passenger's side switch panel and by a switch located next to the breaker panel. The amber identification and clearance LEDs will be controlled by the head light switch. The white LEDs may be load managed when the parking brake is applied.
0736729	Lights, HiViz FT-GESM LED 2nd	<b>12 VOLT LIGHTING</b> There will be one (1) HiViz®, Model FT-GESM, 20,500 equivalent lumens 8.65" high x 10.61" wide x 2.78" deep light(s) with white LEDs installed on the cab right side above EMS compartment door. The light(s) to include black optic holders, black bezels and black fixture body. The light(s) will be activated by a switch at the driver's side switch panel. The light(s) may be load managed when the parking brake is applied.
0736731	Lights, HiViz FT-GESM LED 1st	<b>12 VOLT LIGHTING</b> There will be one (1) HiViz®, Model FT-GESM, 20,500 equivalent lumens 8.65" high x 10.61" wide x 2.78" deep light(s) with white LEDs installed on the cab left side above EMS compartment door. The light(s) to include black optic holders, black bezels and black fixture body. The light(s) will be activated by a switch at the driver's side switch panel. The light(s) may be load managed when the parking brake is applied.

0733239	Lights, HiViz FT-GESM* LED 3rd	<p><b>12 VOLT LIGHTING - BODY</b></p> <p>There will be two (2) HiViz®, Model FT-GESM, surface mount, 20,500 equivalent lumens, 8.65" high x 10.61" wide x 2.78" deep light(s) to include black optic holders, black bezels and black fixture body with white LED's installed on the body (1) each side high on rear body.</p> <p>The light(s) will be activated by a switch at the driver's side switch panel and by a switch in a stainless steel cup located on the driver's side at the rear of the apparatus no more than 72.00" from the ground.</p> <p>The light(s) may be load managed when the parking brake is applied.</p>
0733336	Lights, HiViz FT-GESM* LED 2nd	<p><b>12 VOLT LIGHTING - BODY</b></p> <p>There will be two (2) HiViz®, Model FT-GESM, surface mount, 20,500 equivalent lumens, 8.65" high x 10.61" wide x 2.78" deep with white LED's installed on the body (1) forward and (1) rearward on right side hatch compartment. The light(s) to include black optic holders, black bezels and black fixture body.</p> <p>The light(s) will be activated by the same control that has been selected for the right side scene light(s).</p> <p>The light(s) may be load managed when the parking brake is applied.</p>
0733343	Lights, HiViz FT-GESM* LED 1st	<p><b>12 VOLT LIGHTING - BODY</b></p> <p>There will be two (2) HiViz®, Model FT-GESM, surface mount, 20,500 equivalent lumens, 8.65" high x 10.61" wide x 2.78" deep with white LED's installed on the body (1) forward and (1) rearward on left side hatch compartment. The light(s) to include black optic holders, black bezels and black fixture body. The light(s) will be activated by the same control that has been selected for the left side scene light(s).</p> <p>The light(s) may be load managed when the parking brake is applied.</p>
0807075	Lights, Rear Scene, Wln, PEL2*, 2Lts.	<p><b>REAR SCENE LIGHTS</b></p> <p>There will be two (2) Whelen® Model PEL2*, 12 volt DC white LED scene lights with black trim installed at the rear of the apparatus, under the rear scene lights.</p> <p>The lights will be controlled from the other rear scene light control.</p>
0795742	Not Required, Walking Surface, Alt. Walking Surface Lights, HDR	
0815031	SP Switch, Master, VDC Scene Lights, 1st	<p><b>SWITCH, MASTER FOR SCENE LIGHTS</b></p> <p>One (1) master switch will be provided for the 12V DC scene lights located brow, left and right sides of apparatus and rear of apparatus. The switch will control the scene lights in addition to the individual switching for the lights.</p> <p>The switch will be located Circuit breaker panel.</p>

## ATTACHMENT 1

0019030	HDR, Non-Walk-In, Aluminum	<p><b>HEAVY DUTY RESCUE BODY CONSTRUCTION</b></p> <p>The body will be built as a separate module prior to being mounted onto the substructure. The rescue body will be constructed of 5052 aluminum. The structural support framing and the gussets used will be of 2.00" (51 mm) square 0.125" (3 mm) wall 6061 aluminum alloy tubing. All exterior body corners will be 3.00" (76 mm) radius aluminum, corrosion resistant alloy 6061 extrusions. Spacing of the 2.00" (51 mm) vertical supports will not exceed 14.00" (356 mm) on center. The roof and corner extrusions will be reinforced with interconnecting gusset supports at all stress points. The body will be properly welded into a unitized construction. Proper reinforcing and supports will be utilized throughout the entire construction process to ensure strength and rigidity.</p> <p>The body will be supported by 2.00" (51 mm) x 2.00" (51 mm) x 0.25" (6 mm) wall aluminum tubing. The cross sill tubes will be spaced approximately 15.00" (381 mm) on center and interconnected to the body from front to rear.</p> <p>A 1.00" (25 mm) x 3.00" (76 mm) aluminum bar will be used as a stringer and will be welded to the cross sills. The stringer will be used to mount the body to the chassis frame rails.</p> <p><b>ROOF CONSTRUCTION</b></p> <p>The roof will be integral with the body construction. The roof will be constructed of 0.125" (3 mm) bright aluminum treadplate and supported by 2.00" (51 mm) square 0.125" (3 mm) wall tubing welded in place approximately 12.00" (305 mm) on center. The roof will be further reinforced with 2.00" (51 mm) square gussets welded approximately every 48.00" (1219 mm). The roof perimeters will be constructed of a 3.00" (76 mm) radius extrusion with an integral drip molding. The roof extrusion will also have an inset allowing the roof panel to be recessed into the extrusion giving further support and sealing effect at the outside edge.</p> <p>The roof panel will be welded to the roof extrusions and supports. All roof seams will be continuously welded.</p> <p><b>BODY AND COMPARTMENT SUPPORT</b></p> <p>The substructure for the body will not be integral with the body but will be a separate assembly. The bottom of each lower compartment floor will be supported by an under slung steel angle grid that will be bolted to the chassis frame rails with grade 8 bolts in order to transfer major stress to the chassis frame and not through the body. The under slung support will be constructed of 0.50" (13 mm) x 2.50" (64 mm) x 2.50" (64 mm) steel angle vertical supports. Horizontal members will be 0.38" (10 mm) x 2.00" (51 mm) x 3.00" (76 mm) and 0.38" (10 mm) x 2.50" (64 mm) x 3.50" (89 mm) steel angle.</p> <p>The complete substructure will be washed, primed and finish painted before being bolted to the chassis frame. A rubber coating will be applied over the painted under slung support structure for an additional corrosion barrier.</p> <p>A 3.00" (76 mm) x 0.75" (19 mm) rubber liner will be placed on top of the chassis frame rails. The liner will be used to prevent metal to metal contact where the body stringer rests on the chassis frame rails.</p> <p>The compartment floors will be bolted to the under slung substructure and the body will be secured to the chassis frame by a minimum of four (4) tie-down assemblies. Each tie-down assembly will consist of two (2) 2.00" (51 mm) x 6.25" (159 mm) x 0.75" (19 mm) steel plates and two (2) 14.00" (356 mm) long, 0.50" (13 mm) diameter steel rods. The tie-downs will be easily accessible so that the body may be removed.</p>
0051348	23.5' Body Length, 60.48.Tandem.48, NWI	<p><b>BODY LENGTH</b></p> <p>The length of the body will be 282.00" (7,163 mm).</p>
0656685	100" Body Width, NWI	<p><b>BODY WIDTH</b></p> <p>The width of the body will be 100.00".</p> <p><b>Compartment Depth</b></p> <p><b>Standard Depth</b></p> <p>All standard depth body compartments will measure 30.00" deep from the outside of the body to the rear compartment wall. The usable depth inside each side body compartment will be 28.00" deep.</p> <p><b>Transverse</b></p> <p>All transverse side body compartments will have a usable depth of 28.00" at the floor level. These compartments will extend over the frame rails through to the other side of the body.</p>
0051945	98" Body Height, NWI, Tandem	<p><b>BODY HEIGHT</b></p> <p>The height of the body will be 98.00" without any roof mounted options.</p>



**ROOF CONFIGURATION**

The roof of the body will be configured with side hatch compartments, a recessed walkway, and a recessed area for mounting equipment. The recessed area will be located on the right side at the front of the body, forward of the side hatch compartments.

The side hatch compartments will be provided on both sides of the body in the following configuration:

There will be two (2) hatch compartments on each side of the roof.

The recessed walkway will be centered between the side hatch compartments.

**Recessed Area**

The recessed area will be constructed of 0.125" aluminum treadplate and will have two (2) 1.00" diameter drain holes. The drains will be routed to drain below the body.

The recessed area will be sized appropriately in order to allow proper mounting space and clearance for all roof mounted equipment where the designated mounting location is the recess on the roof of the body. The maximum allowable depth of the recessed area will be equal to the depth of the recessed walkway. The recess will be configured so that whenever possible, items mounted in the recess will stow below the roof line of the body. If a piece of equipment is taller than the maximum depth of the recess, that item may protrude above the roof line.

**Hatch Compartments**

All compartment doors will be designed to hinge on the outboard side and will be held open with gas cylinder struts.

The outside walls of the compartments will be a double wall design to prevent equipment from denting the outside painted surface.

A 1.00" diameter drain will be provided on the floor of each compartment. The drains will be routed to drain below the body.

**Size of Hatch Compartments**

The clear width of the side hatch compartments differs depending on the width of the body. The clear width of each side hatch compartment will be as follows:

**Clear Width of Side Hatch Compartments According to Width of Body****Body Width****Clear Width of Hatch Compartments**

96.00"

26.50"

100.00"

28.50"

All hatch compartments on the roof of the body will have the same clear depth inside the compartment unless listed otherwise. The inside depth can differ depending on the height of the body. The clear depth inside each hatch compartment will be as follows:

**Inside Depth of All Hatch Compartments According to Body Height****Body Height****Inside Depth of Hatch Compartments**

90.00"

16.50"

98.00"

24.50"

100.00"

26.50"

103.25"

29.50"

106.25"

32.50"

Body Height Not Listed Here

Consult factory for depth of hatch compartments

**Recessed Walkway**

The recessed walkway will not be less than 30.00" wide. The depth of the walkway will be equal to the depth of the hatch compartments. The walkway will be constructed of aluminum treadplate and reinforced with 0.125" thick, 2.00" square aluminum tubing on 12.00" centers.

The treadplate in the walkway will be formed up 90 degrees at least 2.00" on each side to form a double 0.125" vertical wall for a water tight seal.

There will be two (2) 1.00" diameter drain holes provided in the walkway. The drains will be routed to drain below the body.

**ATTACHMENT 1**

0817962	SP	Doors, Roll-up/Swing Down Lap,Gortite,Side Compartments, Non-NFPA 2024 Compliant	<p><b>ROLLUP/SWING DOWN LAP DOOR, SIDE COMPARTMENTS</b></p> <p><b>ATTACHMENT 1</b></p> <p>There will be six (6) compartment doors installed on the side compartments that will be a combination rollup/swing down lap door where the lower section of the door is a swing down lap door and the upper section is a roll door.</p> <p>The combination rollup/swing down lap door style compartment door(s) will be provided LS1, LS4, LS5, RS1, RS4, RS5.</p> <p>Any compartment door opening that is not specified as having a rollup/swing down lap door will be provided with a full height rollup door unless specified otherwise.</p> <p>The lower swing down lap door will function as a space saving work platform. The platform will be as wide as the compartment door opening and approximately 18.00" (457 mm) deep. The external surface of the platform will be covered in smooth aluminum and painted job color. When folded down, the platform will provide an aluminum treadplate covered stepping surface with a rated capacity of 500 lb (227 kg). A handrail will be provided on one (1) side of the compartment for safe access to the platform. A D-ring latch will be provided to secure the lower section of the door in the stored position.</p> <p>The roll-up door section will be double faced, aluminum construction, painted one (1) color to match the lower portion of the body and manufactured by Gortite®.</p> <p>Lath sections will be an interlocking rib design and will be individually replaceable without complete disassembly of door.</p> <p>Between each slat at the pivoting joint will be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals will allow door to operate in extreme temperatures ranging from 180 to -40 degrees Fahrenheit (82 degrees to -40 degrees Celsius). Side, top and bottom seals will be provided to resist ingress of dirt and weather and be made of Santoprene.</p> <p>All hinges, barrel clips and end pieces will be nylon 66. All nylon components will withstand temperatures from 300 to -40 degrees Fahrenheit (148 degrees to -40 degrees Celsius).</p> <p>A A polished stainless steel lift bar with locking key latches to be provided for each roll-up door. The keys to be Model 751 to match all compartment doors and cab doors. The lift bar will be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge will be supplied over lift bar for additional area to aid in closing the door.</p> <p>Door(s) will be constructed from an aluminum box section. The exterior surface of each slat will be flat. The interior surfaces will be concave to provide strength and prevent loose equipment from jamming the door from inside.</p> <p>To conserve space in the compartment(s), the spring roller assembly will not exceed 3.00" (76 mm) in diameter.</p> <p>The header for the rollup door assembly will not exceed 4.00" (102 mm).</p> <p>A heavy-duty magnetic switch will be used for control of "open compartment door" warning lights. NFPA 1900, 2024 Edition, Section 12.6.1.1 states that the maximum stepping height will not exceed 18.00" (460 mm), with the exception of the ground to first step, which will not exceed 24.00" (610 mm) when the vehicle is loaded to its estimated in-service weight. The height of the stepping surface provided with this option will be higher than the required maximum of 24.00" when the vehicle is loaded to its estimated in-service weight and therefore will be Non-NFPA compliant.</p>
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0054566		23.5' Body Roll Doors, 60.48.Tandem.48, NWI	<p><b>EXTERIOR COMPARTMENTS</b></p> <p>The exterior compartment layout, dimensions and requirements will be minimum specifications. The doors will be able to withstand years of rugged service and wear. For this reason, the compartment door design, metal thickness and attachments will be strictly adhered to. The compartment will be constructed of .125" (3 mm)-corrosion resistant aluminum alloy, including all interior panels, floor and sides. The assemblies will be held inside fixtures while being welded. Compartment flooring will be of the sweep out design with the floor higher than the compartment door frame. All compartments will be supported on top, rear and bottom. The rear wall of each exterior compartment will be welded to the cross sills. Drip protection will be provided over all door openings with an integral roof extrusion or aluminum extrusion.</p> <p><b>WHEEL WELLS</b></p> <p>The rear fenders will be an integral part of the body sides and compartments. The inside of the fender will be fitted with a full circular inner fender liner. All screws and bolts, which protrude into a compartment, will have acorn nuts attached.</p>
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0039678	Left Forward Compt, 60" & 48", Roll, NWI	<p><b>LEFT FORWARD COMPARTMENTS</b></p> <p><b>First Compartment</b>  The first compartment will be located behind the cab. The compartment will be provided with a full-height roll-up door.  Dimensions of First Compartment  <b>Width</b>  Door Frame Opening: 60.00" wide; Clear Door Opening: 57.50" wide; Interior Compartment Width: 62.50" wide  <b>Height</b>  Door Frame Opening: 64.00" high; Clear Door Opening: 58.00" high; Interior Compartment Height: 66.88" high  The compartment will be transverse, extending through to the other side of the body. The width of the area over the frame rails will be 62.50" wide. The height of the area over the frame rails will be 49.25" high.</p> <p><b>Second Compartment</b>  The second compartment will be located behind the first compartment and directly ahead of the rear wheels. The compartment will be provided with a full-height roll-up door.  Dimensions of Second Compartment  <b>Width</b>  Door Frame Opening: 48.00" wide; Clear Door Opening: 45.50" wide; Interior Compartment Width: 50.88" wide  <b>Height</b>  Door Frame Opening: 64.00" high; Clear Door Opening: 58.00" high; Interior Compartment Height: 66.88" high  The compartment will be transverse, extending through to the other side of the body. The width of the area over the frame rails will be 50.88" wide. The height of the area over the frame rails will be 49.25" high.</p> <p><b>Compartment Loading</b>  The first compartment will be capable of holding 1,400 lb. The second compartment will be capable of holding 1,100 lb. The area over the frame rails in each compartment will be capable of holding an additional 1,000 lb.</p>	<b>ATTACHMENT 1</b>
0034999	Left Over Wheel Compt, 51.50"-51.50", Roll Door, Tandem, NWI	<p><b>LEFT OVER WHEEL COMPARTMENTS</b></p> <p><b>Forward Compartment</b>  A compartment will be provided above the forward tandem wheels. The compartment will be provided with a full-height roll-up door.  <b>Dimensions of Forward Compartment</b>  <b>Width</b>  Door Frame Opening: 51.50" wide; Clear Door Opening: 49.00" wide; Interior Compartment Width: 54.38" wide  <b>Height</b>  Door Frame Opening: 35.25" high; Clear Door Opening: 30.25" high; Interior Compartment Height: 38.13" high</p> <p><b>Rear Compartment</b>  A compartment will be provided above the rear tandem wheels. The compartment will be provided with a full-height roll-up door.  <b>Dimensions of Rear Compartment</b>  <b>Width</b>  Door Frame Opening: 51.50" wide; Clear Door Opening: 49.00" wide; Interior Compartment Width: 57.00" wide  <b>Height</b>  Door Frame Opening: 35.25" high; Clear Door Opening: 30.25" high; Interior Compartment Height: 38.13" high</p> <p><b>Compartment Loading</b>  Each compartment will be capable of holding 1,200 lb.</p>	
0018738	Left Rear Compt, 48" Roll, NWI	<p><b>LEFT REAR SIDE COMPARTMENT</b>  The left rear side compartment will be located directly behind the rear wheels. The compartment will be provided with a full-height roll-up door.  <b>Dimensions of Left Rear Side Compartment</b>  <b>Width</b>  Door Frame Opening: 48.00" wide; Clear Door Opening: 45.50" wide; Interior Compartment Width: 50.50" wide  <b>Height</b>  Door Frame Opening: 64.00" high; Clear Door Opening: 58.00" high; Interior Compartment Height: 66.88" high</p> <p><b>Compartment Loading</b>  The compartment will be capable of holding 1,100 lb.</p>	

0039681	Right Forward Compt, 60" & 48", Roll, NWI	<p><b>RIGHT FORWARD COMPARTMENTS</b></p> <p><b>First Compartment</b>  The first compartment will be located behind the cab. The compartment will be provided with a full-height roll-up door.  Dimensions of First Compartment  <b>Width</b>  Door Frame Opening: 60.00" wide; Clear Door Opening: 57.50" wide; Interior Compartment Width: 62.50" wide  <b>Height</b>  Door Frame Opening: 64.00" high; Clear Door Opening: 58.00" high; Interior Compartment Height: 66.88" high  The compartment will be transverse, extending through to the other side of the body. The width of the area over the frame rails will be 62.50" wide. The height of the area over the frame rails will be 49.25" high.</p> <p><b>Second Compartment</b>  The second compartment will be located behind the first compartment and directly ahead of the rear wheels. The compartment will be provided with a full-height roll-up door.  Dimensions of Second Compartment  <b>Width</b>  Door Frame Opening: 48.00" wide; Clear Door Opening: 45.50" wide; Interior Compartment Width: 50.88" wide  <b>Height</b>  Door Frame Opening: 64.00" high; Clear Door Opening: 58.00" high; Interior Compartment Height: 66.88" high  The compartment will be transverse, extending through to the other side of the body. The width of the area over the frame rails will be 50.88" wide. The height of the area over the frame rails will be 49.25" high.</p> <p><b>Compartment Loading</b>  The first compartment will be capable of holding 1,400 lb. The second compartment will be capable of holding 1,100 lb. The area over the frame rails in each compartment will be capable of holding an additional 1,000 lb.</p>	<b>ATTACHMENT 1</b>
0035001	Right Over Wheel Compt, 51.50"-51.50", Roll Door, Tandem, NWI	<p><b>RIGHT OVER WHEEL COMPARTMENTS</b></p> <p><b>Forward Compartment</b>  A compartment will be provided above the forward tandem wheels. The compartment will be provided with a full-height roll-up door.  <b>Dimensions of Forward Compartment</b>  <b>Width</b>  Door Frame Opening: 51.50" wide; Clear Door Opening: 49.00" wide; Interior Compartment Width: 54.38" wide  <b>Height</b>  Door Frame Opening: 35.25" high; Clear Door Opening: 30.25" high; Interior Compartment Height: 38.13" high</p> <p><b>Rear Compartment</b>  A compartment will be provided above the rear tandem wheels. The compartment will be provided with a full-height roll-up door.  <b>Dimensions of Rear Compartment</b>  <b>Width</b>  Door Frame Opening: 51.50" wide; Clear Door Opening: 49.00" wide; Interior Compartment Width: 57.00" wide  <b>Height</b>  Door Frame Opening: 35.25" high; Clear Door Opening: 30.25" high; Interior Compartment Height: 38.13" high</p> <p><b>Compartment Loading</b>  Each compartment will be capable of holding 1,200 lb.</p>	
0018830	Right Rear Compartment, 48" Roll, NWI	<p><b>RIGHT REAR SIDE COMPARTMENT</b>  The right rear side compartment will be located directly behind the rear wheels. The compartment will be provided with a full-height roll-up door.  <b>Dimensions of Right Rear Side Compartment</b>  <b>Width</b>  Door Frame Opening: 48.00" wide; Clear Door Opening: 45.50" wide; Interior Compartment Width: 50.50" wide  <b>Height</b>  Door Frame Opening: 64.00" high; Clear Door Opening: 58.00" high; Interior Compartment Height: 66.88" high</p> <p><b>Compartment Loading</b>  The compartment will be capable of holding 1,100 lb.</p>	
0834985	SP      Rear Compt, Roll/Swing Down Lap Door, Gortite, Tandem Axle	<p><b>REAR COMPARTMENT</b></p> <p><b>Roll-Up Door</b>  A combination roll-up/swing down lap door will be provided. The lower section of the door will be a swing down lap door and the upper section will be a roll-up door.  The lower swing down lap door will function as a space saving work platform. The platform will be as wide as the compartment door opening and approximately 18.00" (457 mm) deep. The external surface of the platform will be covered in smooth aluminum and painted job color. When folded down, the platform will provide an aluminum treadplate covered stepping surface with a rated capacity of 500 lb (227 kg). A handrail will be provided on one (1) side of the compartment for safe access to the platform. A D-Ring latch will be provided to secure the lower section of the door in the stored position.  The roll-up door section will be installed on the rear compartment. The door will be a Gortite® brand roll-up door manufactured by Dynatect™ Manufacturing. The door will be painted one (1)</p>	

color to match the lower portion of the body.

The door will be double faced aluminum construction. The aluminum will have an interlocking rib design and will be individually replaceable without complete disassembly of the door.

Between each slat at the pivoting joint will be a PVC inner seal to prevent metal to metal contact and to prevent dirt or moisture from entering the compartment. Seals will allow door to operate in extreme temperatures ranging from 180 to -40 degrees Fahrenheit (82 to -40 degrees Celsius).

The side, top and bottom seals will be made of Santoprene and will be provided to resist ingress of dirt and weather.

All hinges, barrel clips and end pieces will be nylon 66. All nylon components will withstand temperatures from 300 to -40 degrees Fahrenheit (149 to -40 degrees Celsius). Hardened plastic will not be acceptable.

A polished stainless steel lift bar with locking key latches to be provided for each roll-up door. The keys to be Model 751 to match all compartment and cab doors. The lift bar will be located at the bottom of door and will have latches on the outer extrusion of the doors frame. A ledge will be supplied over lift bar for an additional area to aid in closing the door.

The door will be constructed from an aluminum box section. The exterior surface of each slat will be flat. The interior surfaces will be concave to provide strength and prevent loose equipment from jamming the door from the inside.

To conserve space in the compartment, the spring roller assembly will not exceed 3.00" (76 mm) in diameter. A roll-up door that retracts below the compartment ceiling (garage door style) will not be acceptable.

The header for the roll-up door assembly will not exceed 4.00" (102 mm).

A heavy-duty magnetic switch will be used for control of the interior compartment lights and the "open compartment door" warning light in the cab.

#### **Compartment Door Size**

##### **Dimensions of Roll-Up Door (96.00" or 100.00" Wide Body)**

##### **Door Frame Opening**

##### **Clear Door Opening**

##### **With Recessed Walkway on Roof of Body**

Width: 40.00" (1,016 mm)

Height: 64.00" (1,626 mm)

Width: 37.25" (946 mm)

Height: 57.25" (1,454 mm)

##### **Without Recessed Walkway on Roof of Body**

Width: 40.00" (1,016 mm)

Height: 79.75" (2,026 mm)

Width: 37.25" (946 mm)

Height: 73.00" (1,854 mm)

#### **Interior Dimensions**

##### **Interior Width of Rear Compartment**

##### **Body Width**

##### **Interior Width of Compartment**

96.00" (2,438 mm) or 100.00" (2,540 mm)

40.00" (1,016 mm)

The frame rails will extend part of the way into the rear compartment at the floor level creating two (2) different values for the height and depth of the compartment. Both the height and depth of the compartment will be different when measured behind the frame rails as compared to when measured above the frame rails.

##### **Interior Height of Rear Compartment**

##### **Full Height (Behind Frame Rails)**

##### **Height Above Frame Rails**

##### **Any Body with Recessed Walkway on Roof of Body**

67.00" (1,702 mm)

49.37" (1,254 mm)

##### **90.00" (2,286 mm) High Body without Recessed Walkway**

82.75" (2,102 mm)

65.12" (1,654 mm)

##### **98.00" (2,489 mm) High Body without Recessed Walkway**

90.75" (2,305 mm)

73.12" (1,857 mm)

##### **Non-Standard Body Height without Recessed Walkway**

Dimension available upon request

Dimension available upon request

#### **Depth of Rear Compartment**

The rear compartment will be 26.00" (660 mm) deep at the floor level behind the frame rails.

The depth of the rear compartment above the frame rails can vary according to the configuration of the body. This dimension is dependent upon both the width and depth of the following compartments:

Left Rear Side Compartment

Right Rear Side Compartment

Tandem Left Over the Wheel Compartments

Tandem Right Over the Wheel Compartments

##### **Depth of Rear Compartment Over the Frame**

##### **48.00" Rear Side Compts**

##### **60.00" Rear Side Compts**

##### **Rear Side Compts: Width Not Listed Here**

##### **Rear Side Compts: Transverse (Any Width)**

##### **Standard Over Wheel Compts**

165.25" (4,197 mm)

177.25" (4,502 mm)

Width of Side Rear Compts + 117.25" (2,978 mm)

No compartment

##### **Forward Compt Transverse/Rearward Compt Standard**

110.75" (2,813 mm)

122.75" (3,118 mm)

Width of Side Rear Compts + 60.50" (1,537 mm)

No compartment

## Both Over Wheel Compts Transverse

51.88" (1,318 mm)

63.88" (1,623 mm)

Width of side Rear Compts + 5.88" (149 mm)

No compartment

## Over Wheel Compts: Non-Standard Width and/or Depth

Dimension available upon request

Dimension available upon request

Dimension available upon request

No compartment

## Compartment Loading

The compartment will be capable of holding 1,000 lb (454 kg). The area over the frame rails will be capable of holding an additional 2,000 lb (908 kg).

The door shall be double faced aluminum construction. The lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of the door.

Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and to prevent dirt or moisture from entering the compartment. Seals shall allow door to operate in extreme temperatures ranging from 180 to -40 degrees Fahrenheit (82 to -40 degrees Celsius).

The side, top and bottom seals shall be made of Santoprene and shall be provided to resist ingress of dirt and weather.

All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from 300 to -40 degrees Fahrenheit (149 to -40 degrees Celsius). Hardened plastic shall not be acceptable.

[Latch, Gortite, Roll-up]. The lift bar shall be located at the bottom of door and shall have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for an additional area to aid in closing the door.

The door shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surfaces shall be concave to provide strength and prevent loose equipment from jamming the door from the inside.

To conserve space in the compartment, the spring roller assembly shall not exceed 3.00" (76 mm) in diameter. A roll-up door that retracts below the compartment ceiling (garage door style) shall not acceptable.

The header for the roll-up door assembly shall not exceed 4.00" (102 mm).

A heavy-duty magnetic switch shall be used for control of the interior compartment lights and the "open compartment door" warning light in the cab.

## Compartment Door Size

**Dimensions of Roll-Up Door (96.00" or 100.00" Wide Body)**

### Door Frame Opening

#### Clear Door Opening

#### With Recessed Walkway on Roof of Body

Width: 40.00" (1,016 mm)

Height: 64.00" (1,626 mm)

Width: 37.25" (946 mm)

Height: 57.25" (1,454 mm)

#### Without Recessed Walkway on Roof of Body

Width: 40.00" (1,016 mm)

Height: 79.75" (2,026 mm)

Width: 37.25" (946 mm)

Height: 73.00" (1,854 mm)

## Interior Dimensions

### Interior Width of Rear Compartment

#### Body Width

#### Interior Width of Compartment

96.00" (2,438 mm) or 100.00" (2,540 mm)

40.00" (1,016 mm)

The frame rails shall extend part of the way into the rear compartment at the floor level creating two (2) different values for the height and depth of the compartment. Both the height and depth of the compartment shall be different when measured behind the frame rails as compared to when measured above the frame rails.

### Interior Height of Rear Compartment

#### Full Height (Behind Frame Rails)

#### Height Above Frame Rails

#### Any Body with Recessed Walkway on Roof of Body

67.00" (1,702 mm)

49.37" (1,254 mm)

#### 90.00" (2,286 mm) High Body without Recessed Walkway

82.75" (2,102 mm)

65.12" (1,654 mm)

#### 98.00" (2,489 mm) High Body without Recessed Walkway

90.75" (2,305 mm)

73.12" (1,857 mm)

#### Non-Standard Body Height without Recessed Walkway

Dimension available upon request

Dimension available upon request

## Depth of Rear Compartment

The rear compartment shall be 26.00" (660 mm) deep at the floor level behind the frame rails.

The depth of the rear compartment above the frame rails can vary according to the configuration of the body. This dimension is dependent upon both the width and depth of the following compartments:

Left Rear Side Compartment

Right Rear Side Compartment

Tandem Left Over the Wheel Compartments

Tandem Right Over the Wheel Compartments

### Depth of Rear Compartment Over the Frame

**48.00" Rear Side Compts**

**60.00" Rear Side Compts**

**Rear Side Compts: Width Not Listed Here**

## Rear Side Compts: Transverse (Any Width)

### Standard Over Wheel Compts

165.25" (4,197 mm)

177.25" (4,502 mm)

Width of Side Rear Compts + 117.25" (2,978 mm)

No compartment

### Forward Compt Transverse/Rearward Compt Standard

110.75" (2,813 mm)

122.75" (3,118 mm)

Width of Side Rear Compts + 60.50" (1,537 mm)

No compartment

### Both Over Wheel Compts Transverse

51.88" (1,318 mm)

63.88" (1,623 mm)

Width of side Rear Compts + 5.88" (149 mm)

No compartment

### Over Wheel Compts: Non-Standard Width and/or Depth

Dimension available upon request

Dimension available upon request

Dimension available upon request

No compartment

### Compartment Loading

The compartment shall be capable of holding 1,000 lb (454 kg). The area over the frame rails shall be capable of holding an additional 2,000 lb (908 kg).

0829979	SP	MODIFICATION, Raised Rear Roll-up Door, 74.00" FF	<b>RAISED REAR ROLL-UP DOOR</b> The rear compartment door will be raised to accommodate equipment storage in the rear compartment. Raising the roll of the door will provide 49.38" of clear height extending over the frame rails. The door roll will blister into the side hatch compartments and create a raised step at the rear of the notched walkway.
0669051	SP	MODIFICATION, Shelf Track, Full Height	All shelf track is to be full height of the area in which it is installed.
0568053		Recess, Awning Mount, Side of Body	<b>AWNING MOUNT RECESS</b> There will be a recess provided in the side of the body to mount an awning. The awning housing will mount inside the recess and will not protrude past the side of the body. Recessing the awning will not interfere with the operation of the awning. The addition of the recess will create a 4.00" protrusion into the adjacent roof area, thereby reducing the amount of space on the roof in the immediate vicinity of the recess. If the recess is adjacent to a hatch compartment, the interior of the hatch compartment will be reduced by 4.00". If the recess is adjacent to a recessed area such as a light tower recess, the amount of space available in the recessed area will be reduced by 4.00". If the recess for the awning protrudes into an interior section, it will reduce the amount of interior space available in the immediate vicinity of the recess. There will be a recess for a total of two (2) awning(s) located driver side of body like job 38076.
0698544		Awning, Electric 12 VDC, HDR body, Girard, G-2000, Under 12', Painted Cover	<b>ELECTRIC AWNING</b> An electrically opening and closing awning with 12 VDC electric motor will be supplied. The awning will be stored in a metal enclosure on the side of the body with end fairings for blending into the side of the body when not in use. The awning enclosure will be painted match body paint color. A switch will be provided for easy push button convenience inside an adjacent forward compartment. A sensor will be provided to retract the awning automatically in high wind conditions. There will be no manual override provided for the electric motor. The awning will be as long as possible with a minimum length of 83.00" and a maximum length of 11' 11.00". The awning projection will vary according to the length of the awning, ranging from a 3' 3.00" projection for the minimum length to a 9' 9.00" projection for the maximum length awning. When fully extended, the awning will be self supported without the use of poles extending to the ground. The awning will activate the Do Not Move Truck indicator circuit to alert the cab occupant(s) that the awning is not in the stowed position when the parking brake is released. The awning will be red. A total of two (2) will be supplied. The awning will be installed driver side body with one over LS1, LS2 and first half of LS3, Second awning over LS3, LS4 and LS5 like 38076.

0818519	Hitch, Receiver, Rear/Sides, Through Body, No Ball or Wiring	<p><b>HITCH RECEIVERS</b></p> <p>A total of three (3) hitch receivers will be provided on the apparatus. The hitch receivers will be constructed of heavy steel tubing and reinforced to the apparatus framework.</p> <p><b>Rear Receiver</b></p> <p>A class IV hitch receiver will be installed under the body at the rear of the apparatus. The hitch receiver will be tested to provide a 2:1 straight line pull no-yield safety factor over a maximum load rating of 10,000 lb. As a result, the hitch receiver will be capable of retaining a portable winch with a rating of no more than 10,000 lb. The hitch receiver will also be capable of being used for rope operations when used with properly rated equipment. NFPA 1900, 2024 edition, Section 10.3.3.2 requires that if the apparatus is equipped to tow a trailer, an additional 45 amps will be added to the minimum continuous electrical load to provide electrical power for the federally required clearance and marker lighting and the optical warning devices mounted on the trailer. This hitch receiver will not be utilized to tow a trailer. Therefore, the additional amps will not be included with the minimum continuous load. A label will be provided near the hitch receiver stating that this receiver will not be used for towing.</p> <p><b>Side Receivers</b></p> <p>There will be one (1) hitch receiver installed through the body fender panel in front of the rear wheels on each side of the body. Each hitch receiver will be tested to provide a 2:1 straight line pull no-yield safety factor over a maximum load rating of 10,000 lb. As a result, each of these hitch receivers will be capable of retaining a portable winch with a rating of no more than 10,000 lb. Each hitch receiver will also be capable of being used for rope operations when used with properly rated equipment. A spring loaded stainless steel door will be provided on the exterior of the body to cover the end of each side hitch receiver. Each door will have a flush latch provided to prevent the door from opening while not in use. A stainless steel trim ring will be provided to prevent damage to the exterior finish around the opening. Access to the pin of each side hitch receiver will be provided through the compartment ahead of the receiver and through the fender liner. A small hinged door will be provided to cover the fender access in order to prevent debris from entering the area of the retaining pin. A rubber cover will be provided to cover the access inside the forward compartment to prevent road dust from entering the compartment.</p>
0524842	Ladder, Access, Alum, RH Rear, PUC Style	<p><b>ROOF ACCESS LADDER</b></p> <p>A wide easy climbing access ladder, constructed of aluminum rungs and extruded aluminum rails, will be provided on the right side at the rear of the apparatus. The inside climbing area of the ladder will be 13.75" wide. The lower section of the ladder will be retractable into the upper section to eliminate interference with the rear FMVSS lights. When lowered the bottom rung will be lower than the body to allow a lower first step height. The ladder will be slanted when in use for easy access, and fold against the body for storage to reduce the overall length. Corrosion resistant, stainless steel spring-loaded locks will hold the ladder in place.</p>
0818213	Remove Interior Divider Between Hatch Compartments	<p><b>NO DIVIDER IN HATCH COMPARTMENT</b></p> <p>The hatch compartment(s) will not have a divider that separates it from the adjoining hatch compartment. There will be a total of four (4) divider(s) removed from all hatch compartments.</p>
0629341	Rope Anchors, Pair, 9,000 lb Rating	<p><b>ROPE ANCHORS</b></p> <p>There will be three (3) pairs of chrome plated steel eyebolts installed on the body to serve as rope anchor points. Each anchor will have an inside diameter of 2.00" (51 mm) and will be supported to provide a maximum of 9,000 lb (4,082 kg) no-yield condition with a straight line pull. Each pair of anchors will be installed in the following locations:  One (1) on each side of the body facing the rear in the upper corners of the body  One (1) on each side of the body in the upper corners at the front of the body  One (1) on each side of the body in the upper corners at the rear of the body  Stainless steel scuffplates will be provided behind each anchor point.</p>
0078804	Trim, Body Seams, Painted IPO Std.	<p><b>TRIM BODY SEAMS</b></p> <p>All body seams will be trimmed with the same material as the body construction and painted to match the body paint.</p>
0095566	Brackets, Storage Mounting, for Portable Winch	<p><b>MOUNTING BRACKET FOR PORTABLE WINCH</b></p> <p>Mounting brackets will be provided for mounting a portable winch. The brackets will be located on slide out tray in lower section of B1, offset to one side so tray can be used for other storage..</p>
0023359	Floor Extension, Compt	<p><b>FLOOR EXTENSION</b></p> <p>There will be a floor extension from the transversed area over the frame to the compartment door. The extension will have a 1.50" vertical lip and a return bend. The extension will be support by angles off the side partitions of the compartment. A total of five (5) will be provided and located B1, LS4, LS5, RS4, RS5, .</p>



0541225		Trough, Storage, Alum, Custom Size, (First)	<b>STORAGE TROUGH</b> A trough assembly will be provided for storing equipment. The trough will be fabricated of aluminum. The exterior of the trough will be finished to match the compartment it is mounted in. The interior of the trough will not be finished. The clear dimensions required for the inside of the trough will be: 85" L x 23" W x 8" H. There will be no restraint provided to hold the equipment in place. There will be a total of one (1) of these storage trough(s) provided. The storage trough(s) will be located in driver side center hatch compartment for stokes basket next to walkway (Stokes size is 83.50"L x 23.50"W x 7.50"H ).
0655911		Rack, Little Giant	<b>LADDER STORAGE RACK</b> A storage rack constructed of 0.12" aluminum will be provided for storage of one (1) Little Giant ladder in the folded position. The outside of the rack will be painted to match the compartment interior color. The inside of the rack will not be painted. The model of the ladder will be Revolution 2.0 - Model 17, 13117. There will be a single retaining strap with hook and loop fastener provided to hold the equipment in place. A total quantity of one (1) storage rack(s) will be provided TBD.
0833965	SP	Recess For Reel(s), In Hatch Compartment(s) w/Access Panel	<b>RECESS FOR REEL(S)</b> Accommodations will be provided to allow the reel(s) to be recessed into the hatch compartments through the top(s) of the body compartment(s) (reels priced separately). Each reel will be mounted so that it pays out into the compartment directly below the reel. A removable cover will be installed over the reel(s). If multiple reels are located adjacent to each other in one (1) hatch compartment, there will be one (1) cover provided that covers all the reels in that hatch compartment rather than an individual cover for each reel. The cover(s) will be finished to match the interior of the hatch compartment(s). There will be one (1) maintenance access panel provided for each reel. The access panel will be provide with a flush lift and turn latch. A total of two (2) reels will be mounted in this manner in the following location(s): above LS4 and RS4 for cord reels
0725652	SP	Rack, Plywood Storage, Single Slot, Multiple Sheets, Rear Compartment	<b>PLYWOOD STORAGE RACK IN REAR COMPARTMENT</b> A plywood storage rack will be provided in the rear compartment. The rack will consist of a single storage slot utilized for storing multiple sheets of plywood. The clear dimensions required for the interior of the rack will be 9" wide (sized to fit qty (4) 1 1/8" sheets and (6) .75" 4' x 8' plywood ) . Poly material will be installed on the floor of the trough The rack will be provided with a single retaining strap with hook and loop fastener to secure the equipment while the apparatus is in motion. The location of the rack in the rear compartment will be located Right side of B1.
0045071		Not Required, Bumper, Rear Non-Walk-In	
0793822		Not Required, Water Tank, Rescue	
0023410		Not Required, Overflow	
0028107		Not Required, Foam Cell Modification	
0553729		Not Required, Restraint, Water Tank, Heavy Duty	
0680848		No Hose Bed, HDR	
0013534		Not Required, Running Boards	
0690026		Wall, Rear, Body Material, HDR	<b>REAR WALL, BODY MATERIAL</b> The rear wall will be smooth and the same material as the body.
0003540		Tow Eyes (2) (Tanker/Rescue)	<b>TOW EYES</b> There will be a total of two (2) painted tow eyes provided and mounted directly to the chassis frame rails at the rear of the apparatus. The inner and outer edges of the tow eyes will have a radius.
0556162		Not Req'd, Compt Blister in Front of Rear Axle	

0019845	Guard, Drip Pan, S/S, Rollup Door	<b>DOOR GUARD</b> There will be 11 compartment doors that will include a guard/drip pan designed to protect the roll-up door from damage when in the retracted position and contain any water spray. The guard will be fabricated from stainless steel and installed all body roll up doors.
0003915	Keyed Locks for Latches, Lap Doors (#751 Lock to Match Cab)	<b>KEYED LOCK(S)</b> A keyed lock will be furnished for seven (7) compartment doors. The compartmentation, to have a keyed lock, will be all lap doors.
0636819	Trim, Rollup Door, Painted Job Color, by Amdor	<b>ROLL-UP DOOR TRIM</b> The exterior of the aluminum trim around the door opening will be painted to match job color. There will be eleven (11) compartments with the trim painted.
0659111	Lights, Compt, Amdor AY-9220 LED, Dual Lt Strips, HDR	<b>COMPARTMENT LIGHTING</b> There will be eleven (11) compartments with Amdor, Model AY-9220, white 12 volt DC LED compartment light strips. The lights will be mounted with mechanical fasteners. There will be two (2) strip lights installed vertically in each compartment opening per the latest NFPA requirements. The lights will be activated when the battery switch is on and the respective compartment door is opened.
0656743	Lights, Compt, Amdor, AY-9220 LED, Strip LED Additional, Horizontal	<b>ADDITIONAL COMPARTMENT LIGHTS</b> There will be two (2) compartments that include an additional Amdor, Model AY-9220, LED strip light in the compartment mounted horizontally over the door opening. The lights will be mounted with mechanical fasteners. The additional compartments lights will be installed above tray with tool board in LS2 and RS3. The additional lights will be activated when the battery switch is on and the respective door is opened.
0667426	Lights, Compt, Amdor, AY-9220-42, LED, 41.61", Additional	<b>ADDITIONAL COMPARTMENT LIGHTING</b> There will be four (4) Amdor, Model AY-9220-42, 41.61" long white 12 volt DC LED light stick(s) provided. The lights will be installed mounted vertically, centered on rear wall and partition wall LS5/RS5 and LS4/RS4. The lights will be mounted with mechanical fasteners. Opening the compartment door(s) will automatically turn the compartment lighting on. These lights may be load managed when the parking brake is applied.
0606068	Lights, Hatch Compt, Pierce LED Strip Lights, HDR	<b>HATCH COMPARTMENT LIGHTING</b> There will be an LED strip light mounted on the hinged side of the interior in each hatch compartment. Each light will be wired to an automatic door switch and to the "open door" indicator inside the cab.
0746655	SP Shelves, Fixed, Low/Special Side Height, Top of Cabinet	<b>FIXED SHELVES</b> There will be one (1) shelf provided in RS1 mounted on top of the ctech cabinet with a 1" lip all the way around. Only as deep/wide as the ctech cabinet so that it will pull out with the ctech and the floor tray.. The shelf construction will consist of .188" aluminum painted spatter gray. A capacity rating will not be available on this tray due to a reduced side height being less than 2.00". Each shelf will be fixed in its location in the compartment. The side height of the shelf/shelves will be as follows: Front: 1.00" high Rear: 1.00" high Left & Right Sides: 1.00" high
0652243	Shelf, Adjustable, 500 lb Capacity, 3/4 Trans, HDR	<b>THREE QUARTER DEPTH ADJUSTABLE SHELF</b> An adjustable shelf will be provided for use in a transverse side body compartment. The shelf will be constructed of 0.188" thick aluminum with 2.00" high sides. The shelf will be provided painted spatter gray. The shelf will be three quarters (3/4) the depth of the transverse compartment and as wide as possible for the specified mounting location. The shelf will be secured within the compartment by means of adjustable threaded fasteners. These fasteners will slide in an extruded aluminum track to provide height adjustment. The shelf will have a load capacity of 500 lb. A total of two (2) shelves will be provided (1) RS5 forward partition tight to ASME bottles and (1) RS% forward partition upper area..

0652242	Shelf, Adjustable, 500 lb Capacity, Full Trans, HDR	<p><b>FULL TRANSVERSE ADJUSTABLE SHELF</b></p> <p>An adjustable shelf will be provided for use in a transverse side body compartment. The shelf will be constructed of 0.188" thick aluminum with 2.00" high sides. The shelf will be provided painted spatter gray.</p> <p>The shelf will span the full depth of the transverse compartment and will be as wide as possible for the specified mounting location.</p> <p>The shelf will be secured within the compartment by means of adjustable threaded fasteners. These fasteners will slide in an extruded aluminum track to provide height adjustment.</p> <p>The shelf will have a load capacity of 500 lb.</p> <p>A total of one (1) shelf will be provided (1) top of LS4/RS4, .</p>
0652281	Tray, 500 lb Slide-Out, 2" Sides - Adj. Height, Standard Depth Compt, HDR	<p><b>STANDARD DEPTH SLIDE-OUT ADJUSTABLE HEIGHT TRAY</b></p> <p>There will be seven (7) slide-out trays provided.</p> <p>Each tray will have 2.00" high sides and a capacity rating of up to 500 lb in the extended position. Each tray will be as deep as possible for a standard depth compartment and as wide as possible for the specified mounting location.</p> <p>Each tray will be provided painted spatter gray.</p> <p>Each tray will be mounted on a pair of side mounted slides. The slide mechanisms will have ball bearings for ease of operation and years of dependable service. The slides will be mounted to shelf tracks to allow the tray to be adjustable up and down within the designated mounting location.</p> <p>An automatic lock will be provided for both the in and out tray positions. The lock trip mechanism will be located at the front of the tray and will be easily operated with a gloved hand.</p> <p>The tray(s) will be located (2) RS1, (3) LS1, (2) LS2 rear partition.</p>
0830891	SP Tray, 1000 lb, Slide-out, 1-Way, Adj, 3" Sides, OSS, 120" Deep, HDR	<p><b>120.00" DEEP SLIDE-OUT TRAY</b></p> <p>There will be one (1) slide-out tray provided for use in either the rear compartment.</p> <p>Each tray will be 120.00" deep and will have 3.00" high sides. The tray will be designed with a width that maximizes the amount of space available in the designated mounting location, with a minimum width of 21.00 wide and a maximum width of 60.00".</p> <p>Each tray will be mounted on an On Scene Solutions, 81 series heavy duty slide assembly capable of 100% extension.</p> <p>Each slide will be constructed of anodized aluminum extrusions and assembled using stainless steel fasteners (no welds). Each slide will use a three (3) extrusion rail design utilizing twelve to sixteen (12 - 16) urethane rollers. Each roller will contain two (2) precision roller bearings mounted in an aluminum hub with a molded on urethane cover. The rollers will not lose contact with the rail extrusion during operation of the slide unit. Each slide will have a cable operated, spring loaded latch complimented by a large hand opening and red pull handle (Pull to Release).</p> <p>The slide will lock in the closed and full extension positions.</p> <p>The tray will be rated for a maximum distributed load of 1,000 lb with 500 lb end load.</p> <p>The vertical location of each tray within the compartment will be adjustable.</p> <p>The tray(s) will be located B1 left of partition above cut table roll out tray.</p>
0652264	Tray, 500 lb, Slide-out, 2-Way, Utility, Adj Height, 3" Sides, Full Trans, HDR	<p><b>TRANSVERSE TWO (2) WAY SLIDE-OUT UTILITY TRAY</b></p> <p>There will be three (3) slide-out trays provided for use in the transverse side body compartment (s).</p> <p>Each tray will be a utility style tray that is rated for up to 500 lb in the extended position. The bottom of each tray will be constructed of 0.19" thick aluminum while special aluminum extrusions will be utilized for the tray sides, ends and tracks. The corners will be welded. Each tray will be provided painted spatter gray.</p> <p>Each tray will have 3.00" high sides, will span the full depth of the transverse compartment and will be as wide as possible for the designated mounting location.</p> <p>Each tray will be supported with a minimum of six (6) ball bearing rollers. Each tray will slide out two thirds (2/3) of its length to either side of the apparatus.</p> <p>Automatic locks will be provided for both the in and out positions. The trip mechanism for the locks will be located at the front of each tray for ease of use with a gloved hand.</p> <p>The vertical location of each tray within the compartment will be adjustable.</p> <p>The tray(s) will be located (2) LS4/RS4, (1) LS5/RS5 rear of partition.</p>
0652263	Tray, 200 lb, Tilt/Slide-out, 30 Deg, Adj, Standard Depth compt, HDR	<p><b>STANDARD DEPTH SLIDE-OUT/TILT-DOWN TRAY</b></p> <p>There will be one (1) slide-out tray provided.</p> <p>The bottom of each tray will constructed of 0.188" thick aluminum while special aluminum extrusions will be utilized for the tray sides, ends, and tracks. The corners will be welded to form a rigid unit. The tray will be provided painted spatter gray.</p> <p>The tray will have 3.00" high sides, will be full depth for a standard depth compartment and will be as wide as possible for the specified mounting location.</p> <p>A spring loaded lock will be provided on each side at the front of the tray. Releasing the locks will allow the tray to slide out approximately two-thirds (2/3) of its length from the stowed position and tip 30 degrees down from horizontal. The tray will be equipped with ball bearing rollers for smooth operation.</p> <p>Rubber padded stops will be provided for the tray in the extended position.</p> <p>The capacity rating of the tray will be a minimum of 200 lb in the extended position.</p> <p>The vertical position of the tray within the compartment will be adjustable.</p> <p>The tray(s) will be located (1) RS2.</p>

0646980		Tray, Floor Mounted, Slide-Out, Standard Depth Compt, 500lb, 2.00" Sides, HDR	<p><b>STANDARD DEPTH SLIDE-OUT FLOOR MOUNTED TRAY</b></p> <p>There will be nine (9) floor mounted slide-out tray(s) with 2.00" sides provided RS1 full width (CTECH on forward portion), RS2, RS3 forward of partition (for tool board), RS3 rear of partition (25" wide to partition), RS4, RS5, LS1, LS2 rear partition (tool board), LS2 forward partition, . Each tray will be rated for up to 500 lb in the extended position. The tray(s) will be constructed of 0.19" aluminum. The finish will be painted spatter gray.</p> <p>Each tray will be mounted on two (2) under mount, roller bearing type slides. Each slide will be rated at 250 lb with a factor of safety of two (2).</p> <p>To ensure years of dependable service the slides will be coated with a finish that is tested to withstand a minimum of 1,000 hours of salt spray per ASTM B117.</p> <p>To ensure years of easy operation, the slide will require no more than a 50 lb force for push-in or pull-out movement when fully loaded after having been subjected to a 40 hour vibration (shaker) test under full load. The vibration drive file will have been generated from accelerometer data collected from a heavy truck chassis driven over rough gravel roads in an unloaded condition. Proof of compliance will be provided upon request.</p> <p>Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.</p>
0833870	SP	Tray, Floor Mtd, 1-Way, 2000 lb, w/o Sides, SlideMaster PC (IMS),Rear Compt,108"	<p><b>SLIDE-OUT FLOOR MOUNTED TRAY, 108.00" DEEP</b></p> <p>There will be one (1) floor mounted slide-out tray provided B1. The tray will be constructed of 0.19" aluminum. The tray will be approximately 108.00" deep, with no sides and be as wide as possible up to a maximum of 46.00" wide.</p> <p>The tray will be mounted on a SlideMaster, Model SM3-HD, a three (3) rail, single direction cargo slide with a silver powder coat finish. A spring loaded (IMS) rod release locking mechanism with automatic re-engagement will be provided. The slide will have lock stops in the closed, quarter, half, three quarter, and open position. The slide will allow for 100% extension and be rated for a maximum distributed load of 2,000 lbs.</p>
0645991		Tray, Floor Mounted, Slide-Out, w/ Side Slides,Std Depth, 500lb, 2.00" Sides,HDR	<p><b>SLIDE-OUT FLOOR MOUNTED TRAY</b></p> <p>There will be one (1) floor mounted slide-out tray(s) with 2.00" sides provided B1 below floor extension, . Each tray will be rated for up to 500lb in the extended position. The tray(s) will be constructed of .19" aluminum with welded corners. The finish will be painted spatter gray.</p> <p>Slides will be equipped with ball bearings for ease of operation and years of dependable service. The slides will be located on the sides of the tray so that the tray can be located as close to the compartment floor as possible.</p> <p>Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.</p>
0646005		Tray, Floor Mounted, Utility, Two Way Slide-Out, 500lb, 3" Sides, Full Trans	<p><b>TWO (2) WAY UTILITY SLIDE-OUT FLOOR MOUNTED TRAY</b></p> <p>There will be one (1) floor mounted utility slide-out tray(s) provided LS5/RS5 rear of partition. Each tray will be rated for up to 500lb in the extended position. The tray(s) will be constructed of .19" thick aluminum for the tray bottom and special aluminum extrusions for the tray sides, ends and tracks. The corners will be welded. The finish will be painted spatter gray.</p> <p>The tray will be 3.00" high x full depth of the transverse compartment x as wide as possible for the compartment.</p> <p>The tray will be supported with a minimum of six (6) ball bearing rollers. The tray will slide out two thirds (2/3) of its length to either side of the apparatus.</p> <p>Automatic locks will be provided for both the "in" and "out" positions. The trip mechanism for the locks will be located at the front of the tray for ease of use with a gloved hand.</p>
0899862	SP	Cabinet, Drawer Assembly, CTECH, Three Drawers, Up To 24" Wide, 23.00" Deep	<p><b>DRAWER ASSEMBLY</b></p> <p>A slide-out drawer assembly will be installed RS1 on foreword portion of the slide out tray, not to exceed the transverse compartment floor height.</p> <p>The clear dimensions of the first drawer starting at the top will be 2.00" with a face plate that is 3.00" high x 20.00" deep. The clear dimensions of the second drawer will be 2.75" with a face plate that is 3.00" high x 20.00" deep. The clear dimensions of the third drawer will be 2.75" with a face plate that is 3.00" high x 20.00" deep. Each drawer will be the same width and not exceed 24.00".</p> <p>The drawers will have a capacity of 250 pounds.</p> <p>The drawers will be mounted in a cabinet housing constructed of light gray powder coated aluminum with anodized aluminum frames. The housing will be 23.00" deep, and completely enclose the drawer.</p> <p>A full-length aluminum extruded rail will be provided at the top edge of each drawer. This rail will act as the latching mechanism as well as the handle for each drawer.</p> <p>There will be a total of one (1) provided.</p>

0725642		Cabinet, Drawer Assembly, CTECH, Three Drawers, Up To 36" Wide, 24" Deep	<b>DRAWER ASSEMBLY</b> A slide-out drawer assembly will be installed LS5 (fill entire width of lower area). The clear dimensions of the first drawer starting at the top will be 2.00" with a face plate that is 3.00" high x 21.00" deep. The clear dimensions of the second drawer will be 3.75" with a face plate that is 4.00" high x 21.00" deep. The clear dimensions of the third drawer will be 4.75" with a face plate that is 5.00" high x 21.00" deep. Each drawer will be the same width and not exceed 36.00". The drawers will have a capacity of 250 lb. The drawers will be mounted in a cabinet housing constructed of light gray powder coated aluminum with anodized aluminum frames. The housing will be 24.00" deep, and completely enclose the drawer. A full-length aluminum extruded rail will be provided at the top edge of each drawer. This rail will act as the latching mechanism as well as the handle for each drawer. There will be a total of two (2) provided.
0742411	SP	Toolboard, Alum, Adj, No Holes, Added to Standard Depth Slide-Out Tray	<b>TOOLBOARD ADDED TO STANDARD DEPTH SLIDE-OUT TRAY</b> An aluminum toolboard will be provided and mounted in a standard depth slide-out tray (tray not included). The toolboard will be constructed of 0.19" thick aluminum that is painted spatter gray to match compartment interior. A 1.00" x 1.00" aluminum tube frame will be welded to the edges of the board. The toolboard will span the full depth of the standard depth slide-out tray and will be as tall as possible for the specified mounting location. The toolboard will be mounted on aluminum tracks to allow for side to side adjustment within the tray. The total capacity rating of the toolboard will vary depending on the tray it is mounted in (capacity rating for the toolboard will match the capacity rating of the tray it is mounted in). A total of Three (3) toolboard(s) will be provided and mounted in the slide-out tray(s) located (1) forward tray in RS3, (1) Rear tray in RS3, (1) LS2 forward of partition, .
0603335		Toolboard, Alum, Adj, Added to Transverse Slide-Out Tray, No Holes	<b>TOOLBOARD ADDED TO TRANSVERSE SLIDE-OUT TRAY</b> An aluminum toolboard will be provided and mounted in a two (2)-way slide-out tray that spans the full depth of a transverse compartment (tray not included). The toolboard will be constructed of 0.19" thick aluminum that is painted spatter gray to match compartment interior. The toolboard will be provided with no holes and have a 1.00" x 1.00" aluminum tube frame welded around the edge for rigidity. The toolboard will span the full depth of the slide-out tray and will be as tall as possible for the specified mounting location. The toolboard will be mounted on aluminum tracks to allow for side to side adjustment within the tray. The total capacity rating of the toolboard will vary depending on the tray it is mounted in (capacity rating for the toolboard will match the capacity rating of the tray it is mounted in). A total of One (1) toolboard(s) will be provided and mounted in the slide-out tray(s) located LS5/RS5 on adjustable tray rear of partition, tool board 30" tall.
0726429		Partition, Vertical Compt, Transverse Compt, Aerials/HDRs	<b>PARTITION IN TRANSVERSE COMPARTMENT</b> One (1) partition will be bolted in (1) LS5/RS5 at rear of ASME bottles. Each partition will be the full vertical height of the compartment.
0726451		Partition, Vertical Compt	<b>VERTICAL COMPARTMENT PARTITION</b> Two (2) partitions will be bolted in LS2 and RS3. Each partition will be the full vertical height of the compartment.
0893396	SP	Partition, Vertical Compt, Special Depth	<b>VERTICAL COMPARTMENT PARTITION</b> One (1) partition will be bolted in B1 left side of plywood storage. Each partition will be full height of B1 compartment and as deep as B1 through LS2/RS2 compartment (110"?) deep. Each partition will be painted spatter gray.
0811046	SP	Partition, Vertical Compt, Transverse Compt, Notched, Aerials/HDRs	<b>PARTITION IN TRANSVERSE COMPARTMENT</b> One (1) partition will be bolted in (1) LS5/RS5 at rear of ASME bottles. Each partition will be the full vertical height of the compartment. The size and location of a special notch will be: around reel.
0554385		Box, Poly Tool, Special Size	<b>TOOL BOX</b> A tool box will be furnished. The tool box will be black in color. The size will be TBD. Construction will be of .50" polypropylene plastic with joints and seams nitrogen welded. A cut out carrying handle will be provided on each end. There will be eight (8) provided. It will be located TBD.
0669628		Release, Dual Lock/Single Oper, Bar Style, Slide-Out Floor Trays, Each	<b>SINGLE OPERATION BAR STYLE RELEASE</b> There will be eleven (11) bar style release/s provided and installed on the slide-out floor-mounted tray/s in all floor trays. Each assembly will be fabricated allowing the affected floor tray, with dual locks, to be accessed utilizing a single point.

0659383	Matting, Turtle Tile w/Ramp, Compartment Floors	<b>MATTING, COMPARTMENT FLOOR</b> Turtle Tile compartment matting will be provided in five (5) compartments on the compartment floor. The locations are, LS3 forward of fill station, LS4 on top of floor extension over frame, LS5 forward partition, LS3 forward of fill station, RS4 on top of floor extension over frame,. The Turtle Tile will be black and the leading edge of the matting will include the beveled edge. The beveled edge will be yellow.	<b>ATTACHMENT 1</b>
0544203	Matting, Turtle Tile, Hatch Compartment Floor, Each	<b>MATTING, FLOOR OF HATCH COMPARTMENT</b> There will be Turtle Tile compartment matting provided on the floor of the designated hatch compartment(s). The color of Turtle Tile matting will be black. The Turtle Tile matting will be provided on the floor of a total of five (5) hatch compartment(s) located all hatch compartments.	
0028026	Matting, Turtle Tile, Compartment Shelving Only	<b>MATTING, COMPARTMENT SHELVING</b> Turtle Tile compartment matting will be provided in 32 shelves. The locations are, All shelves and trays. The color of the Turtle Tile will be black.	
0024016	Rub Rail, Aluminum Extruded, Side & Rear of Body	<b>RUB RAIL</b> Bottom edge of the side and rear of the body compartments will be trimmed with a bright aluminum extruded rub rail. Trim will be 2.12" high with 1.38" flanges turned outward for rigidity. The rub rails will not be an integral part of the body construction, which allows replacement in the event of damage.	
0004024	Fender Crowns, Rear, S/S	<b>BODY FENDER CROWNS</b> Stainless steel fender crowns will be provided around the rear wheel openings. A rubber welting will be installed between the body and the crown to seal the seam and restrict moisture from entering. A dielectric barrier will be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.	
0519849	Not Required, Hose, Hard Suction	<b>HARD SUCTION HOSE</b> Hard suction hose will not be required.	
0619347	Handrail, Extra - 30-40" Long, Hansen Tubing, Knurled Aluminum LED Backlit	<b>ADDITIONAL HANDRAIL</b> Eleven (11) handrails, will be provided mounted (1) each as follows: behind LS1, Between LS1/LS2, LS3/LS4, LS4/LS5 and forward of LS5, behind RS1, Between RS1/RS2, RS3/RS4, RS4/RS5 and forward of RS5, (1) left side of B1 . The handrails will be knurled aluminum and illuminated. The end stanchions will be provided by Hansen. The handrail will be lit with a red LED light. The hand rail will be activated by the same means as the cab handrail light controls. Stanchions will support the handrail. Plastic gaskets will be used between end stanchions and any painted surfaces.	
0600656	Handrail, Extra - 21-30" Long, Hansen Tubing, Knurled Alum LED Backlit	<b>ADDITIONAL HANDRAIL</b> One (1) handrail, will be provided mounted (1) at top of right side hatch compartment to aid in accessing top of truck. The handrails will be Hansen LED backlit knurled aluminum. The handrails will be lit with a red LED light. The handrails will be activated by the same means as the cab handrail light controls. Chrome plated end stanchions will support the handrail. Plastic gaskets will be used between end stanchions and any painted surfaces. Drain holes will be provided in the bottom of all vertically mounted handrails.	
0829686	SP Compt, Storage, Fender Panel, Above Hitch Receiver, Tandem, TAK-4, HDR	<b>FENDER PANEL STORAGE COMPARTMENT BETWEEN TANDEM</b> An equipment storage compartment will be provided in the center of the body fender panel between the tandem rear axles and above the hitch receiver that is also located between the tandem rear axles (hitch receiver priced separately). The compartment will be 26.00" (660 mm) deep and approximately 23.13" (588 mm) wide at the top. The bottom of the compartment will taper along the sides and raise up in the center to accommodate the hitch receiver. A black Dura-Surf friction reducing material will be provided inside each compartment. A horizontally hinged lift up door with stay arm device door will be provided. The door will be large enough to cover both the storage compartment and the hitch receiver. The door will be constructed of stainless steel with a painted finish. The door will have a flush Southco C2 black powder coated latch. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal A total of two (2) compartment(s) will be provided. The storage compartment(s) will be located on the on the left side, one single compartment between the tandem rear wheels and on the right side, one single compartment between the tandem rear wheels side fender panel(s).	

0829684	SP	Compt, Storage Fender Panel, Tri, TAK-4, HDR	<p><b>ATTACHMENT 1</b></p> <p><b>STORAGE COMPARTMENT</b>  A total of two (2) fender panel storage compartment(s) will be provided in on the left side forward of the rear wheels and on the right side forward of the rear wheels. Each compartment will be a triangular shaped compartment that maximizes the available storage space in the corner of the fender panel.  A black Dura-Surf friction reducing material will be provided inside each compartment and each compartment will be furnished with a drain hole.  A stainless steel door will be provided. The door will have a painted finish. A flush Southco C2 black powder coated latch will be provided to contain the equipment. A dielectric barrier will be provided between the door hinge, hinge fasteners and the body sheet metal.</p>
0615804	SP	Storage Bin, Air Bottle(s), Angled Installation	<p><b>AIR BOTTLE STORAGE BIN</b>  A storage bin will be provided for storage of twelve (12) air bottles. The size of the air bottle(s) to be stored will be 7.5" square by 24" D. This storage bin will be installed under floor extension in LS4. Each bin will be angled to slope towards the back of the compartment to help provide secure storage. That sloped angle will change depending on the length of air bottle stored. Each storage bin will be formed out of aluminum and the flooring lined with Dura-surf.</p>
0044229		No Extension Ladder Req'd	
0595251		Ladder, 16' Duo-Safety 875-DR Roof, Hooks Both Ends	<p><b>ROOF LADDER</b>  There will be two (2) 16' aluminum, Duo-Safety, Series 875-DR roof ladder(s) provided. The ladder(s) will have hooks on both ends.</p>
0074248		Not Required, Folding Ladder	
0540716		Rack, Equipment Storage, Rear Compt	<p><b>LADDER/EQUIPMENT STORAGE</b>  The apparatus will be equipped with a ladder/long equipment storage rack constructed of two (2) storage trough. The troughs will be accessible from the rear compartment of the body. The storage trough(s) will be arranged allowing equipment to be removed independently without the removal of adjacent equipment.  The storage troughs will be configured 24' 2-section and 16' roof ladders high in B1 angled upward through body to minimize impact to storage in forward compartments.. The storage trough(s) will be mounted minimizing the forward compartment area required to accommodate the configuration.  If necessary, as determined by engineering, covers will be provided over trough(s) to prevent side compartment equipment from interfering with the removal of equipment stored in the trough(s), which extend into the forward side compartments. The covers will be finished to match the body compartment interior.  The storage configuration will be provided with a single, vertically hinged, aluminum treadplate door with D-ring latch to secure and prevent equipment from migrating to the rear of the apparatus while in motion.</p>
0540832		Trough, Ladder, Duo-Safety, Roof, 16' 875A	<p><b>ROOF LADDER STORAGE TROUGH</b>  There will be a total of one (1) roof ladder storage trough(s) provided inside the equipment storage rack. Each trough will be designed to hold one (1) 16' roof ladder manufactured by Duo-Safety Ladder Corporation.</p>
0540869		Trough, Storage, Custom Size, (2)	<p><b>STORAGE TROUGH</b>  A trough assembly will be provided for storing equipment in the rear of the apparatus. The storage trough clear dimensions will be 16' 4" long x 22.5" wide x 6" high (to store either Duo Safety 16' roof ladder or 24' 2 section ladder).  There will be one (1) storage trough(s) provided.</p>
0540875		Tube, Pike Pole, Storage	<p><b>PIKE POLE STORAGE</b>  There will be plastic storage tubes provided for five (5) pike poles located B1, top of compartment near ladder storage.  The size and brand of the pike poles stored will be 16' Duo Safety, (2) 10' Duo Safety fiberglass, (2) FHU 10' steel RH-10.  The pike poles will be stored allowing them to be removed without the removal of adjacent equipment.  To identify the length each pike pole, there will be a stainless steel faceplate with identification tags provided.</p>
0540878		Trough, Pike Pole, D-Handle, Storage	<p><b>PIKE POLE STORAGE</b>  There will be one (1) stainless steel U-shaped trough(s) used for the storage of pike poles, with D-handle style grip.  The size and brand of the pike poles stored will be 6' D handle trash hook.  The pike poles will be stored allowing them to be removed without the removal of adjacent equipment and located.</p>

0557253	Pike Pole, 10' Fire Hooks Unlimited, New York Roof Hook, Steel, RH-10, Pry End	<b>10' PIKE POLE</b> Two (2) pike poles Fire Hooks Unlimited, Model RH-10, 10' long roof hook with a steel handle will be provided and located B1.
0004349	Pike Pole, 10' DUO Safety, Fiberglass	<b>PIKE POLE, 10'</b> Two (2) pike poles 10' long DUO Safety with a fiberglass handle, will be provided and located B1.
0790949	Pike Pole, 16' DUO Safety, Fiberglass	<b>PIKE POLE, 16'</b> One (1) pike pole 16' long DUO Safety with a fiberglass handle, will be provided and located B1.
0638595	Trash Hook, 6' Fire Hooks Unlimited, Fiberglass, TRH-6, w/D Handle	<b>6' PIKE POLE</b> One (1) pike pole, 6' long trash hook(s), Fire Hooks Unlimited, Model TRH-6 with D-handle will be provided and located ladder storage compartment.
0663639	Not Required, Rear Step	
0518339	Not Required, Pump House, Rescue	
0092531	Not Required, Pump House Structure	
0796159	Not Required, Pump, Rescue	
0012216	No Seal/Packing Required	
0012690	Not Required, Trans, Pump	
0669703	Not Required, Pumping Mode	
0024484	Not Required, Pump Shift	
0046295	Transmission Lock-up, Not Req'd, NO PUMP	
0046296	Not Required, Auxiliary Cooling System, NO PUMP	
0046283	Not Required, Transfer Valve, NO PUMP	
0024513	Not Required, Intake Relief Valve	
0046403	No Relief Valve Req'd, No Pump	
0012336	No Pump Primer Req'd	
0012816	Not Required, Pump Manuals	
0090789	Not Required, Plumbing, No Pump	
0046371	Not Required, No Plumbing or Foam System	
0796254	No Main Inlet Required, Rescue No Pump	



0584002	Not Required, Cap, Main Pump Inlet, No Side Inlet Caps Required, No Pump
0089389	No Valves, (No Pump)
0074685	Not Required, Inlet Installation
0064700	Not Required, Inlet Control
0055600	Not Required, Auxiliary Inlet, Left Side
0029147	Not Required, Inlet, Right Side
0681723	No Bleeder Valve, No Pump
0681730	Not Required, Tank to Pump, No Pump
0074900	Not Required, Tank Fill
0089394	Not Required, Outlet Control, No Pump
0551181	Not Required, Outlet, Left Side, Rescue
0055095	Not Required, Elbow, Left Side Outlets, 2.50"
0092570	Not Required, Outlets, Left Side Additional
0021143	Not Required, Outlet, Right Side
0021134	Not Required, Elbow, Right Side Outlets, 2.50"
0092571	Not Required, Outlets, Right Side Additional
0089584	Not Required, Elbow, Right Side Outlets, Additional
0545326	Not Required, Outlet, Large Diameter, No Pump
0007308	Not Required, Elbow, Large Diameter Outlet
0092572	Not Required, Outlet, Front
0092574	Not Required, Outlet, Rear, Additional
0728255	Not Required, Caps/Plugs for 1.00" to 3.00" Discharges/Inlets
0089391	Valve, Bleeder - None Req'd, (No Pump)

0029106	Not Required, Deluge Outlet
0029302	No Monitor Requested
0029304	No Nozzle Req'd
0029107	No Deluge Mount
0723726	Speedlay Module Not Required
0722432	Hose Restraint Not Required, No Speedlay Module
0723395	Speedlays, Not Required
0723394	Speedlays, Not Required
0519936	Not Required, 1.50" Crosslays, Rescue
0029260	Not Required, Speedlays
0750536	Hose Restr, Spdly, Not Required, No Spdly
0046372	Not Required, Foam System, Pump, or Plumbing
0012126	Not Required, CAF Compressor
0552517	Not Required, Refill, Foam Tank
0042573	Not Required, Foam System Demonstration
0045465	Not Required, Foam Tanks
0091110	Not Required, Foam Tank Drain
0091079	Not Required, Foam Tank #2
0091112	Not Required, Foam Tank #2 Drain
0738072	Approval Dwg, Pump Panel(s), Not Required
0000261	Not Required, Pump Panel Layout
0030701	Not Required, Material, Pump Panels, No Panel
0046495	Not Required, Pump Access, No Pump

0634458	Not Required, No Chassis Engine Gauges @ Pump Panel	
0046400	Throttle, Engine, Not Required, No Pump/Skid Pump	
0892618	Not Required, Indicator Light, Pump Panel, No Pump or Skid Pump	
0046378	Not Required, Gauges, Vac/Pressure, No Pump	
0046375	Not Required, Gauges, No Pump	
0006774	Not Required, Foam Level Gauge	
0046280	Not Required, Light Shield, No Pump	
0606694	Air Horns, (2) Hadley, 6" Round, eTone, In Bumper	<b>AIR HORN SYSTEM</b> Two (2) Hadley®, eTone, chrome air horns will be recessed in the front bumper. The air horn system will be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve will be installed to prevent the loss of air in the brake system.
0606832	Location, Air Horns, Bumper, Left Side, Outside Frame, Same Side (Pos #6 & #7)	<b>Air Horn Location</b> The air horns will be located on the left side of the bumper, outside of the frame rail.
0757092	Control, Air Horn, Multi Select	<b>Air Horn Control</b> The air horn(s) will be activated by the following:
0757081	Control, Air Horn, Ft Sw, LS	Left side foot switch
0757084	Control, Air Horn, Horn Ring	Steering wheel horn ring with electric/air horn selector switch
0723391	Control, Air Horn, Chrome Push Button Sw, RS	Right side chrome push button switch
0606874	SP Siren, WIn 295HFSA7 200W, Dual Tone, Flush Mount, Sw Bat Powered	<b>ELECTRONIC SIREN</b> There will be a Whelen, Model 295HFSA7 electronic siren and remote head with a pre wired unidirectional microphone installed. The model to be used will be determined by the chassis and location of the siren remote head. The siren will contain a remote siren head and a siren amplifier with a dual system built in to the amplifier. This siren to be energized when the battery switch is on.
0510206	Location, Elect Siren, Recessed Overhead In Console	Electronic siren head will be recessed in the overhead console above the engine tunnel on the driver side.
0076156	Control, Elec Siren, Head Only	The electronic siren will be controlled on the siren head only. No horn button or foot switches will be provided.
0601306	Speaker, (1) WIn, SA315P, w/Pierce Polished Stainless Steel Grille, 100 watt	<b>SPEAKER</b> There will be one (1) Whelen®, Model SA315P, black nylon composite, 100-watt, speaker with through bumper mounting brackets and polished stainless steel grille provided. The speaker will be connected to the siren amplifier.
0601551	Location, Speaker, Frt Bumper, Recessed, Right Side, Outside Frame, Outbrd(Pos 1)	The speaker will be recessed in the right side of the front bumper, towards the outside.

0895310	Siren, Federal Q2B	<p><b>AUXILIARY MECHANICAL SIREN</b></p> <p>There will be a Federal Signal Model Q2B mechanical siren furnished and installed in the front of the apparatus.</p> <p>The Q2B will be chrome finish.</p> <p>The siren will have a 2-gauge cable connected to a power solenoid that is connected by a 2-gauge cable ran battery direct to the primary chassis batteries and will be labeled Q2B+ at the battery. The power solenoid will only be enabled when the emergency master switch is on.</p> <p>The siren will have a 2-gauge ground wire connected to the chassis battery stud. The cable will be labeled Q2B- at the battery.</p>
0665593	Siren, Mechanical, Recessed In Bumper, Special Recessing Depth, EF Grille	<p>The mechanical siren will be recessed behind the front bumper on the right side. The siren will be supported by the bumper framework. The Federal, Model MSFMT-EF, grille will be used on the front bumper in place of the standard Q2B mechanical siren grille.</p>
0748305	Control, Mech Siren, Multi Select	<p><b>MECHANICAL SIREN CONTROL</b></p> <p>The mechanical siren will be activated by the following:</p>
0748282	Control Mech Siren, Ft Sw LS	Left side foot switch.
0731979	Control Mech Siren, Push Button Sw, Chrome, RS	Right side chrome push button switch.
0726839	Sw, Siren Brake, Momentary Red Rocker, Location, Hardwire	A momentary red rocker switch will be included in the #9 location to activate the siren brake.
0736691	Sw, Siren Brake, Momentary Chrome Push Button, LS	A momentary chrome push button switch will be included in the left side dash panel to activate the siren brake.
0021826	Bracket, Wedge Style for Foot Switch, Each	<p><b>WEDGE STYLE FOOT SWITCH BRACKET</b></p> <p>There will be one (1) wedge style bracket provided at the 2 foot switches on drivers side on cab the floor. The bracket will be large enough to hold one (1) foot switch. The bracket will be angled approximately 30 degrees.</p>
0746353	Not Required, Warning Lights Intensity	
0604784	Lightbar, WIn, Freedom IV-Q, 81", RRRRWRsrROptRsrRWRRRR	<p><b>FRONT ZONE UPPER WARNING LIGHTS</b></p> <p>There will be one (1) 81.00" Whelen® Freedom IV™ lightbar mounted on the cab roof.</p> <p>The lightbar will include the following:</p> <ul style="list-style-type: none"> <li>One (1) red flashing LED module in the driver's side end position.</li> <li>One (1) red flashing LED module in the driver's side front corner position.</li> <li>One (1) red flashing LED module in the driver's side first front position.</li> <li>One (1) red flashing LED module in the driver's side second front position.</li> <li>One (1) white flashing LED module in the driver's side third front position.</li> <li>One (1) red flashing LED module in the driver's side fourth front position.</li> <li>One (1) red steady burning LED module in the driver's side fifth front position.</li> <li>One (1) red flashing LED module in the driver's side sixth front position.</li> <li>One (1) 795 LED traffic light controller set to national standard high priority in the center positions.</li> </ul> <ul style="list-style-type: none"> <li>One (1) red flashing LED module in the passenger's side sixth front position.</li> <li>One (1) red steady burning LED module in the passenger's side fifth front position.</li> <li>One (1) red flashing LED module in the passenger's side fourth front position.</li> <li>One (1) white flashing LED module in the passenger's side third front position.</li> <li>One (1) red flashing LED module in the passenger's side second front position.</li> <li>One (1) red flashing LED module in the passenger's side first front position.</li> <li>One (1) red flashing LED module in the passenger's side front corner position.</li> <li>One (1) red flashing LED module in the passenger's side end position.</li> </ul> <p>There will be clear lenses included on the lightbar.</p> <p>The following switches may be a installed in the cab on the switch panel to control the lightbar:</p> <ul style="list-style-type: none"> <li>a switch to control the flashing LED modules.</li> <li>the traffic light controller by a cab switch with emergency master control.</li> <li>no momentary switch to activate the traffic light controller.</li> </ul> <p>The white flashing LED modules and the traffic light controller will be disabled when the parking brake is applied.</p> <p>The eight (8) red flashing LED modules in the front positions may be load managed when the parking brake is applied.</p>
0615830	SP Opticom, Special Switching & Labeling	<p><b>SWITCHING FOR OPTICOM</b></p> <p>Switching for Opticom emitter will be provided so the Opticom can be turned on without the E-master switch being on. The parking brake will turn off Opticom when applied.</p>

0833297	SP Switch, Special Opticom, Labeling, Mux	<b>SWITCHING &amp; LABELS - OPTICOM</b> There be two (2) switch(es) located driver and officer side overhead switch panels per IP layout, that when momentarily depressed, will toggle the Opticom traffic control emitter on, and depressing the switch(es) a second time will turn the Opticom traffic control emitter off. The switch(es) will be appropriately labeled. Switching for the Opticom traffic control emitter will be provided so the Opticom traffic control emitter can be turned on without the Emergency Master switch being on. The parking brake will default the Opticom traffic control emitter to off when applied.
0540440	Light, Front Zone, WIn M6°C, LED, Clear Lens 2lts	<b>CAB FACE WARNING LIGHTS</b> There will be two (2) Whelen, Model M6°C, LED flashing warning lights with chrome flange provided on the front of the cab above the headlights. The driver's side front warning light to be red. The passenger's side front warning light to be red. Both lights will include a clear lens. There will be a switch located in the cab on the switch panel to control the lights.
0653937	Flasher, Headlight Alternating	<b>HEADLIGHT FLASHER</b> The high beam headlights will flash alternately between the left and right side. There will be a switch installed in the cab on the switch panel to control the high beam flash. This switch will be live when the battery switch and the emergency master switches are on. The flashing will automatically cancel when the hi-beam headlight switch is activated or when the parking brake is set.
0540692	Lights, Side Zone Lower, WIn M6°C LED, Clear Lens, 3pr, Ovr 25	<b>SIDE ZONE LOWER LIGHTING</b> There will be six (6) Whelen®, Model M6°C, flashing LED warning lights with chrome trim installed per the following: Two (2) lights, one (1) each side on the bumper extension. The side front lights to be red. Two (2) lights, one (1) each side above the front wheels. The side middle lights to be red. Two (2) lights, one (1) each side on the rear fender panel. The side rear lights to be red. The lights will include clear lenses. There will be a switch in the cab on the switch panel to control the lights.
0564655	Lights, Rear Zn Lwr, WIn M6°C LED, Clear Lens, For Tail Lt Housing	<b>REAR ZONE LOWER LIGHTING</b> There will be two (2) Whelen®, Model M6°C, LED flashing warning lights located at the rear of the apparatus. The driver's side rear light to be red The passenger's side rear light to be red Both lights will include a lens that is clear. There will be a switch located in the cab on the switch panel to control the lights.
0541155	Lights, Rear/Side Up Zone, WIn M9°C LED, Clear Lens 4lts	<b>WARNING LIGHTS (Rear and Side upper zones)</b> Four (4) Whelen, model M9°C LED flashing warning lights will be provided at the rear of the apparatus. The side rear upper light(s) on the driver's side to be red. The rear upper light(s) on the driver's side to be red. The rear upper light(s) on the passenger's side to be red. The side rear upper light(s) on the passenger's side to be red. These lights will include a lens that is clear. There will be a switch located in the cab on the switch panel to control the lights.
0006551	Not Required, Lights, Rear Upper Zone Blocking	
0791528	Light, Traffic Directing, WIn TAL65, 36.00" Long, TACTL5	<b>TRAFFIC DIRECTING LIGHT</b> There will be one (1) Whelen®, Model TAL65, 36.00" long x 2.87" high x 2.25" deep, amber LED traffic directing light installed at the rear of the apparatus. The Whelen, Model TACTL5, control head will be included with this installation. The controller will be energized when the battery switch is on. The auxiliary flash to be activated when the emergency master switch is on.
0529861	Location, TDL, Surface Mounted Over Rear Door with Treadplate Box	This traffic directing light will be surface mounted over the rear door, inside a treadplate box at the rear of the apparatus as high as practical.
0530282	Location, Traf Dir Lt Controller, Overhead Switch Panel DS Right End	The traffic directing light control head will be located in the driver side overhead switch panel in the right panel position.
0006646	Electrical System, 120/240VAC, General Design	<b>ELECTRICAL SYSTEM GENERAL DESIGN for ALTERNATING CURRENT</b> The following guidelines will apply to the 120/240 VAC system installation: <b>General</b> Any fixed line voltage power source producing alternating current (ac) line voltage will produce electric power at 60 cycles plus or minus 3 cycles. Except where superseded by the requirements of the current edition of applicable NFPA

standards, all components, equipment and installation procedures will conform to NFPA 70, National Electrical Code (herein referred to as the NEC). Line voltage electrical system equipment and materials included on the apparatus will be listed and installed in accordance with the manufacturer's instructions. All products will be used only in the manner for which they have been listed.

#### **Grounding**

Grounding will be in accordance with Section 250-6 "Portable and Vehicle Mounted Generators" of the NEC. Ungrounded systems will not be used. Only stranded or braided copper conductors will be used for grounding and bonding.

An equipment grounding means will be provided in accordance with Section 250-91 (Grounding Conductor Material) of the NEC.

The grounded current carrying conductor (neutral) will be insulated from the equipment grounding conductors and from the equipment enclosures and other grounded parts. The neutral conductor will be colored white or gray in accordance with Section 200-6 (Means of Identifying Grounding Conductors) of the NEC.

In addition to the bonding required for the low voltage return current, each body and driving or crew compartment enclosure will be bonded to the vehicle frame by a copper conductor. This conductor will have a minimum ampere rating of 115 percent of the nameplate current rating of the power source specification label as defined in Section 310-15 (amp capacities) of the NEC. A single conductor properly sized to meet the low voltage and line voltage requirements will be permitted to be used.

All power source system mechanical and electrical components will be sized to support the continuous duty nameplate rating of the power source.

#### **Operation**

Instructions that provide the operator with the essential power source operating instructions, including the power-up and power-down sequence, will be permanently attached to the apparatus at any point where such operations can take place.

Provisions will be made for quickly and easily placing the power source into operation. The control will be marked to indicate when it is correctly positioned for power source operation. Any control device used in the drive train will be equipped with a means to prevent the unintentional movement of the control device from its set position.

A power source specification label will be permanently attached to the apparatus near the operator's control station. The label will provide the operator with the following information:

Rated voltage(s) and type (ac or dc)

Phase

Rated frequency

Rated amperage

Continuous rated watts

Power source engine speed

Direct drive (PTO) and portable generator installations will comply with Article 445 (Generators) of the NEC.

#### **Overcurrent protection**

The conductors used in the power supply assembly between the output terminals of the power source and the main over current protection device will not exceed 144.00" (3658 mm) in length. For fixed power supplies, all conductors in the power supply assembly will be type THHW, THW, or use stranded conductors enclosed in nonmetallic liquid tight flexible conduit rated for a minimum of 194 degree Fahrenheit (90 degrees Celsius).

For portable power supplies, conductors located between the power source and the line side of the main overcurrent protection device will be type SO or type SEO with suffix WA flexible cord rated for 600-volts at 194 degrees Fahrenheit (90 degrees Celsius).

#### **Wiring Methods**

Fixed wiring systems will be limited to the following:

Metallic or nonmetallic liquid tight flexible conduit rated at not less than 194 degrees Fahrenheit (90 degrees Celsius)

or

Type SO or Type SEO cord with a WA suffix, rated at 600 volts at not less than 194 degrees Fahrenheit (90 degrees Celsius)

Electrical cord or conduit will not be attached to chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components, or low voltage wiring. In addition the wiring will be run as follows.

Separated by a minimum of 12.00" (305 mm), or properly shielded, from exhaust piping

Separated from fuel lines by a minimum of 6.00" (152 mm) distance

Electrical cord or conduit will be supported within 6.00" (152 mm) of any junction box and at a minimum of every 24.00" (610 mm) of continuous run. Supports will be made of nonmetallic materials or corrosion protected metal. All supports will be of a design that does not cut or abrade the conduit or cable and will be mechanically fastened to the vehicle.

#### **Wiring Identification**

All line voltage conductors located in the main panel board will be individually and permanently identified. The identification will reference the wiring schematic or indicate the final termination point. When prewiring for future power sources or devices, the unterminated ends will be labeled showing function and wire size.

#### **Wet Locations**

All wet location receptacle outlets and inlet devices, including those on hardwired remote power distribution boxes, will be of the grounding type provided with a wet location cover and installed in accordance with Section 210-7 "Receptacles and Cord Connections" of the NEC.

All receptacles located in a wet location will be not less than 24.00" (610 mm) from the ground.

Receptacles on off-road vehicles will be a minimum of 30.00" (762 mm) from the ground.

The face of any wet location receptacle will be installed in a plane from vertical to not more than 45 degrees off vertical. No receptacle will be installed in a face up position.

#### **Dry Locations**

All receptacles located in a dry location will be of the grounding type. Receptacles will be not less than 30.00" (762 mm) above the interior floor height.

All receptacles will be marked with the type of line voltage (120-volts or 240-volts) and the current rating in amps. If the receptacles are direct current, or other than single phase, they will be so marked.

#### **Listing**

All receptacles and electrical inlet devices will be listed to UL 498, Standard for Safety

Attachment Plugs and Receptacles, or other appropriate performance standards. Receptacles used for direct current voltages will be rated for the appropriate service.

## ATTACHMENT 1

### Electrical System Testing

The wiring and associated equipment will be tested by the apparatus manufacturer or the installer of the line voltage system.

The wiring and permanently connected devices and equipment will be subjected to a dielectric voltage withstand test of 900-volts for one (1) minute. The test will be conducted between live parts and the neutral conductor, and between live parts and the vehicle frame with any switches in the circuit(s) closed. This test will be conducted after all body work has been completed. Electrical polarity verification will be made of all permanently wired equipment and receptacles to determine that connections have been properly made.

### Operational Test per Current Edition NFPA Standard

The apparatus manufacturer will perform the following operation test and ensure that the power source and any devices that are attached to the line voltage electrical system are properly connected and in working order. The test will be witnessed and the results certified by an independent third-party certification organization.

The prime mover will be started from a cold start condition and the line voltage electrical system loaded to 100 percent of the nameplate rating.

The power source will be operated at 100 percent of its nameplate voltage for a minimum of two (2) hours unless the system meets category certification as defined in the current edition of applicable NFPA standards.

Where the line voltage power is derived from the vehicle's low voltage system, the minimum continuous electrical load as defined in the current edition of applicable NFPA standards will be applied to the low voltage electrical system during the operational test.

0516618

Generator, Harrison 10kW MCR  
Hydraulic, Hot Shift PTO

### GENERATOR

The apparatus will be equipped with a complete electrical power system. The generator will be a Harrison Model MCR Stealth 10.0 kW Hydraulic unit. The wiring and generator installation will conform to the present National Electrical Codes Standards of the National Fire Protection Association. The installation will be designed for continuous operation without overheating and undue stress on components.

#### Generator Performance

- Continuous Duty Rating: 10,000 watts
- Nominal Volts: 120/240
- Amperage: 80 @ 120 volts, 40 @ 240 volts
- Phase: Single
- Cycles: 60 hertz
- Engine Speed at Engagement: Idle
- RPM range: 900 to 3,000 (hydraulic pump)

The output of the generator will be controlled by an internal hydraulic system. An electrical instrument gauge panel will be provided for the operator to monitor and control all electrical operations and output.

The generator will be driven by a transmission power take off unit, through a hydraulic pump and motor.

The generator will include an electrical control inside the cab. The hydraulic engagement supply will be operational at any time (no interlocks).

An electric/hydraulic valve will supply hydraulic fluid to the clutch engagement unit provided on the chassis PTO drive.

#### Generator Instruments and Controls

To properly monitor the generator performance a digital meter panel will be furnished and mounted next to the circuit breaker panel. The meter will indicate the following items:

- Voltage
- Amperage for both lines
- Frequency
- Generator run hours
- Over current indication
- Over temperature indication
- "Power On" indication
- Two (2) fuse holders with two (2) amp fuses (for indicator light protection)

The meter and indicators will be installed near eye level in the compartment. Instruments will be flush mounted in an appropriate sized weatherproof electrical enclosure. All instruments used will be accurate within +/- two (2) percent.

#### Generator Wiring:

The system will be installed by highly qualified electrical technicians to assure the required level of safety and protection to the fire apparatus operators. The wiring, electrical fixtures and components will be to the highest industry quality standards available on the domestic market.

The equipment will be the type as designed for mobile type installations subject to vibration, moisture and severe continuous usage. The following electrical components will be the minimum acceptable quality standards for this apparatus:

#### Wiring:

All electrical wiring will be fine stranded copper type. The wire will be sized to the load and circuit breaker rating; ten (10) gauge on 30 amp circuits, 12 gauge on 20 amp circuits and 14 gauge on 15 amp circuits. The cable will be run in corner areas and extruded aluminum pathways built into the body for easy access.

#### Load Center:

The main load center will be a Cutler Hammer with circuit breakers rated to load demand.

#### Circuit Breakers:

Individual breakers will be provided for all on-line equipment to isolate a tripped breaker from affecting any other on-line equipment.

0610833

Location, Hydraulic Generator, In  
Recessed Area On Body Roof, HDR

### GENERATOR LOCATION

The generator will be installed inside the recessed area on the roof of the body. Modifications such as additional support structure and/or knockouts in the adjacent body wall(s) will be provided as necessary to support the weight and provide airflow for the generator.

# ATTACHMENT 1

0009440	Starting Sw, Truck Engine Powered Gen, Cab and Breaker Box	<b>GENERATOR START</b> A switch will be located on the cab instrument panel and at the breaker panel area to engage the generator.
0016757	Not Required, Remote Start, Generator	
0016740	Not Required, Fuel System	
0016767	Not Required, Oil Drain Extension, Generator	
0036738	Circuit Breaker Panel, Included With PTO Generator	<b>CIRCUIT BREAKER PANEL</b> The circuit breaker panel will be located high on the left wall of compartment LS5.
0016771	Not Required, Routing Exhaust, Generator	
0782807	Circuit Breaker Panel, Sub Feed, Cutler Hammer, Shoreline	<b>SUB FEED CIRCUIT BREAKER PANEL</b> There will be a shoreline powered sub feed circuit breaker panel installed in the LS5 left wall high next to Circuit breaker panel. A directory for each breaker will be provided adjacent to the circuit breaker panel. Identification of circuits will be done in a durable manner that provides years of service.
0629852	Light Twr, W-B Pow NS4.5-1380 SPC, 6-K20 120VAC Lts Cld 15'	<b>LIGHT TOWER</b> There will be one (1) Will-Burt, Powerlite Model NS4.5-1380 SPC light tower provided. There will be six (6) Fire Research Spectra K20, 240 watt 120 volt AC LED light heads included on this tower. The painted parts of the light tower and the light heads to be black. The tower will include the AC detector. This tower will be connected to the Do Not Move Truck Indicator in the cab.
0664472	Location, Light Tower, Crew Cab Roof	<b>Light Tower Location</b> The light tower will be installed on the crew cab roof.
0617738	Controller, Lt Twr, W-B, Wired Hndhld, E-STOP Pow, Pow X, Vrt	<b>Light Tower Controller</b> There will be one (1) wired handheld controller included.
0664791	Location, Light Tower Controller, Driver's Side Front Body Compartment	<b>Light Tower Controller Location</b> The light tower controller will be installed in the driver's side front body compartment.
0607099	Reel, Elect Cable, Hannay, 1600, (3) Wire (HDR/Rescue)	<b>ELECTRIC CORD REEL</b> There will be a total of two (2) cord reels, Hannay, three (3) conductor electric cord reel(s), capable of holding 12/3, 600-volt cable or 10/3, 600-volt cable located recessed up in hatch compartments above LS4 and RS4. The exterior finish of the reel(s) will be painted #269 gray from the reel manufacturer. The reel will be provided with an overcurrent protected 12-volt electric rewind motor and fuse protected, guarded switch labeled for its intended use. The switch will be installed at a height not to exceed 72.00" above the operators standing position. A label indicating current rating, current type, phase, voltage and total cable length will be provided in a readily visible location adjacent to the reel. A captive roller assembly to be provided to aid in the payout and loading of the reel. A ball stop will be provided to prevent the cord from being wound on the reel.
0006828	Cord, Electric, 10/3 Yellow, 3 Wire	<b>CORD</b> Provided for electric distribution will be two (2) lengths, one (1) for each reel, of 150 feet of yellow 10/3 electrical cord, weather resistant 105 degree Celsius to -50 degree Celsius, 600 volt jacketed SOOW cord. A Hubbell L5-20, 20 amp, 120 volt, twist lock connector body will be installed on the end of the cord.
0785372	Box, Junc, Akron, 3Wire, 2-15/20A 120V Dup SB, 2-15A 120V TL	<b>PORTABLE JUNCTION BOX</b> There will be one (1) Akron EJBX electric junction box(es) provided. There will be a cable strain relief and direct connection, no plug provided for each box. Each box will be provided with the following: two (2) 15/20 amp 120 volt AC duplex straight blade receptacles with flip up covers two (2) 15 amp 120 volt AC twist lock receptacles with flip up covers a 120 volt AC light inside the box



0789788	Holder, Junction Box, Smooth Aluminum, Match Compartment Finish	<b>JUNCTION BOX HOLDER</b> There will be a smooth aluminum junction box holder installed adjacent to the cord reel. The holder finish will match the compartment finish. A total of one (1) will be installed Ls5 with exact location at final inspection.	<b>ATTACHMENT 1</b>
0780309	Receptacle, 15/20A 120V 3-Pr 3-Wr SB Dup, 4 place, Interior Cab	<b>120 VOLT RECEPTACLE</b> There will be one (1), 4-place receptacle box(es) with four (4) 15/20 amp 120 volt AC three (3) wire straight blade receptacles with interior stainless steel wall plate(s) installed top of engine tunnel rear of map box so it can be used at workstation.. The NEMA configuration for the receptacles will be 5-15R. The receptacle(s) will be powered from the onboard generator to shoreline power transfer switch. There will be a label installed near the receptacle(s) that state the following: Line Voltage Current Rating (amps) Phase Frequency	
0779722	Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 1st, Interior Body	<b>120 VOLT RECEPTACLE</b> There will be five (5), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with an interior stainless steel wall plate, installed RS1 rear wall high & forward, RS2 rear wall high & forward, RS5 left wall high outboard, LS2 rear wall high & forward, LS5 by breaker panel. The NEMA configuration for the receptacle(s) will be 5-20R. The receptacle(s) will be powered from the onboard generator to shoreline power transfer switch. There will be a label installed near the receptacle(s) that state the following: Line Voltage Current Rating (amps) Phase Frequency	
0783678	Receptacle, 15/20A 120V 3-Pr 3-Wr, NEMA 5-20R SB Dup, 1st	<b>120 VOLT RECEPTACLE</b> There will be one (1), 15/20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) with exterior flip up cover(s), installed left rear under tail light assembly. The NEMA configuration for the receptacle(s) will be 5-20R. The receptacle(s) will be powered from the on board generator. There will be a label installed near the receptacle(s) that state the following: Line Voltage Current Rating (amps) Phase Frequency	
0510722	Breathing Air Cascade Sys. (6) 6000 ASME, Storage Cyl.	<b>CASCADE STORAGE VESSELS</b> The breathing air cascade system will meet the current edition of applicable NPFA standards for a compressed air system that is used to provide air for human respiration using self-contained breathing apparatus. It will be capable of operating in a range of ambient temperatures between 0 -125 degrees Fahrenheit with a relative humidity up to and including 100 percent. All flexible hose will be installed without excessive bending and to prevent cuts, abrasions, and excessive temperatures. The hose will also be installed in a manner that will allow it to be replaced without requiring removal of major vehicle components or vehicle mounted equipment. The breathing air system will be easy to maintain with an arrangement of components that allow for easy inspections, servicing, calibration, and adjustments without requiring the removal of components. All major components in the breathing air system, including accessories, will be clearly identified and labeled. Appropriate caution and warning labels will be affixed where necessary to allow the equipment to be safely operated and maintained. There will be two (2) complete manuals provided with the system. The manuals will provide documentation for the operation and maintenance of the system. The complete breathing air system will be tested for leaks and to ensure functionality prior to its delivery. The cascade system storage cylinders will consist of the following major components: Six (6) ASME Storage Cylinders Six (6) ASME Storage Cylinder Shutoff Valves Six (6) ASME Storage Cylinder Gauges Six (6) ASME Storage Cylinder Relief Devices One (1) ASME Storage Cylinder Mounting Rack Six (6) Inlet/Outlet Connections The cascade storage vessels will each be rated for 6,000 psi. Each vessel will hold 525 cubic feet of air at rated pressure. The total air volume for this system will be 3,105 cubic feet. These vessels will be designed and constructed to conform to the requirements of the American Society of Mechanical Engineers' Pressure Vessel Code per OSHA 29 CFR 1910.169 for transporting compressed air. Each cylinder will be equipped with a dedicated shutoff valve, a pressure gauge and an ASME relief valve installed immediately adjacent to it. Each cylinder will have a drain hose routed to a dedicated drain valve, which will be mounted in a remote location near the bottom of the truck body. The storage vessels will be installed in compartment (2) horizontal in left rear hatch, (2) horizontal in right rear hatch, (2) Vertical stacked in transverse area of LS5/RS5 above floor extensions, low behind area for circuit breaker panel. The bottles will be stored in a horizontal position.	

The air system will meet the requirements for a compressed air system used to provide air suitable for human respiration with self-contained breathing apparatus.

If a compressor or booster system is supplied it will be capable of operating in a range of ambient temperature between 32 degree Fahrenheit and 100 degrees Fahrenheit (0 Celsius and 43 degrees Celsius).

If a cascade system is supplied it will be capable of operating in a range of ambient temperatures between 0 degrees Fahrenheit and 125 degrees Fahrenheit (-18 degrees Celsius and 52 degrees Celsius)

The air system will be capable of withstanding storage temperatures between 0 degrees Fahrenheit and 125 degrees Fahrenheit (-18 degrees Celsius and 52 degrees Celsius) without damage.

The air system in general will be capable of being stored and operated in environments with relative humidity up to and including 100 percent.

All flexible hose will be installed in such a manner as to prevent cuts, abrasions, exposure to damage, excessive temperatures, damage from loose equipment and excessive bending. The hose will be installed in a manner that permits removal of hose without removal of major vehicle components or vehicle mounted equipment.

The air system design will provide for maintainability by ensuring that the arrangement of the components will allow easy inspections, servicing, calibration and adjustment without removing the components.

All major components in the air system, including accessories, will be clearly identified and labeled. Appropriate caution and warning labels will be affixed where necessary to allow the equipment to be safely operated and adjusted.

Two complete manuals will be provided that document the operation and maintenance of the system.

If a compressor is supplied, the temperature of the compressed air will not exceed 25 degrees Fahrenheit (14 degrees Celsius) above ambient temperatures when measured at the discharge nozzle of the compressor after cooler. Audible and visual alarms, automatic shutdown and prevention of automatic restart will occur if any of the following conditions exist: low oil level or low oil pressure, high discharge air temperature, more than 24 ppm of moisture in the purification system outlet and if the carbon monoxide level exceeds 10 ppm.

The purification system will be capable of producing the required air quality for a minimum of 50 hours with inlet at 80 degrees Fahrenheit (27 degrees Celsius) at saturation.

Low pressure breathing air supply from reels or in remote locations will be provided with a low air pressure audible alarm warning device when the air volume is at or below 20 percent. This will include upper and lower control stations on aerial devices.

The complete breathing air system will be tested prior to delivery.

The fire department will receive training with this breathing air system. A demonstration of the operation of the breathing air system will be provided at the factory.

This demonstration will include the following:

- Review of all safety items in the system
- Review of all component manuals
- A walk around review of all the components that make up the system
- A hands-on system demonstration of each functional item in the system, during which proper use of the system components will be described
- A demonstration of how to properly shutdown and maintain the system

0510673	Air Control Panel, SpaceSaver Integral, Breathing Air System	<p><b>BREATHING AIR SYSTEM CONTROL PANEL</b></p> <p><b>ATTACHMENT 1</b></p> <p>A control panel will be provided for the breathing air system, attached to the side of a SpaceSaver™ fill enclosure. The control panel will be made of 0.18" thick aluminum and will be provided with a painted, glare-resistant finish. The control panel will measure 9.75" x 42.75", and will be x 20.50" deep. The orientation of the control panel will match the orientation of the SpaceSaver fill enclosure it is attached to. If the control panel is attached to a vertical fill enclosure, the control panel will be orientated vertically. If the control panel is attached to a horizontal fill enclosure, the control panel will be orientated horizontally.</p> <p>A painted aluminum box will house and protect the components behind the control panel. The panel will pivot on its mounting fasteners, to allow for maintenance of components behind the panel.</p> <p>All gauges will be at least 2.50" in diameter, and they will be filled with glycerin. All valves will be a slow-operating screw type that will require minimal force, from three-fingered operation. A rope light will be fastened to the full vertical height of the control panel, to provide uniform illumination to all controls on the panel.</p> <p>All tubing that is behind the panel will be stainless steel, with the exception of the supply hoses from the air storage and the hose that runs to the SCBA fill. These tubes and hoses will have a 4:1 safety factor.</p> <p>A refill fitting will be supplied on the face of the air control panel, to allow the refilling of the system storage cylinders from an external source. With 6000 psi storage cylinders, a male CGA-677 fitting will be provided, and with 4500 and 5000 psi storage cylinders, a male CGA-347 fitting will be provided.</p> <p>A breathing air supplied gauge will be provided on the panel.</p> <p>There will be two (2) storage banks, each consisting of one (1) valve and one (1) gauge, provided on the control panel. If there are more cylinders than banks, two (2) cylinders will be connected to the first storage bank (or banks) as needed.</p> <p>The system will be regulated with one (1) high pressure regulated circuit and one (1) low pressure, high flow rate regulated circuit.</p> <p><b>Air Control Panel Regulators</b></p> <p><b>High Pressure Regulators</b></p> <p>Each high pressure regulated circuit provided on the panel will include the following components:</p> <ul style="list-style-type: none"> <li>One (1) 0-6000 psi regulator set for 4500 psi working pressure</li> <li>One (1) regulated pressure gauge.</li> </ul> <p><b>Low Pressure Regulators</b></p> <p>Each low pressure regulated circuit will be a low pressure, high flow rate circuit that consists of the following components:</p> <ul style="list-style-type: none"> <li>One (1) 0-400 psi regulator set for 300 psi working pressure</li> <li>One (1) regulated pressure gauge.</li> </ul> <p>A pressure relief valve will be provided. The pressure relief valve will be preset, at no more than ten percent above the working pressure. A warning label that specifies the appropriate pressure regulator settings and the pressure relief setting will be placed adjacent to the regulator.</p> <p>An SCBA fill valve to control the air flowing into the SCBA cylinders will be supplied on the air control panel. An SCBA fill gauge will be supplied on the air control panel, to view the pressure in the SCBA cylinders during filling. This valve and gauge will be used to manually vary the SCBA fill rates in accordance with the SCBA manufacturer's recommendations.</p> <p>The panel will be configured without a booster pump.</p> <p>The panel will be configured with a compressor connection with priority fill which prioritizes filling the SCBA connection before filling the cascade storage cylinders.</p>
0553620	Fill Encl, 2 Bottle,"SpaceSaver"Model 300H Horizontal, 13" H, RSP	<p><b>FILL ENCLOSURE</b></p> <p>The fill enclosure will be designed for mobile applications to fill <b>SCBA or SCUBA</b> cylinders. The enclosure will totally enclose the cylinder during the fill process. The enclosure will contain the cylinder and all fragments in the event of rupture during the fill process.</p> <p>Construction will be of .18" and .38" plate steel. The fill enclosure door will be constructed of .25" stainless steel. The cylinder holders will be lined with a material to protect each cylinder from abrasion.</p> <p>The fill enclosure will be designed to allow the filling of <b>two (2) SCBA or SCUBA</b> bottles either individually or simultaneously. Access to the enclosure for loading the cylinder will be through a manually operated horizontally sliding door. The door will be provided with a D-ring latch.</p> <p>Automatic safety interlocks will prevent cylinder filling until the door is completely closed. Two (2) fill hoses with SCBA or SCUBA adapters will be provided within the enclosure.</p> <p>If a cylinder should rupture, rapidly expanding air will be vented through an opening in the bottom of the enclosure and out through the compartment floor. A break away rubber seal will be provided to seal the compartment floor.</p> <p>To ensure the integrity of the fill enclosure, bidders will provide on request, an independent certification that a production unit has successfully withstood an SCBA cylinder explosion as per NFPA.</p> <p>The fill enclosure will be a SpaceSaver model 300H, 13.00" high x 42.50" wide x 25.00" deep and weighs 400 pounds.</p> <p>A total of one (1) will be provided LS3.</p>
0519934	Not Required, Brand, Hydraulic Tool System	
0649753	Not Required, PTO Driven Hydraulic Tool System	

0664520	Tie Down, Rope, Chrome, 9000lb Rated, Part Only	<b>TIE OFF MOUNT</b> A chrome plated tie off mount rated at a 9,000lb straight line pull will be provided for use with any equally rated 2.00" receiver tube on the vehicle. The mount will be secured to the receiver with a hitch pin, allowing it to be used in multiple locations. A total of two (2) will be provided for the receiver tubes located receiver tubes on each side of body.
0007150	Bag of Nuts and Bolts	<b>LOOSE EQUIPMENT</b> The following equipment will be furnished with the completed unit: One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit.
0816517	NFPA Required Loose Equipment, Special Services, NFPA/ULC 2024,Prov by Fire Dept	<b>NFPA LOOSE EQUIPMENT</b> <b>NFPA Required Loose Equipment Provided by Fire Department</b> The following loose equipment as outlined in NFPA 1900, 2024 edition, table 8.1 and CAN/ULC S515:2024 edition, section 5.2 will be provided by the fire department: One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 107, <i>American National Standard for High-Visibility Safety Apparel and Accessories</i> , and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front. Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (152 mm) from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band. Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities. Four (4) ladder belts meeting the requirements of NFPA 2500. <b>NFPA Loose Equipment That Should be Considered</b> The following loose equipment as outlined in NFPA 1900, 2024 edition, appendix table A.8.4 (a) and CAN/ULC S515:2024 edition, section 5.2 should be considered: Two (2) SCBA apparatus Two (2) SCBA spare cylinders One (1) first aid kit One (1) automatic external defibrillator (AED)
0796255	Not Required, Soft Suction, Rescue No Pump	
0816939	Extinguisher, Dry Chemical, NFPA 2024, Provided by Fire Department	<b>DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</b> The extinguisher is not on the apparatus as manufactured. The fire department will provide and mount the extinguisher.
0816937	Extinguisher, 2.5 Gal. Pressurized Water, NFPA/ULC 2024, Provided by Fire Dept	<b>WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT</b> The extinguisher is not on the apparatus as manufactured. The fire department will provide and mount the extinguisher.

0741569	Paint Process / Environmental Requirements, Appleton	<p><b>PAINT PROCESS</b></p> <p>The exterior custom cab and body painting procedure will consist of a seven (7) step finishing process as follows:</p> <p><u>Manual Surface Preparation</u> - All exposed metal surfaces on the custom cab and body will be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces will be removed and sanded to a smooth finish. Exterior seams will be sealed before painting. Exterior surfaces that will not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate.</p> <p><u>Chemical Cleaning and Pretreatment</u> - All surfaces will be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces will be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces will be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion.</p> <p><u>Surfacer Primer</u> - The Surfacer Primer will be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded.</p> <p><u>Finish Sanding</u> - The Surfacer Primer will be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat.</p> <p><u>Sealer Primer</u> - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated.</p> <p><u>Basecoat Paint</u> - Two coats of a high performance, two component high solids polyurethane basecoat will be applied. The Basecoat will be applied to a thickness that will achieve the proper color match. The Basecoat will be used in conjunction with a urethane clear coat to provide protection from the environment.</p> <p><u>Clear Coat</u> - Two (2) coats of Clear Coat will be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors will be Clear Coated to match the body. Paint warranty for the roll-up doors will be provided by the roll-up door manufacturer.</p> <p>After the cab and body are painted, the color will be verified to make sure that it matches the color standard. Electronic color measuring equipment will be used to compare the color sample to the color standard entered into the computer. Color specifications will be used to determine the color match. A Delta E reading will be used to determine a good color match within each family color.</p> <p>All removable items such as brackets, compartment doors, door hinges, and trim will be removed and painted separately if required, to ensure paint behind all mounted items. Body assemblies that cannot be finish painted after assembly will be finish painted before assembly.</p> <p>The paint finish quality levels for critical areas of the apparatus (cab front and sides, body sides and doors, and boom lettering panels) are to meet or exceed Cadillac/General Motors GMW15777 global paint requirements. Orange peel levels are to meet or exceed the #6 A.C.T. standard in critical areas. The manufacture's written paint standards will be available upon request.</p> <p><b>Environmental Impact</b></p> <p>Contractor will meet or exceed all current state regulations concerning paint operations. Pollution control will include measures to protect the atmosphere, water and soil. Controls will include the following conditions:</p> <p>Topcoats and primers will be chrome and lead free.</p> <p>Metal treatment chemicals will be chrome free. The wastewater generated in the metal treatment process will be treated on-site to remove any other heavy metals.</p> <p>Particulate emission collection from sanding operations will have a 99.99 percent efficiency factor.</p> <p>Particulate emissions from painting operations will be collected by a dry filter or water wash process. If the dry filter is used, it will have an efficiency rating of 98 percent. Water wash systems will be 99.97 percent efficient.</p> <p>Water from water wash booths will be reused. Solids will be removed on a continual basis to keep the water clean.</p> <p>Paint wastes are disposed of in an environmentally safe manner.</p> <p>Empty metal paint containers will be recycled to recover the metal.</p> <p>Solvents used in clean-up operations will be recycled on-site or sent off-site for distillation and returned for reuse.</p> <p>Additionally, the finished apparatus will not be manufactured with or contain products that have ozone depleting substances. Contractor will, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with his state EPA rules and regulations.</p>
0709846	Paint, Two-Tone Color, Velocity/Impel	<p><b>CAB TWO-TONE PAINT</b></p> <p>The cab will be painted two-tone, with the upper section painted #479 charcoal metallic and the lower section painted #972. There will be a special two-tone cab paint break at the roof line provided.</p> <p>There will be no cab shield provided.</p>
0709845	Paint, Single Color, Body	<p><b>BODY PAINT</b></p> <p>The body will be painted to match the lower section of the cab.</p>

0646901	Paint Chassis Frame Assy, With Liner, E-Coat, Standard	<b>PAINT CHASSIS FRAME ASSEMBLY</b> The chassis frame assembly will be finished with a single system black top coat before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc. Components that are included with the chassis frame assembly that will be painted (unless otherwise stated in a secondary option) are: Frame rails Frame liners Cross members Axles Suspensions Steering gear Battery boxes Bumper extension weldment Frame extensions Body mounting angles Rear Body support substructure (front and rear) Pump house substructure Steel fuel tank Castings Individual piece parts used in chassis and body assembly Components treated with epoxy E-coat protection prior to paint: Two (2) C-channel frame rails Two (2) frame liners The E-coat process will meet the technical properties shown.	<b>ATTACHMENT 1</b>
0693797	No Paint Required, Aluminum Front Wheels		
0806169	Paint, Rear Wheels, Tandem Axle, TAK-4 T3	<b>REAR WHEELS PAINT</b> All wheel surfaces, inside and outside, will be provided with paint red #972.	
0733739	Paint, Axle Hubs	<b>AXLE HUB PAINT</b> All axle hubs will be painted to match lower job color.	
0581434	Transit Coating, Carwell, Corrosion Protection, Including Underside	<b>TRANSIT COATING</b> All non-painted metal surfaces on the exterior of the vehicle will be sprayed with a corrosion protective coating provided by Carwell. The coating can be removed with soap and water. The coating is made of a linseed oil base and is biodegradable. The underside non-painted metal surfaces will also be coated with a corrosion protective coating.	
0007230	Compartment, Painted, Spatter Gray	<b>COMPARTMENT INTERIOR PAINT</b> The interior of all compartments will be painted with a gray spatter finish for ease of cleaning and to make it easier to touch up scratches and nicks.	
0790459	SP Reflective Band, 1" Vinyl-6" Refl-1" Vinyl, w/Borders, 0.75" Gaps (Boaz, AL)	<b>REFLECTIVE STRIPES</b> Three (3) stripes will be provided across the front of the vehicle and along the sides of the body. The band will consist of a 1.00" charcoal metallic vinyl stripe at the top with a 1/4" black border top and bottom, then a 6.00" reflective black stripe, and a 1.00" charcoal metallic vinyl stripe at the bottom with a 1/4" black border top and bottom. There will be a 0.75" void between the stripes.	
0077356	Reflective, Cab Face, Below the S/S Trim Band	<b>REFLECTIVE STRIPE ON CAB FACE</b> The reflective band provided on the cab face will be located below the stainless steel trim band and above the front bumper.	
0822169	Stripe, Chevron, Rear, Reflective and Painted Rear, NFPA/ULC 2024, Rescue	<b>REAR CHEVRON STRIPING</b> There will be chevron striping located on the rear-facing vertical surface of the apparatus. Covered surfaces will include the rear wall and aluminum doors. Rear compartment doors and stainless steel access doors will not be covered. The colors will be black reflective and the other color will be lower body color . Each stripe will be 6.00" in width.	
0567374	Stripe, Black Outline each Chevron Stripe @ Rear (Not Warranted)	<b>REFLECTIVE STRIPE OUTLINE</b> A black vinyl outline will be provided for each chevron stripe at the rear of the truck. There will be no warranty provided for this material.	

0823821	SP	Stripe, Vinyl, Non-Reflective Chevron, 1 Color and Paint, Rear Compt	<b>CHEVRON STRIPING ON THE FRONT BUMPER</b> There will be alternating chevron striping located on the rear compartment. The striping will consist of the following colors: The first color will be non-reflective vinyl per the departments specifications. The second color will be painted job color. The size of the striping will be 6.00".
0668703		Stripe, Reflective, Cab and Crew Cab Doors Interior, Match Exterior of Apparatus	<b>CAB DOOR REFLECTIVE STRIPE</b> Reflective striping will be provided across the interior of each cab door. The striping will match what has been provided on the exterior of the unit. This stripe will meet the current edition of applicable NFPA standards.
0679810		Stripe, Printed Effect Gold Leaf, Two-Tone Paint Break with Shield, IPO Chrome	<b>CAB STRIPE</b> There will be a printed effect gold leaf stripe provided on both sides of the cab in place of the chrome molding and on the cab face with shield.
0027372		Lettering Specifications, (GOLD STAR Process)	<b>LETTERING</b> The lettering will be totally encapsulated between two (2) layers of clear vinyl.
0686434		Lettering, Gold Leaf, 3.00", (21-40)	<b>LETTERING</b> Twenty-one (21) to forty (40) genuine gold leaf lettering, 3.00" high, with outline and shade will be provided.
0685542		Lettering, Printed Effect Gold Leaf, 8.00", (21-40)	<b>LETTERING</b> Twenty-one (21) to forty (40) printed effect gold leaf lettering, 8.00" high, with outline and shade will be provided.
0685554		Lettering, Printed Effect Gold Leaf, 6.00", Each	<b>LETTERING</b> There will be printed effect gold leaf lettering, 6.00" high, with outline and shade provided. There will be 12 letters provided.
0685562		Lettering, Printed Effect Gold Leaf, 5.00", Each	<b>LETTERING</b> There will be printed effect gold leaf lettering, 5.00" high, with outline and shade provided. There will be 18 letters provided.
0685589		Lettering, Printed Effect Gold Leaf, 4.00", (21-40)	<b>LETTERING</b> Twenty-one (21) to forty (40) printed effect gold leaf lettering, 4.00" high, with outline and shade will be provided.
0655896		Sign Kit, Painted, Holder and Insert, Each	<b>SIGN KIT FOR LETTERING/NUMERALS</b> four (4) painted stainless steel plate(s) and holder(s) will be provided for department lettering. They will be mounted DS/PS CC Door, front and rear and 16"W X 8.5"H in size.
0530793		Emblem, American Flag, Flat (Not Moving), Pair, Mirror Images	<b>EMBLEMS</b> There will be one (1) pair of American flag emblems, 12.00" high, installed crew cab. The flag will be flat (not moving) and made out of vinyl material. The pair will be mirror images of each other.
0684220		Emblem, Maltese Cross, Printed Effect Gold Leaf, 15"-17", Pair	<b>MALTESE CROSS INSTALLATION</b> There will be one (1) pair of maltese crosses, comprised of printed effect gold leaf material, provided and installed cab doors.
0772003		Manual, Fire Apparatus Parts, USB Flash Drive, Custom	<b>FIRE APPARATUS PARTS MANUAL</b> There will be one (1) custom parts manual(s) in USB flash drive format for the complete fire apparatus provided. The manual(s) will contain the following: Job number Part numbers with full descriptions Table of contents Parts section sorted in functional groups reflecting a major system, component, or assembly Parts section sorted in alphabetical order Instructions on how to locate parts Each manual will be specifically written for the chassis and body model being purchased. It will not be a generic manual for a multitude of different chassis and bodies. <b>Service Parts Internet Site</b> The service parts information included in these manuals are also available on the Pierce website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.

# ATTACHMENT 1

0772037	Manual, Chassis Service, USB Flash Drive, Custom	<b>CHASSIS SERVICE MANUALS</b> There will be one (1) chassis service manuals on USB flash drives containing parts and service information on major components provided with the completed unit. The manual will contain the following sections: Job number Table of contents Troubleshooting Front Axle/Suspension Brakes Engine Tires Wheels Cab Electrical, DC Air Systems Plumbing Appendix The manual will be specifically written for the chassis model being purchased. It will not be a generic manual for a multitude of different chassis and bodies.
0773381	Manual, Chassis Operation, (1) USB Flash Drive, Custom	<b>CHASSIS OPERATION MANUAL</b> The chassis operation manual will be provided on one (1) USB flash drive.
0030008	Warranty, Basic, 1 Year, Apparatus, WA0008	<b>ONE (1) YEAR MATERIAL AND WORKMANSHIP</b> A Pierce basic apparatus limited warranty certificate, WA0008, is included with this proposal.
0611136	Warranty, Chassis, 3 Year, Velocity/Impel, WA0284	<b>THREE (3) YEAR MATERIAL AND WORKMANSHIP</b> The Pierce custom chassis limited warranty certificate, WA0284, is included with this proposal.
0735523	Warranty, Engine, Paccar MX13, 5 Year, WA0386	<b>ENGINE WARRANTY</b> A Paccar five (5) year <b>limited engine warranty will be provided. A limited warranty certificate is included with this proposal.</b>
0684953	Warranty, Steering Gear, Sheppard M110, 3 Year WA0201	<b>STEERING GEAR WARRANTY</b> A Sheppard <b>three (3) year</b> limited steering gear warranty will be provided. A copy of the warranty certificate will be submitted with this proposal.
0595767	Warranty, Frame, 50 Year, Velocity/Impel, WA0038	<b>FIFTY (50) YEAR STRUCTURAL INTEGRITY</b> The Pierce custom chassis frame and crossmembers limited warranty certificate, WA0038, is included with this proposal.
0595698	Warranty, Axle, 3 Year, TAK-4, WA0050	<b>FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</b> The Pierce TAK-4 suspension limited warranty certificate, WA0050, is included with this proposal.
0644874	Warranty, Axle, 3 Year, TAK-4, IRS, WA0249	<b>REAR AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</b> Pierce TAK-4® independent rear suspension will be provided with a three (3) year material and workmanship limited warranty. The manufacturer's warranty will provide that the independent rear suspension be free from any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service.
0652758	Warranty, ABS Brake System, 3 Year, Meritor Wabco, WA0232	<b>ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY</b> A Meritor Wabco™ ABS brake system limited warranty certificate, WA0232, is included with this proposal.
0019914	Warranty, Structure, 10 Year, Custom Cab, WA0012	<b>TEN (10) YEAR STRUCTURAL INTEGRITY</b> The Pierce custom cab limited warranty certificate, WA0012, is included with this proposal.
0744240	Warranty, Paint, 10 Year, Cab, Pro-Rate, WA0055	<b>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</b> A Pierce cab limited pro-rated paint warranty certificate, WA0055, is included with this proposal.
0524627	Warranty, Electronics, 5 Year, MUX, WA0014	<b>FIVE (5) YEAR MATERIAL AND WORKMANSHIP</b> The Pierce Command Zone electronics limited warranty certificate, WA0014, is included with this proposal.



0695416	Warranty, Pierce Camera System, WA0188	<b>CAMERA SYSTEM WARRANTY</b> A Pierce fifty four (54) month <b>warranty will be provided for the camera system.</b>
0708760	Warranty, Not Applicable, LED Strip Lights	<b>COMPARTMENT LIGHT WARRANTY</b> The compartment lights will not offer an extended warranty.
0046369	Warranty, 5-year EVS Transmission, Standard Custom, WA0187	<b>TRANSMISSION WARRANTY</b> The transmission will have a <b>five (5) year/unlimited mileage</b> warranty covering 100 percent parts and labor. The warranty will be provided by Allison Transmission. Note: The transmission cooler is not covered under any extended warranty you may be getting on your Allison Transmission. Please review your Allison Transmission warranty for coverage limitations.
0685945	Warranty, Transmission Cooler, WA0216	<b>TRANSMISSION COOLER WARRANTY</b> The transmission cooler will carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty will also be in effect for the first three (3) years of the warranty coverage and will not exceed \$10,000 per occurrence. A copy of the warranty certificate will be included with this proposal.
0033401	Not Required, Tank Warranty	
0596024	Warranty, Structure, 15 Year, HDR, WA0010	<b>FIFTEEN (15) YEAR STRUCTURAL INTEGRITY</b> The Pierce heavy duty rescue apparatus body limited warranty certificate, WA0010, is included with this proposal.
0690936	Warranty, Roll up Doors, Not Required	
0012599	Warranty, Pump, Not Required	
0046370	Not Required, Warranty, No Plumbing	
0641372	Warranty, Foam System, Not Available	
0725636	Warranty, Harrison Generator, 2 Year	<b>TWO (2) YEAR GENERATOR MATERIAL AND WORKMANSHIP WARRANTY</b> A Harrison Hydra-Gen generator two (2) year <b>limited warranty will be provided.</b>
0595820	Warranty, Paint, 10 Year, Body, Pro-Rate, WA0057	<b>TEN (10) YEAR PRO-RATED PAINT AND CORROSION</b> A Pierce body limited pro-rated paint warranty certificate, WA0057, is included with this proposal.
0595421	Warranty, Goldstar, 3 Year, Apparatus, WA0018	<b>THREE (3) YEAR MATERIAL AND WORKMANSHIP</b> The Pierce Goldstar gold leaf lamination limited warranty limited warranty certificate, WA0018, is included with this proposal.
0819254	Certification, Vehicle Stability, CD0196	<b>VEHICLE STABILITY CERTIFICATION</b> The fire apparatus manufacturer will provide a certification stating the apparatus complies with NFPA 1900, current edition, section 7.14, Vehicle Stability. The certification is included with this proposal.
0808574	Certification, Engine Installation, VEL, Paccar MX, 2027	<b>ENGINE INSTALLATION CERTIFICATION</b> The fire apparatus manufacturer will provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification will be provided at the time of delivery.
0686786	Certification, Power Steering, CD0098	<b>POWER STEERING CERTIFICATION</b> The fire apparatus manufacturer will provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification is included with this proposal.

0892701	Certification, Cab Integrity, Impel/Velosity FR, CD0190	<p><b>CAB INTEGRITY CERTIFICATION</b></p> <p>The fire apparatus manufacturer will provide a cab crash test certification with this proposal. The certification will state that a specimen representing the substantial structural configuration of the cab has been tested and certified by an independent third party test facility. Testing events will be documented with photographs, real-time and high-speed video, vehicle accelerometers, cart accelerometers, and a laser speed trap. The fire apparatus manufacturer will provide a state licensed professional engineer to witness and certify all testing events. Testing will meet or exceed the requirements below:</p> <p>SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks. European Occupant Protection Standard ECE Regulation No.29. SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks.</p> <p><b>Side Impact</b></p> <p>The cab will be subjected to dynamic preload where a 14,320-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of force. This test is part of the SAE J2422 test procedure and more closely represents the forces a cab will see in a rollover incident.</p> <p><b>Roof Crush</b></p> <p>The same cab will be subjected to a roof crush force of 22,050 lb. This value meets the ECE 29 criteria and is equivalent to the front axle rating up to a maximum of ten (10) metric tons.</p> <p><b>Additional Roof Crush</b></p> <p>The same cab will be subjected to a roof crush force of 100,000 lb. (Four and a half times the load criteria of ECE 29)</p> <p><b>Frontal Impact</b></p> <p>The same cab will withstand a frontal impact of 32,600 ft-lb of force using a moving barrier in accordance with SAE J2420.</p> <p><b>Additional Frontal Impact</b></p> <p>The same cab will withstand a frontal impact of 65,200 ft-lb of force using a moving barrier. (Twice the force required by SAE J2420)</p> <p>The same cab will withstand all tests without any measurable intrusion into the survival space of the occupant area.</p>
0548950	Certification, Cab Door Durability, Velocity/Impel, CD0001	<p><b>CAB DOOR DURABILITY CERTIFICATION</b></p> <p>Robust cab doors help protect occupants. Cab doors will survive a 200,000-cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder will certify that the sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear.</p>
0548967	Certification, Windshield Wiper Durability, Impel/Velosity, CD0005	<p><b>WINDSHIELD WIPER DURABILITY CERTIFICATION</b></p> <p>Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers will survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 <i>Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles</i>. The bidder will certify that the wiper system design has been tested and that the wiper system has met these criteria.</p>
0667411	Certification, Electric Window Durability, Velocity/Impel FR, CD0004	<p><b>ELECTRIC WINDOW DURABILITY CERTIFICATION</b></p> <p>Cab window roll-up systems can cause maintenance problems if not designed for long service life. The window regulator design will complete 30,000 complete up-down cycles and still function normally when finished. The bidder will certify that sample doors and windows similar to those provided on the apparatus have been tested and have met these criteria without malfunction or significant component wear.</p>
0549273	Certification, Seat Belt Anchors and Mounting, Imp/Vel/Vel SLT, CD0018	<p><b>SEAT BELT ANCHOR STRENGTH</b></p> <p>Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design will withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder will certify that each anchor design was pull tested to the required force and met the appropriate criteria.</p> <p><b>SEAT MOUNTING STRENGTH</b></p> <p>Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design will be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder will certify that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.</p>

0735950	Certification, Cab HVAC System Perf, Vel/Imp FR, CD0166/CD0168/CD0176/CD0177	<b>PERFORMANCE CERTIFICATIONS</b> <b>Cab Air Conditioning</b> Good cab air conditioning temperature and air flow performance keeps occupants comfortable, reduces humidity, and provides a climate for recuperation while at the scene. The cab air conditioning system will cool the cab from a heat-soaked condition at 100 degrees Fahrenheit to an average of 78 degrees Fahrenheit in 30 minutes. The bidder will certify that a substantially similar cab has been tested and has met these criteria. <b>Cab Defroster</b> Visibility during inclement weather is essential to safe apparatus performance. The defroster system will clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure And Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. <i>The bidder will certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.</i> <b>Cab Auxiliary Heater</b> <i>Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. An auxiliary cab heater will warm the cab 77 degrees Fahrenheit from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder will certify, at time of delivery, that a substantially similar cab has been tested and has met these criteria.</i>	<b>ATTACHMENT 1</b>
0545073	Amp Draw Report, NFPA Current Edition	<b>AMP DRAW REPORT</b> The bidder will provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system. The manufacturer of the apparatus will provide the following: Documentation of the electrical system performance tests. A written load analysis, which will include the following: The nameplate rating of the alternator. The alternator rating under the conditions specified per: Current edition of applicable NFPA standards. The minimum continuous load of each component that is specified per: Current edition of applicable NFPA standards. Additional loads that, when added to the minimum continuous load, determine the total connected load. Each individual intermittent load. All of the above listed items will be provided by the bidder per the current edition of applicable NFPA standards.	
0002758	Amp Draw, NFPA/ULC Radio Allowance		
0799248	Appleton/Florida BTO		
0000031	HDR BODY		
0000012	PIERCE CHASSIS		
0735525	PACCAR MX13 ENGINE		
0046396	EVS 4000 Series TRANSMISSION		
0020037	NO PUMP		
0020013	NO WATER TANK		
0028047	NO FOAM SYSTEM		
0046282	Not Required, Control Panel, No Pump		
0020007	AKRON VALVES		
0020015	ABS SYSTEM		
0752883	HDR		



# Electrical Analysis

**ATTACHMENT 1** 8/6/2025

<b>Bid #:</b>	990	<b>Job #:</b>	
<b>Desc:</b>	Type 1 Velocity Rescue	<b>Sales Rep:</b>	Klockzien, Dave
<b>Customer:</b>	Manteca Fire Department	<b>Organization:</b>	Golden State Fire Apparatus, Inc
<b>Option:</b>	Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT	<b>Type:</b>	Multiplexed

Option	Description	Type*	Minimum Load	Intermittent Load	Total Connected
0001244	High Idle w/Electronic Engine, Custom		0.00	1.20	0.00
0002526	Light, Engine Compt, All Custom Chassis		0.00	1.60	0.00
0009429	Electric Power Only, Portable Winch		0.00	4.00	0.00
0032189	Mirrors, Ramco, 8000PCHR, Heated/Remote, w/Heated/Remote		0.00	0.00	8.00
0098841	Batteries, (6) Deka Grp 31, 1000 CCA each, Threaded Stud		0.00	3.00	0.00
0122466	Cab Lift, Elec/Hyd, w/Manual Override, Imp/Vel		0.00	180.00	0.00
0589905	Alarm, Back-up Warning, PRECO 1040		0.00	0.50	0.00
0607099	Reel, Elect Cable, Hannay, 1600, (3) Wire (HDR/Rescue)		0.00	72.00	0.00
0615830	Opticom, Special Switching & Labeling		0.00	0.00	0.08
0621041	Winch, Warn, Zeon 10, 10,000 lb. Portable Receiver Type, 80'		0.00	460.00	0.00
0629852	Light Twr, W-B Pow NS4.5-1380 SPC, 6-K20 120VAC Lts Cld 15'		0.00	5.00	0.00
0649826	Lights, Dome, ROM, Durolumen Dual Red/WhiteLED		0.00	3.50	0.00
0656743	Lights, Compt, Amdor, AY-9220 LED, Strip LED Additional,		0.00	0.00	1.76
0667426	Lights, Compt, Amdor, AY-9220-42, LED, 41.61", Additional		0.00	0.00	1.68
0667902	Controls, Electric Windows, All Cab Doors, Impel/Velocit FR		0.00	26.00	0.00
0708660	Wiring, Spare, 37.5 A 12V DC, Cust Install Radio, 30A Bat Dir,		0.00	0.00	37.50
0734079	Lights, Driving, Wln M4DWR, Recess In Bumper, Hdlt Sw & Sep		0.00	2.00	0.00
0735006	Intercom, David Clark, 4-Pos, 2-Radio, (D, O, RPTT), 2obC,		0.00	0.00	0.50
0735687	Engine Brake, Fully Integrated, Paccar MX13 Engine		0.00	0.42	0.00
0739629	Spotlight, Wln Arges, 2 Lights		0.00	0.00	2.20
0795742	Not Required, Walking Surface, Alt. Walking Surface Lights, HDR		0.00	0.00	0.00
0806466	Lights, Backup, Wln M62BU, LED, For Tail Lt Housing		0.00	3.20	0.00
0807484	Wiring, Spare, 3 A 12V DC 1st, Switch Cntrl		0.00	0.00	3.00
0814219	Vehicle Information Center, 7" Color Display, MUX,		0.00	0.00	1.20
0816158	Camera, Pierce, LS Mux, RS, LS, R, Cameras, AHD		0.00	1.20	0.00
0819994	Radio, Jensen, AM/FM/WB, Bluetooth		0.00	0.00	2.00
0821236	Wiring, Spare, 20 A 12V DC, 6 Ckt FB, Blue Sea 5025 Batt Dir 1st		0.00	0.00	20.00
0821263	Wiring, Spare, 20 A 12V DC, 12 Ckt FB, Blue Sea 5026 Batt Dir		0.00	0.00	20.00
0821337	ABS Wabco Brake System, Tandem Rear Axle, Tak-4, NFPA		0.00	6.00	0.00
0826636	Wiring, Spare, (1) 15A 12V DC, Multi Loc, Cab, B+, 1st,		0.00	0.00	15.00
0834416	USB, Cab, 4, 12V DC, Dual USB Termination, NFPA1900/ULC		0.00	0.00	10.00
0895310	Siren, Federal Q2B		0.00	100.00	0.00
0733239	Lights, HiViz FT-GESM* LED 3rd	Load Managed	0.00	0.00	20.82
0733336	Lights, HiViz FT-GESM* LED 2nd	Load Managed	0.00	0.00	20.82
0733343	Lights, HiViz FT-GESM* LED 1st	Load Managed	0.00	0.00	20.82
0736729	Lights, HiViz FT-GESM LED 2nd	Load Managed	0.00	0.00	10.41
0736731	Lights, HiViz FT-GESM LED 1st	Load Managed	0.00	0.00	10.41
0741463	Light, Extruded Brow, HiViz FT-BG2-R275C-80-ML-*, 80", Sw Fet	Load Managed	0.00	0.00	47.50
0894651	HVAC, Heavy-Duty, Velocity FR, w/PACCAR, CARE	Load Managed	0.00	0.00	136.00
0002758	Amp Draw, NFPA/ULC Radio Allowance	NFPA	5.00	0.00	0.00
0018738	Left Rear Compt, 48" Roll, NWI	NFPA	0.90	0.90	0.00
0018830	Right Rear Compartment, 48" Roll, NWI	NFPA	0.90	0.90	0.00
0034999	Left Over Wheel Compt, 51.50"-51.50", Roll Door, Tandem, NWI	NFPA	0.90	1.80	0.90
0035001	Right Over Wheel Compt, 51.50"-51.50", Roll Door, Tandem, NWI	NFPA	0.90	1.80	0.90
0039678	Left Forward Compt, 60" & 48", Roll, NWI	NFPA	3.60	7.20	3.60
0039681	Right Forward Compt, 60" & 48", Roll, NWI	NFPA	3.60	7.20	3.60
0092582	Load Manager/Sequencer, MUX	NFPA	0.56	0.56	0.00

\* UDMC = User Defined Mission Critical, LM = User Defined Load Managed, S = Electrical Amperage Supply



# Electrical Analysis

**ATTACHMENT 1** 8/6/2025

<b>Bid #:</b>	990	<b>Job #:</b>	
<b>Desc:</b>	Type 1 Velocity Rescue	<b>Sales Rep:</b>	Klockzien, Dave
<b>Customer:</b>	Manteca Fire Department	<b>Organization:</b>	Golden State Fire Apparatus, Inc
<b>Option:</b>	Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT	<b>Type:</b>	Multiplexed

Option	Description	Type*	Minimum Load	Intermittent Load	Total Connected
0516618	Generator, Harrison 10kW MCR Hydraulic, Hot Shift PTO	NFPA	35.31	0.00	0.00
0540440	Light, Front Zone, WIn M6*C, LED, Clear Lens 2lts	NFPA	1.80	2.70	0.00
0540692	Lights, Side Zone Lower, WIn M6*C LED, Clear Lens, 3pr, Ovr 25	NFPA	5.40	8.10	0.00
0541155	Lights, Rear/Side Up Zone, WIn M9*C LED, Clear Lens 4lts	NFPA	4.80	7.20	0.00
0555915	Wiper Control, 2-Speed with Intermittent, MUX, Impel/Velocit	NFPA	2.10	8.40	0.00
0563675	Lights, Clearance/Marker/ID, Rear, Truck-Lite 33050R LED 7Lts	NFPA	0.35	0.00	0.00
0564655	Lights, Rear Zn Lwr, WIn M6*C LED, Clear Lens, For Tail Lt	NFPA	1.80	2.70	0.00
0568012	Air Dryer, Wabco System Saver 1200, Heater, 2010	NFPA	7.81	0.00	0.00
0568369	Cab Instruments, Ivory Gauges, Chrome Bezels, Impel/Velocit	NFPA	1.26	0.00	0.00
0604784	Lightbar, WIn, Freedom IV-Q, 81", RRRRWRsrROptRsrRWRRRR	NFPA	8.96	2.68	9.92
0606017	Light, Do Not Move Apparatus, WIn VTX609R Red LED 2lts, DS	NFPA	60.00	90.00	0.00
0606068	Lights, Hatch Compt, Pierce LED Strip Lights, HDR	NFPA	1.40	1.40	0.00
0606874	Siren, WIn 295HfSA7 200W, Dual Tone, Flush Mount, Sw Bat	NFPA	1.40	12.60	0.00
0608996	Lights, Step, P25 LED, HDR-NWI, Rear & Rec Walkway, Rr Sw	NFPA	0.50	0.00	0.00
0617576	NWI, Hatch, Recessed Walkway & Recessed Area	NFPA	3.10	0.00	0.00
0620054	Light, Directional/Marker, Intermediate, Weldon 9186-8580-29	NFPA	0.10	0.90	0.00
0620179	Cab, Velocity FR, 7010 Raised Roof w/Integrated Mast Light	NFPA	6.80	10.20	0.00
0646614	Cabinet, (2) Rr Fcng, Overhead, 22 W x 10 H x 34 D, Imp/Vel FR	NFPA	0.22	0.22	0.00
0647638	Lights, Dome, Weldon Dual LED 4 Lts	NFPA	0.80	0.80	0.00
0648425	Light, Directional, WIn 600 Cmb, Cab Crn, Wrp Bzl Out HD Lts,	NFPA	0.70	0.70	0.00
0650184	Lights, Dome, Weldon, Dual LED	NFPA	0.40	0.40	0.80
0653937	Flasher, Headlight Alternating	NFPA	0.08	0.00	0.00
0736083	Lights, Clearance/Marker, Side, P25 LED 2 Lts, Others With Visor	NFPA	0.49	0.00	0.00
0736670	Headlights, Rect LED, HiViz FT-4X6-4KIT, AXT/Enf/Imp/Sab/Vel,	NFPA	7.66	7.66	0.00
0765626	Cabinet, Rear Facing, RS, 26.5 W x 38 H x 21.5 D, Ext Acc Only,	NFPA	0.22	0.22	0.00
0765633	Cabinet, Rear Facing, LS, 30.5 W x 38 H x 24 D, Ext Acc Only,	NFPA	0.41	0.41	0.00
0769566	Lights, Perimeter Cab, Amdor AY-LB-12HW020 & AY-LB-	NFPA	0.96	0.00	0.00
0769570	Lights, Perimeter, Amdor AY-LB-12HW020 20", Brkt	NFPA	1.80	0.00	0.00
0770056	Lights, Perimeter Body, Amdor AY-LB-12HW020 LED 2lts, Rear	NFPA	0.60	0.00	0.00
0770200	Handrail, Exterior, Hansen, Knurled, Alum, LED Backlit, 4-Door	NFPA	0.80	0.00	0.00
0791528	Light, Traffic Directing, WIn TAL65, 36.00" Long, TACTL5	NFPA	0.60	1.20	0.00
0804514	Lights, Tail, WIn M62BTT* Red Stop/Tail & M62T* Amber Dir Arw	NFPA	0.83	2.49	0.00
0807075	Lights, Rear Scene, WIn, PEL2*, 2Lts.	NFPA	1.30	0.00	0.00
0807989	DEF Tank, 7.3 Gallon, LS Fill, Under Cab,Paccar,Treadplate	NFPA	0.60	11.40	0.00
0808514	Engine, Paccar MX, 510HP, 1850 lb-ft W/OBD, EPA 2027,	NFPA	6.00	0.00	0.00
0813791	Panel, Charger Display, Kussmaul, 091-94-12, Batt Dir	NFPA	0.03	0.00	0.00
0814201	Vehicle Information Center, 7" Color Display, Touchscreen, MUX,	NFPA	1.20	0.00	0.00
0818519	Hitch, Receiver, Rear/Sides, Through Body, No Ball or Wiring	NFPA	0.00	0.00	0.00
0819925	Cabinet, Fwd Fcng, Ctr, 36 W x 56 H x 14 D, Roll, Imp/Vel	NFPA	0.56	0.56	0.00
0834985	Rear Compt, Roll/Swing Down Lap Door, Gortite, Tandem Axle	NFPA	3.60	7.20	3.60
0887546	Trans, Allison 6th Gen, 4000 EVS P, w/Prognostics,	NFPA	2.00	2.00	0.00
0889577	Bracket, License Plate & Light, P25 LED, Stainless Brkt	NFPA	0.07	0.00	0.00
0892618	Not Required, Indicator Light, Pump Panel, No Pump or Skid	NFPA	0.10	0.00	0.00
0892637	Lights, Cab & Crw Cab Acs Stps, P25, LED w/Bezel, 1Lt Per Step	NFPA	1.00	0.00	0.00
0647728	Alternator, 430 amp, Delco Remy 55SI	S	0.00	0.00	0.00
<b>Load Totals:</b>			<b>192.28</b>	<b>1072.12</b>	<b>413.02</b>

\* UDMC = User Defined Mission Critical, LM = User Defined Load Managed, S = Electrical Amperage Supply



# Electrical Analysis

ATTACHMENT 1 8/6/2025

**Bid #:** 990  
**Desc:** Type 1 Velocity Rescue  
**Customer:** Manteca Fire Department  
**Option:** Pierce Command Zone, Advanced Electronics & Control System, Vel WiFi CZT

**Job #:**  
**Sales Rep:** Klockzien, Dave  
**Organization:** Golden State Fire Apparatus, Inc  
**Type:** Multiplexed

Note: Minimum Continuous Load is in "Blocking Right of Way" mode. (Reference current edition of NFPA 1901)  
Note: Intermittent Load items are not factored in on any alternator load comparisons. These items are included on the report for reference only and should be looked at as amp draw exclusion items. (Reference current edition of NFPA 1901)  
Note: Total Connected Load "Demand" represents Total Connected Load minus any Load Managed items

## Alternator Output at Idle: 268.00

Minimum Continuous Load	
Supply:	268.00
Demand:	192.28
Variance:	75.72

## Alternator Output at Governed Speed: 374.00

Total Connected Load	
Supply:	374.00
Demand:	338.52
Variance:	35.48

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\* UDMC = User Defined Mission Critical, LM = User Defined Load Managed, S = Electrical Amperage Supply

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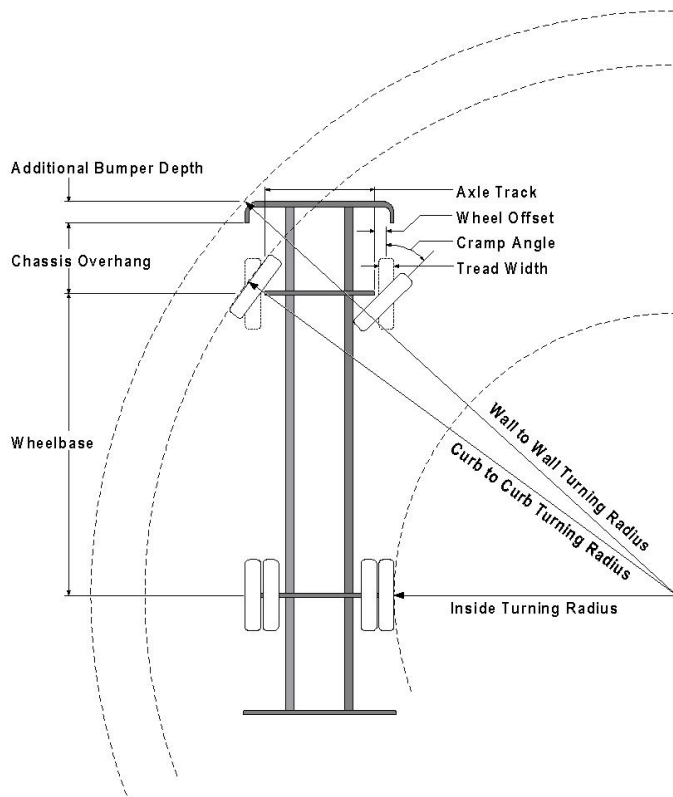


# Turning Performance Analysis ATTACHMENT 1

07/16/2025

**Bid Number:** 990  
**Department:** Manteca Fire Department

**Chassis:** Velocity Chassis (Big Block), 2010  
**Body:** HDR, Non-Walk-In, Aluminum



## Parameters:

*Inside Cramp Angle:	40°
Axle Track:	82.92 in.
Wheel Offset:	5.3 in.
Tread Width:	17.5 in.
Chassis Overhang:	78 in.
Additional Bumper Depth:	7 in.
Front Overhang:	85 in.
Wheelbase:	243.5 in.

## Calculated Turning Radii:

Inside Turn:	23 ft. 0 in.
Curb to curb:	38 ft. 4 in.
Wall to wall:	42 ft. 4 in.

Category	Option	Description
Bumpers	0633464	Bumper, Non-Extended, Steel, Painted, Imp/Vel
Wheels, Front	0019618	Wheels, Front, Alcoa, 22.50" x 13.00", Aluminum, Hub Pilot
Axle, Front, Custom	0508846	Axle, Front, Oshkosh TAK-4, Non Drive, 24,000 lb, Velocity
Tires, Front	0802640	Tires, Front, Goodyear, Armor Max MSA, 445/65R22.50, 20 ply

## Notes:

\*Actual Inside cramp angle may be less than shown.

Curb to Curb turning radius calculated for 9.00 inch curb.

\*\*\* This Turning Performance Report does not accurately reflect the benefits of the rear steer axle as it's capabilities are not able to be calculated in the performance above. \*\*\*

Inside CrampAngle	Maximum turning angle of the front inside fire.
Axle Track	King-pin to King-pin distance of front axle.
Wheel Offset	Offset from the center line of the wheel to the King-pin.
Tread Width	Width of the tire tread.
Chassis Overhang	Distance of the center line of the front axle to the front edge of the cab. This does not include the bumper depth.
Additional Bumper Wheel	Depth that the bumper assembly adds to the front overhang.
Wheelbase	Distance between the center lines of the vehicles front and rear axles.
Inside Turning Radius	Radius of the smallest circle around which the vehicle can turn.
Curb to Curb Turning Radius	Radius of the smallest circle around which the vehicle's tires can turn. This measures assumes a curb height of 9 inches.
Wall to Wall Turning Radius	Radius of the smallest circle around which the vehicle's tires can turn. This measures takes into account any front overhang due to chassis , bumper extensions and or aerial devices.



# **4 PRODUCT WARRANTIES**

**Exhibit "C"**



# Fire and Rescue Apparatus

## One (1) Year Material and Workmanship

## Basic Apparatus

# Limited Warranty

### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Portions of the apparatus manufactured by Pierce shall be free from defects in material and workmanship
Warranty Begins:	The date the apparatus is placed in service, or 60 days from the original buyer invoice date, whichever comes first.
Warranty Period Ends After:	Twelve (12) months.
Conditions and Exclusions:	No specific exclusions apply
See Also Paragraphs 2 thru 4	

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*



# Fire and Rescue Apparatus

## Three (3) Year Material and Workmanship Velocity and Impel Custom Chassis

### Limited Warranty

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Portions of the apparatus manufactured by Pierce shall be free from defects in material and workmanship
Warranty Begins:	The date the apparatus is placed in service, or 60 days from the original buyer invoice date, whichever comes first.
Warranty Period Ends After:	Three (3) Years, or 30,000 Miles, or 5000 Engine Hours
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	This limited warranty applies, where applicable, to Goldstar lamination, defroster heater coil and motor blower assembly (excluding the FET PWM module), heater, air conditioning condenser coil and fan/motor assembly, air conditioning evaporator coil and motor blower assembly (excluding the drain pan pump and thermostat), under seat heaters coil and motor blower assembly (excluding the FET PWM module), HVAC electronic switches, HVAC hoses and hard lines, heater water valve, Pierce PS6 seat frames and hardware, Pierce One-Eleven mirrors, Pierce hands-free scba holder, cracking or color loss of roto-molded components, Meritor rear axle, Wabco ABS system, cab door handles, Standen spring suspension components, and the gauge instrument cluster.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

#### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*



# Fire and Rescue Apparatus

## SUPPLIER

### Limited Warranty

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the purchaser who first puts the product in service ("Buyer"):

Coverage:	Covers any failures of the engine which result, under normal use and service, from a defect in material or factory workmanship.
Warranty Begins:	The date of the original buyer invoice.
Warranty Period Ends After:	Five (5) years or 100,000 miles, whichever occurs first
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	See warranty for exclusions.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

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#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*

## **PACCAR ENGINE LIMITED WARRANTY**

### **PACCAR MX Warranty**

### **United States**

**THIS LIMITED WARRANTY ("LIMITED WARRANTY") LISTS THE RESPECTIVE RIGHTS AND RESPONSIBILITIES OF PIERCE MANUFACTURING INC.'S END USER CUSTOMER THAT FIRST PUTS THE PACCAR ENGINE INTO SERVICE ("YOU" or "FIRST PURCHASER"), PACCAR INC ("PACCAR"), AND THE SERVICING PACCAR ENGINE DISTRIBUTORS ("AUTHORIZED DISTRIBUTORS"). PLEASE READ THIS LIMITED WARRANTY CAREFULLY.**

PACCAR warrants directly to You that the PACCAR MX engine and related kitted parts (collectively, the "Engine") will be free from defects in materials and factory workmanship ("Warrantable Failures") appearing under normal commercial use and service during the time, mileage or hour limitations set forth in the attached Warranty Schedule. **This Engine warranty extends only to You, and not any subsequent owner or user of the Engine.** The Emissions warranty is made to all owners of the Engine in the chain of distribution until the end of the Emissions warranty coverage period. Warranty coverage relating to the Emissions components is outlined in the Emissions Warranty section of the PACCAR MX Operator's Manual, the terms and conditions of which are incorporated herein by reference.

YOUR SOLE AND EXCLUSIVE REMEDY AGAINST PACCAR AND ITS SUBSIDIARIES AND AFFILIATES ARISING FROM YOUR PURCHASE AND USE OF THIS ENGINE IS LIMITED TO THE REPAIR OR REPLACEMENT OF WARRANTABLE FAILURES AT AUTHORIZED DISTRIBUTORS IN THE UNITED STATES AND CANADA AND IS SUBJECT TO PACCAR'S TIME, MILEAGE, AND HOUR LIMITATIONS LISTED IN THE ATTACHED WARRANTY SCHEDULES. The maximum time, mileage and hour limitations in the Warranty Schedules begin running on the Date of Delivery to the First Purchaser. **The accrued time, mileage, or hours is calculated when this Engine is brought into an Authorized Distributor for correction of Warrantable Failures.**

### **WARRANTY DISCLAIMER AND LIMITATIONS OF LIABILITY (ENGINE AND EMISSIONS)**

**This Limited Warranty is the sole warranty made by PACCAR and its Authorized Distributors to You relating to the Engine. Except for the above limited express warranty, PACCAR and its Authorized Distributors make no other warranties to You, express or implied. PACCAR AND ITS AUTHORIZED DISTRIBUTORS EXPRESSLY DISCLAIM ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

IT IS AGREED THAT PACCAR AND ITS AUTHORIZED DISTRIBUTORS SHALL NOT BE LIABLE TO YOU FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO: LOSS OF INCOME OR LOST PROFITS; ENGINE OR VEHICLE DOWNTIME; THIRD PARTY DAMAGE, INCLUDING DAMAGE OR LOSS TO OTHER ENGINES, VEHICLES OR PROPERTY, ATTACHMENTS, TRAILERS AND CARGO; LOSS OR DAMAGE TO PERSONAL CONTENTS; COMMUNICATION EXPENSES; LODGING AND/OR MEAL EXPENSES; FINES; APPLICABLE TAXES OR BUSINESS COSTS OR LOSSES; ATTORNEYS' FEES; AND ANY LIABILITY YOU MAY HAVE IN RESPECT TO ANY OTHER PERSON OR ENTITY.

This warranty does not apply to parts or accessories supplied by the vehicle manufacturer or third parties.

Failures of belts and hoses supplied by PACCAR are covered during the first year from the Date of Delivery of the Engine to the First Purchaser. PACCAR does not warrant antifreeze, lubricants, filters, filter elements, or any other part that is a maintenance or repair item. However, in its sole discretion, PACCAR may pay for lubricating oil, antifreeze, filter elements, belts, hoses, and other maintenance or repair items if the need for replacing such items is due to a Warrantable Failure of the Engine.

You are responsible for the safe operation and maintenance of the Engine and Emissions equipment as specified in the applicable Operator's Manuals. You are responsible for providing proof that all recommended inspections and maintenance have been performed. Before the expiration of the applicable warranty, You must notify an Authorized Distributor of any Warrantable Failures and make the Engine available for Engine repair by such Authorized Distributor. You are responsible for delivery of the Engine to the Authorized Distributor. Locations in the United States and Canada of Authorized Distributors may be found at [WWW.PACCARPOWERTRAIN.COM](http://WWW.PACCARPOWERTRAIN.COM).

PACCAR IS NOT RESPONSIBLE FOR WEAR AND TEAR OR WEAROUT OF COVERED PARTS, storage deterioration, and changes in adjustment resulting from your use of the Engine. Damage due to accident, misuse, abuse, neglect, negligence, improper or insufficient maintenance, or unauthorized modification is not warranted. This may include, but is not limited to: operation without adequate coolants, lubricants, or other fluids; over-fueling; over-speeding; lack of maintenance of the lubricating, cooling or air intake systems; improper storage, starting, warm-up, run-in or shutdown practices; and unauthorized modifications to the Engine. **PACCAR is not responsible for damage or loss resulting from Engine horsepower/torque upgrades.**

Parts used to repair a Warrantable Failure may be new parts, approved remanufactured parts, or repaired parts. PACCAR is not responsible for failures resulting from the use of parts not approved by PACCAR. A new or approved remanufactured part used to repair a Warrantable Failure assumes the identity of the part it has replaced and is entitled to the remaining warranty coverage, if any.

PACCAR IS NOT RESPONSIBLE FOR DAMAGE OR LOSSES CAUSED BY INCORRECT OIL, FUEL, DIESEL EXHAUST FLUID, COOLANT, OR ADDITIVES; WATER, DIRT OR OTHER CONTAMINANTS IN THE FUEL, OIL OR DIESEL EXHAUST FLUID; OPERATION WITHOUT ADEQUATE COOLANTS OR LUBRICANTS; OVER-FUELING; OVER-SPEEDING; IMPROPER STORAGE, STARTING, WARM-UP, RUN-IN OR SHUT-DOWN PRACTICES; OR UNAUTHORIZED MODIFICATIONS OF THE ENGINE. Failure of replacement parts used in repairs due to the above non-warrantable conditions is not warrantable.

If your vehicle is disabled by a Warrantable Failure to the Engine during the base warranty period, PACCAR is not responsible for towing expenses to transport the vehicle to the nearest Authorized Distributor. In lieu of the towing expense and at the sole discretion of PACCAR,

PACCAR will pay the reasonable costs of an authorized mechanic to travel to and from the location of the disabled Vehicle in order to perform the Engine repair.

PACCAR will pay for reasonable labor costs for Engine removal and reinstallation when necessary to repair a Warrantable Failure.

Warrantable Failures resulting in excessive oil consumption will be handled within the basic Engine coverage as stated in the attached Engine Schedule. Before a claim for excessive oil consumption, low power, or excessive fuel consumption will be considered for payment, You must submit adequate documentation to show that consumption exceeds PACCAR published standards

PACCAR reserves the right to inspect and download data from the Engine Electronic Control Module for purpose of failure analysis unless prohibited by applicable law.

#### **TIME LIMIT ON COMMENCING LEGAL ACTION / OTHER TERMS**

IT IS AGREED THAT YOU HAVE 12 MONTHS FROM THE ACCRUAL OF THE CAUSE OF ACTION TO COMMENCE ANY LEGAL ACTION ARISING FROM THE PURCHASE OR USE OF THE ENGINE, OR BE BARRED FOREVER.

To the extent any provision of this limited warranty is found to contravene the law of any jurisdiction, the remainder of the warranty shall not be affected thereby.

**PACCAR ENGINE LIMITED WARRANTY SCHEDULE****PACCAR MX Warranty  
United States**

THIS ENGINE WARRANTY SCHEDULE APPLIES ONLY TO ORIGINAL FACTORY EQUIPMENT AND IS SUBJECT TO THE TERMS AND LIMITATIONS IN THE ATTACHED LIMITED WARRANTY. This Engine Warranty Schedule does not apply to the vehicle which is warranted separately. Pursuant to the terms of the attached Limited Warranty, PACCAR Inc ("PACCAR") will pay warranty claims for Warrantable Failures within the following maximum limits in time, mileage, or hours, **whichever shall occur first**. The Warrantable Failure must be brought to the attention of an Authorized Distributor within 30 days of discovery.

**PACCAR MX Engine**

**Basic Engine -Twenty-four (24) months or 250,000 miles (or 400,000 km) or 6,250 hours** - (all applications except fire apparatus)

**Fire Apparatus Truck Applications Basic Engine - Sixty (60) months or 100,000 miles (or 160,000 km) or 6,250 hours**

**Major Engine Components - Sixty (60) months or 500,000 miles or 12,500 hours**

Cylinder Block Casting  
Main Bearing Bolts  
Cylinder Head Casting  
Cylinder Head Capscrews

Crankshaft  
Camshaft  
Cam Follower Assemblies  
Connecting Rod Assemblies

Lube Pump Gear  
Crankshaft Gear  
Camshaft Gear  
Camshaft Idler Gear

Flywheel Housing  
Water Pump Housing  
Thermostat Housing

**R. H. SHEPPARD CO., INC.**  
101 Philadelphia St.  
Hanover, PA 17331  
**Pierce Manufacturing Inc.**  
2600 American Drive  
Appleton, WI 54912

**LIMITED WARRANTY:** The R. H. Sheppard Co. Inc., ("Sheppard") warrants all M110PKG1 and M110SAU1 steering gears manufactured and sold to Pierce Manufacturing Inc. ("Pierce") for application on Pierce TAK-4 equipped vehicles to be free from defects of workmanship and material under normal use and service for a period of thirty six months from the in service date of the vehicle to its original owner.

Vehicle applications where Sheppard product is used require an application approval before production build. If Pierce uses Sheppard product for any purpose or application which has not been approved by Sheppard in advance, including aftermarket devices (defined as a device added to the steering system directly or indirectly affecting the performance or operation of the Sheppard product in its approved application) not tested and approved by Sheppard this limited warranty **SHALL NOT APPLY AND SHALL BE VOID. SHEPPARD MAKES NO OTHER WARRANTY, EITHER EXPRESS OR IMPLIED. SHEPPARD EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.**

**SHEPPARD SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL, SPECIAL OR INDIRECT DAMAGES OR FOR LOSS OR DAMAGE DIRECTLY OR INDIRECTLY ARISING FROM THE USE OF A PRODUCT.** Pierce expressly acknowledges its obligation to inform all users (customers) of the above disclaimer.

**CONDITIONS:** Claims under this Limited Warranty may only be made by Pierce. In no event shall Sheppard be held liable for warranty charges by unauthorized persons. No allowance will be made for repairs or alterations, unless made with the written consent of Sheppard. Authorized Pierce dealers shall be the only authorized repair facility for Sheppard products applied to Pierce vehicles. Any warrantable repair made under this Limited Warranty must be made on or before 36 months of the in-service date for the Product to which the claim relates. Sheppard shall not be liable for claims made after such date. Sheppard product fitted to Pierce vehicles that are repaired at a repair facility other than an authorized Pierce dealer within the warranty period will be considered for payment under the guidelines of this agreement only by joint written consideration of Sheppard and Pierce warranty departments. It shall be the responsibility of the Pierce warranty department to notify Sheppard if and when this situation occurs. Sheppard will not be held responsible for damage to other steering components such as but not limited to pumps and reservoirs due to improper adjustment of steering gear relief plungers. Vehicle downtime and towing will not be considered under warranty.

**REMEDIES:** The sole and exclusive remedy of Pierce for Sheppard's breach of the foregoing warranty is limited to the return and repair or reimbursement as follows:



**R. H. SHEPPARD CO., INC. WARRANTY**  
**Pierce Manufacturing Inc.**  
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**Warranty Support:** In support of the Pierce dealer network, Sheppard will provide a toll-free "Hotline" service to assist in the diagnosis and troubleshooting of steering problems. The R. H. Sheppard Co., Inc. Field Service Department can be reached at 1-800-274-7437 for assistance. Sheppard will require that Pierce dealers contact this toll-free "Hotline" for approval before product is removed from a vehicle in a warranty situation. When contacted regarding a warranty situation, the Sheppard representative will provide an authorization number for removal of the product. This Returned Goods Authorization (RGA) number must be included in all warranty correspondence and attached to all returned goods.

**Procedure:** In the event of a warranty situation, the servicing dealer shall contact the Sheppard Hotline and receive an RGA number before replacing any steering gear. For M110PKG1 and M110SAU1 steering gear models, the dealer will first obtain an RGA number from Sheppard, and then order the replacement gear from Pierce. Replacement M110PKG1 and M110SAU1 steering gears shall be shipped from Pierce once those models are in full production. A warranty claim for both parts and labor will then be generated by the dealer and sent to Pierce. After reviewing the claim, Pierce will submit it to Sheppard for reimbursement.

**Parts Reimbursement:** Sheppard agrees to reimburse Pierce at Pierce's purchase price plus 30% mark-up for parts found to be defective within the warranty period. Parts being returned for warranty consideration shall be sent to the R. H. Sheppard Company, 447 E. Middle St., Hanover, PA 17331 ATTN: Warranty Dept. Sheppard's determination as to whether the part is covered by the foregoing warranty is final and conclusive. Sheppard requires the return of complete steering gears only. Individual seals replaced under warranty **should not** be returned unless specifically requested by Sheppard. All parts being returned for warranty consideration must be clearly tagged with all pertinent warranty information including, but not limited to (1) Returned Goods Authorization number (RGA); (2) claim number; (3) date in service; (4) date of failure; (5) mileage; (6) part number; (7) labor hours; (8) dealer labor rate and; (9) dollar amount claimed. Claims submitted without prior authorization are subject to rejection under this agreement.

**Labor:** Labor to repair Sheppard product found to be defective within the warranty period will be reimbursed at not more than 10 hours per vehicle. Labor shall be reimbursed at the rate of \$85.00 USD per hour for M110PGK1 and M110SAU1 steering gears.

**Freight:** Pierce will collect M110PGK1 and M110SAU1 warranty material at a designated collection point. Inbound freight to the Pierce collection point will be the responsibility of Pierce. All warranty material should be returned from the Pierce collection point to R. H. Sheppard Co. Freight Collect by a Sheppard-specified common carrier based on location of the Pierce collection point. Sheppard does not require the return of failed seals. Any freight charges incurred for the return of seals will be the responsibility of Pierce. Parts returned for warranty consideration without prior authorization are subject to rejection under this agreement and may be subject to a charge back of inbound freight charges. Parts rejected under this warranty will be returned to Pierce Freight Collect or scrapped by Sheppard at Pierce's discretion.

**R. H. SHEPPARD CO., INC. WARRANTY**  
**Pierce Manufacturing Inc.**  
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**Outside Purchases:** Pierce authorized dealers shall be the only outlet for repair, warranty service and parts for Sheppard products applied to Pierce vehicles. Sheppard will not be responsible for consumables such as hoses, belts, fluids, fittings or miscellaneous shop material that may be required for the repair of the product.

**Warranty Documentation:** Warranty credit memos will be issued monthly to the Pierce Warranty Department. Monthly credit memos will include (1) claim number; (2) part number; (3) parts reimbursement; (4) labor reimbursement; (5) any applicable Pierce reference number and; (6) reason for rejection or acceptance of the claim. Credit memos will be issued in U.S. funds. Debits for warranty claims will not be accepted under this agreement. Claim disposition will constitute the final and conclusive resolution of warranty claims.

**Parts Retention:** Sheppard will retain parts submitted for warranty consideration for a period of sixty (60) days for any material found to be rejected for warranty. Sheppard will notify Pierce within sixty (60) days of receipt of Sheppard's determination as to whether any such part is covered by this warranty. Warranty reimbursement will be issued within thirty days of receipt of material at Sheppard.

**Good-Will Requests:** Good-Will requests will be considered jointly between Sheppard and Pierce for equitable compensation.

**RECALLS:** Sheppard retains the right to review information regarding federal motor vehicle recall and /or product repair programs if Sheppard products fitted to Pierce vehicles are alleged to be non-compliant with federal motor vehicle safety standards. Sheppard retains the right to review any claims of product defect or non-compliance before participating in reimbursement of expenses incurred as a result of alleged non-compliance or defect of its products. Sheppard agrees to negotiate in good faith for the reimbursement of expenses incurred by Pierce for all administrative, material and labor cost and expense associated with any recall where Sheppard product is found to be defective or non-compliant with federal motor vehicle standards.

**MISCELLANEOUS:** This writing constitutes the full complete and final statement of Sheppard's limited warranty for M110PKG1 and M110SAU1 products sold to Pierce. All prior oral or written correspondence, test data, negotiations, representations, understandings and the like regarding products are merged in this writing and extinguished by it. This limited warranty may not be altered, amended extended or modified except by a writing signed by the President or Vice President of Sheppard. No employee, vendor, dealer, distributor or other representative of Sheppard has authority to make statements to extend, expand, alter or amend the terms of this Limited Warranty. Sheppard expressly disclaims any statements contrary to the Limited Warranty. Sheppard's failure at any time to enforce any of the terms and conditions stated herein shall not constitute a waiver of any provisions herein. This Limited Warranty shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania.

**R. H. SHEPPARD CO., INC. WARRANTY**  
**Pierce Manufacturing Inc.**  
**Page 4**

Any legal actions which may arise as a result of disputes, controversies or claims arising out of or related to this limited warranty shall be in such forum as Sheppard and Pierce shall agree, or, in the absence of agreement, in a court of appropriate jurisdiction other than in the county in which either party is located. This Limited Warranty shall not be assigned by Pierce.

**COOPERATIVE EFFORT:** Sheppard and Pierce agree to work cooperatively toward expanding this warranty coverage to a period of sixty months from the in service date. These cooperative efforts shall focus on examining the effects of increased heat generated by 2007 model engines and its impact on the entire power steering system.

**AGREEMENT:** This agreement is effective April 3, 2006 and may be modified by mutual agreement between Sheppard and Pierce of a signed amendment to be attached to the original Limited Warranty. There are no third party beneficiaries to this Limited Warranty. This warranty agreement applies to Pierce authorized dealers only. It does not encompass any special arrangements that Pierce may now have or that Pierce may enter into, with any other segments of the trucking industry. This warranty agreement does not apply to non-conforming product removed at Pierce assembly plants.

This Limited Warranty agreement between the R. H. Sheppard Co., Inc and Pierce Manufacturing Inc. may be terminated by either party with thirty days written notice prior to termination.

Signed at Pierce Manufacturing Inc., Appleton, WI this \_\_\_\_\_ day of \_\_\_\_\_, 2006.

**R. H. SHEPPARD CO., INC.**

**PIERCE MANUFACTURING INC.**

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title



# Fire and Rescue Apparatus

## Lifetime Fifty (50) Year Structural Integrity

### Chassis Frame & Crossmembers

## Limited Warranty

### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Custom chassis frame rail and cross members manufactured by Pierce shall be free from defects in material and workmanship
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Fifty (50) Years (Expected Life of Apparatus)
Conditions and Exclusions:	This warranty does not apply to damage caused by corrosion.
See Also Paragraphs 2 thru 4	

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*



# Fire and Rescue Apparatus

## Three (3) Year Material and Workmanship TAK-4 Independent Front Suspension

### Limited Warranty

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The TAK-4 Front Independent Suspension and Steering Gears shall be free from defects in material and workmanship.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Three (3) Years -or- 30,000 Miles
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	This limited warranty excludes brake pads, brake rotors, seal boots and shock absorbers.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

#### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*



# Fire and Rescue Apparatus

## Three (3) Year Material and Workmanship TAK-4 Independent Rear Suspension

### Limited Warranty

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The TAK-4 Rear Independent Suspension and Steering Gears shall be free from defects in material and workmanship.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Three (3) Years -or- 30,000 Miles
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	This limited warranty excludes brake shoes, brake drums, ball joint boots and shock absorbers.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

#### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*





# Fire and Rescue Apparatus

## Three (3) Year Material and Workmanship Meritor Wabco ABS Brake System Limited Warranty

### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The Meritor Wabco ABS brake system shall be covered by Meritor Wabco as indicated in the attached Meritor Wabco warranty coverage description
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Three (3) Year
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	The exclusions listed in the attached Meritor Wabco warranty description shall apply.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*

# WARRANTY

## MODEL YEAR 2021 VEHICLES



Warranty coverage is essential to protecting your investment. But understanding the full details of your coverage can be challenging. This straightforward approach allows you, our valued customer, to better understand how your specific vehicle applications will be covered in your region. Our component warranty coverage is provided according to vocation/usage categories listed below.

- Linehaul covers high mileage operation (over 60,000 miles/year) on well-maintained major highways of concrete or asphalt construction.
- General Service covers moderate mileage operations (less than 60,000 miles/year) on well-maintained public roads (less than 10 percent off-road) typically with less than three (3) stops per mile.
- Heavy Service (Vocational) covers vehicles with more than 10 percent off-road OR moderate to frequent starts/stops typically with more than three (3) stops per mile.
- Off-Highway Service covers lower mileage operations. Vehicles are not typically licensed for highway use.

### How to Read Warranty Coverage (Example)

Number of Years	Mileage (in thousands) Unl=Unlimited	P=Parts Only P&L=Parts & Labor
3	300	P

- The standard aftermarket warranty for WABCO products - including WABCO Original parts, WABCO Reman Solutions, ProVia quality aftermarket parts and WABCO retrofit solutions - is one year, parts only from in-service date when purchased from ZF distributor networks or its affiliates and/or subsidiaries.

**WABCO**



## WARRANTY - MODEL YEAR 2021 VEHICLES

## LINEHAUL/GENERAL SERVICE WARRANTY INFORMATION

## LINEHAUL/GENERAL SERVICE VEHICLES

- Aerial Ladder Truck
- Aerial Platform
- Ambulance
- Auto Hauler
- Beverage Truck
- Bulk Hauler
- Chip Hauler (Truck)
- Cross Country Coach
- Doubles
- Flatbed
- Front Engine Commercial Chassis
- Front Engine Integral Coach
- General Freight
- Grain Hauler
- Intercity Coach
- Intermodal Chassis
- Livestock Hauler
- Meat Packer
- Moving Van
- Municipal Truck
- Pipe Hauler
- Platform Auto Hauler
- Pumper
- Rear Engine Integral Coach
- Recreational Vehicles
- Refrigerated Freight
- School Bus
- Stake Truck
- Tanker
- Tanker Truck
- Triples
- Tour Bus
- Wrecker

## LINEHAUL TYPICALLY IS

- High mileage operation (over 60,000 miles/year)
- Well maintained major highways of concrete or asphalt construction

## GENERAL SERVICE TYPICALLY IS

- Moderate mileage operations (less than 60,000 miles/year)
- Well maintained public roads (less than 10% off-road)
- Less than three (3) stops per mile

WABCO Components <sup>1</sup>	
Air Management	
Air Brake Valves	1/100/P&L
Trailer Lift Axle Control Valve	
Trailer Control Line Filter <sup>3</sup>	
Air Compressors (ALL) <sup>2</sup>	2/200/P&L
Air Dryers (ALL)	3/300/P&L
Aerodynamics	
OptiFlow® TrailerSkirt	2/UnU/P
OptiFlow® Trailer Tail and AutoTail	2/UnI/P
Braking Systems	
ABS (Anti-Lock Braking System) Air	3/300/P&L
ABS (Anti-Lock Braking System) Hydraulic	
Electronic Braking System (EBS)	
Electronic Stability Control (ESC)	
Roll Stability Control (RSS)	
Trailer Roll Stability Support (RSS)	
Trailer ABS (Anti-Lock Braking System) <sup>3</sup>	
Driveline Suspension Control	
Clutch Controls	2/200/P&L
Leveling Valves	1/100/P&L
OptiRide® Automated Manual Transmission (AMT)	
OptiRide® Electronically Controlled Air Suspension (ECAS)	3/300/P&L

WABCO Components <sup>1</sup> (cont.)	
Safety	
OnGuardACTIVE®	3/300/P&L
OnLane®	
OnLaneALERT®	
OnSide®	
Trailer SafeStart™	
Trailer TailGUARD™	
Telematics	
TrailerCAST™ Telematics Device	3/300/P&L
Wheel End Solutions	
EasyFit™ Slack Adjuster	6/600/P
MAXXUS™ Truck Air Disc Brake	5/500/P&L
IVTM - Wheel Module	6/P
IVTM - All Other Products	2/P
Pan 17 and 19 Air Disc Brake	2/Unl/P and 1/Unl/L
Pan 22 Air Disc Brake	5/500/P and 1/L
TRISTOP™ D Actuator w/ IBV or IRB	6/600/P
TRISTOP™ D Actuator	3/300/P
UNISTOP™ Actuator	2/200/P
Trailer MAXX22T™ Air Disc Brake	5/500/P and 1/L

<sup>1</sup> ZF and WABCO branded components. <sup>2</sup> WABCO compressors installed on Cummins, Mercedes, and DDC engines are not warranted or serviced by ZF. Please contact your respective dealer/distributor of those engines for warranty and servicing. <sup>3</sup> An extended warranty of 4/400/P will apply when a WABCO Trailer Control Line Filter is used in combination with a WABCO Trailer ABS valve.

## HEAVY SERVICE (VOCATIONAL) WARRANTY INFORMATION

### HEAVY SERVICE VEHICLES

- Airport Rescue Fire (ARF)
- Airport Shuttle
- Asphalt Truck
- Block Truck
- Bottom Dump Trailer
- Combination
- Cementing Vehicle
- City Bus
- Commercial Pick-Up
- Concrete Pumper
- Construction Material Hauler
- Crash Fire Rescue (CFR)
- Mixer
- Demolition
- Drill Rig
- Dump
- Emergency Service
- Equipment Hauling
- Flatbed Trailer Hauler
- Flatbed Truck
- Fracturing Truck
- Front Loader
- Geophysical Exploration
- Hopper Trailer Combinations
- Landscaping Truck
- Liquid Waste Hauler
- Log Hauling
- Lowboy
- Michigan Special Gravel Trains
- Michigan Special Log Hauler
- Michigan Special Steel Hauler
- Michigan Special Waste Vehicle
- Municipal Dump
- Newspaper Delivery
- Package Delivery
- Pick-up and Delivery
- Rapid Intervention Vehicle (RIV)
- Rear Loader
- Recycling Truck
- Residential Pick-Up/Waste
- Rigging Truck
- Roll-Off
- Scrap Truck
- Semi-End Dump
- Sewer/Septic Vacuum
- Shuttle Bus
- Side Loader
- Snowplow/Snowblower
- Steel Hauling
- Tanker
- Tank Truck
- Tractors with Pole Trailers
- Tractor/Trailer with Jeeps
- Transfer Dump
- Transfer Vehicle
- Transit Bus
- Trolley
- Utility Truck
- Winch Truck

### HEAVY SERVICE TYPICALLY IS

- On/Off road vocations (10% or more off-road) OR
- Moderate to frequent starts/stops typically more than three (3) stops per mile



WABCO Components <sup>1</sup>	
Air Management	
Air Brake Valves	1/100/P&L
Air Compressors (ALL)2	
Air Dryers (ALL)	
Trailer Control Line Filter <sup>3</sup>	
Braking Systems	
ABS (Anti-Lock Braking System) Air	3/300/P&L
ABS (Anti-Lock Braking System) Hydraulic	2/200/P&L
Electronic Braking System (EBS)	3/300/P&L
Electronic Stability Control (ESC)	
Trailer ABS Valve <sup>3</sup>	
Roll Stability Control (RSS)	
Trailer Roll Stability Support (RSS)	
Driveline Suspension Control	
OptiRide® Electronically Controlled Air Suspension (ECAS)	2/200/P&L
Leveling Valves	1/100/P&L
Clutch Controls	2/200/P&L
Safety	
OnGuardACTIVE®	3/300/P&L
OnLane®	
OnLaneALERT®	
OnSide®	
Trailer SafeStart™	
Trailer TailGUARD™	
Telematics	
TrailerCAST™ Telematics Device	3/300/P&L
Wheel End Solutions	
EasyFit™ Slack Adjuster	2/200/P
MAXXUS™ Air Disc Brake	1/Unl/P&L
IVTM - Wheel Module	6/P
IVTM - All Other Products	2/P
Pan 22, 19 and 17 Air Disc Brake	1/Unl/P&L
Trailer MAXX22T™	1/Unl/P&L
TRISTOP™ D Actuator w/ IBV	3/Unl/P
TRISTOP™ D Actuator	2/200/P
UNISTOP™ Actuator	1/100/P

<sup>1</sup> ZF and WABCO branded components. <sup>2</sup> WABCO compressors installed on Cummins, Mercedes, and DDC engines are not warranted or serviced by ZF. Please contact your respective dealer/distributor of those engines for warranty and servicing. <sup>3</sup> An extended warranty of 4/400/P will apply when a WABCO Trailer Control Line Filter is used in combination with a WABCO Trailer ABS valve.

## WARRANTY - MODEL YEAR 2021 VEHICLES

## INDUSTRIAL/OFF-HIGHWAY SERVICE WARRANTY INFORMATION

INDUSTRIAL AND OFF-HIGHWAY SERVICE  
TYPICALLY IS

- Low mileage operation<sup>3</sup>
- Vehicles are not typically licensed for highway use

Market	Common Application Types
Agriculture	Fertilizer Spreader, Tractor, Heavy Duty Ag Trailers, Harvester, Sprayer, Skid Loader, Silage Bagger, Slurry Wagons, Grain Cart
Airport Support	Pushback Tractor, Towing Tugs, Aircraft Tow Tractor, Refueling Trucks, Food Service Trucks, Baggage Tractors, De-Icing Equipment, Runway Clearing Equipment
Construction	All-Terrain Crane, Rough Terrain Crane, Excavator, Compactor, Wheel Loader, Road Roller, Motor Grader, Articulated Dump Truck, Rubber Tire Road Roller, Backhoe Loaders, Haul Trucks, Scraper Rough Terrain Forklifts, Trenchers, Drills
Forestry	Logging Forwarder, Kidder, Loaders, Yard Forklifts, Harvesters Fellers
Material Handling	Port Tractor, Rail Yard Spotter, Stevedoring Tractor, Trailer Spotter, Yard Jockey, Scissor Lift, Straddle Carrier, Manlift, Forklift, Boom Lift Telehandlers, Aerial Work Platforms
Mining	Specialized Mining, Excavator, Haul Truck, Underground Loader, Service Trucks, Wheel Loaders, Scrapers, Load Haul Dumps, Personnel Transports, Bolters, Scalpers
Municipal	Street Sweeper, Utility Tractor, Utility Trucks, Tree Trimmers, Dump Trucks, Tow Trucks, Flat Bed Trucks, Winch Applications
Oil & Gas	Fracturing Trailer, Injector Heads, Top Drives, Jack/Lift Boats, Wireline Trucks, Load-On / Load-Off
Rail	Railcar Mover, Track Layers, Grinders, Platform Crane, Locomotive Railcars, Ballast Equipment, Winch Applications



WABCO Components <sup>1</sup>	
Air Management	
Air Brake Valves	2/Unl/P
Air Compressors (ALL) <sup>2</sup>	
Air Dryers (ALL)	
Brake Actuation	
Air/Hydraulic Actuators	2/Unl/P
Master Cylinders	
Remote Actuators	
Slave and Wheel Cylinders	
Two Fluid Actuators	
Brake Locks	
Brake Locks (ALL)	2/Unl/P
Electric Brake Locks	
Lever Locks	
Braking Systems	
ABS (Anti-Lock Braking System) Air	1/100/P&L
ABS (Anti-Lock Braking System) Hydraulic	
Driveline Suspension Control	
Clutch Controls	1/100/P&L
Leveling Valves	
Electrohydraulics & Controls	
Electronic Pedals	2/Unl/P
Electrohydraulic Brake Valves (EBV)	
Pressure Switches	
Hydraulic Braking Solutions	
Accumulator Charging Valves	2/Unl/P
Hydraulic Throttle Controls and Switches	
Modulating Brake Valves	
Wheel End Solutions	
EasyFit™ Slack Adjuster	2/200/P
Caliper Disc Brakes	2/Unl/P
MAXXUS™ Air Disc Brake	1/Unl/P&L
Multiple Disc Brakes	2/Unl/P
IVTM - Wheel Module	6/P
IVTM - All Other Products	2/P
Pan 22, 19 and 17 Air Disc Brake	1/Unl/P&L
TRISTOP™ D Actuator w/ IBV	3/Unl/P
TRISTOP™ D Actuator	2/200/P
UNISTOP™ Actuator	1/100/P

<sup>1</sup> ZF and WABCO branded components. <sup>2</sup> WABCO compressors installed on Cummins, Mercedes, and DDC engines are not warranted or serviced by ZF. Please contact your respective dealer/distributor of those engines for warranty and servicing. <sup>3</sup> Equivalent hours of service limit: 2,000 hours for all components.

## TERMS AND CONDITIONS

### COVERAGE EXCLUSIONS

#### PRODUCT DESCRIPTION

##### ALL PRODUCTS

This Warranty shall not apply to the following, but not limited to: (1) damage to the product or its component parts caused by incorrect use, installation, maintenance or repair, including without limitation (a) improper fit of mating components or brackets, damaged threads, cut, broken, chafed, pinched or otherwise damaged wiring (sensors, harnesses and connectors), (b) sensors damaged during removal when seized in block, or associated with sensor adjustments/ alignments, and (c) damage resulting from the use or installation of non-genuine WABCO components or materials; (2) damage to the product, its component parts, or diminished product or component part performance due to incorrect operation, deviation from approved conditions or misapplication; (3) any unauthorized disassembly of the product or its component parts including without limitation (a) obliterated, defaced or missing WABCO or WABCO name plate, serial numbers or label identifying the device as a ZF product or WABCO component, (b) changes to sealed adjusting screws, and (c) opening or attempted repair of non-serviceable components; (4) malfunction of the component due to internal contamination of the vehicle system including without limitation (a) water and other contamination damage that is due to the use of a non-genuine air dryer cartridge or (b) valve failures due to contamination in air system, (5) complaints associated with noise, (6) damage resulting from corrosion (including oxidation of electrical devices and connections).

##### AIR DRYERS

Mounting brackets (see vehicle OEM). Desiccant cartridge housing only.

##### AIR SYSTEM COMPONENTS

Normal wear items; Gladhand seals, dash valve knobs, valve actuation handles, treadles, pedals.

#### **ABS, ELECTRONIC STABILITY CONTROL (ESC), ROLL STABILITY CONTROL (RSC), OPTIRIDE®, ONGUARD® AND ONLANE®, COLLECTIVELY “ELECTRONICS”**

Failure of electronic components due to overvoltage condition, improper grounding, electrostatic discharge (ESD), improper shielding, electromagnetic interference (EMI), or other wiring or installation issues. Malfunctions and failure codes caused by other electronic subsystem failures (data bus, engine, transmission, dashboard, etc.)

##### HYDRAULIC COMPONENTS

For certain components, brake fluid DOT3 or DOT4 is used as the operating medium. Use of any other fluid will void all warranties associated with that component. For hydraulic braking applications the brake fluid is considered a maintenance item. Maintenance intervals are listed in TB-1367.

### COVERAGE LIMITATIONS

#### PRODUCT DESCRIPTION

##### ALL PRODUCTS

Any claim beyond 60 days from date of repair will not be accepted or honored under this warranty program.

Products purchased on an incomplete vehicle (glider) are limited to one year, 1/Unl/P.

For vehicles that operate full- or part-time outside of the United States and Canada, a 1-Year/Unlimited Miles parts only (1/Unl/P) will apply.

##### TOOLBOX PLUS™ DIAGNOSTIC SOFTWARE

Proper diagnostics of WABCO Electronics may require the latest version of TOOLBOX PLUS™. Additional labor due to use of an outdated version of TOOLBOX™ software and/or the time to purchase or install the latest version of TOOLBOX PLUS™ are not covered under product warranty.

## WARRANTY - MODEL YEAR 2021 VEHICLES

## TERMS AND CONDITIONS

## (1) What is Covered by this Commercial Warranty?

ZF CV Systems North America LLC and its North American subsidiaries and affiliates (ZF) warrant to the owner ("Owner") that the components listed in this publication, which have been installed by an Original Equipment Manufacturer ("OEM") as original equipment will be free from defects in material and workmanship. This warranty coverage begins from the original in-service date to the limits provided and runs concurrently with any warranties provided by OEMs and/or any distribution agreements and/or any service contracts that cover the components listed in this publication, if any. If the components listed in this publication are covered by an OEM warranty and/or service contract, then the OEM's warranty and/or service contract shall supersede ZF's warranty and Owner shall comply with all OEM's warranty and/or service contract requirements for claims under such OEM's warranty and/or service contract until those agreements expire. Once those agreements expire and provided the ZF warranty has not expired under the terms stated above, the ZF warranty will be in effect until its expiration date.

Warranty coverage ends at the expiration of the applicable time period from the date of vehicle purchase by the first Owner, or, the applicable mileage limitation, whichever occurs first. Duration of coverage varies by component and vocation as detailed previously in this publication. Some components are warranted for parts only and the Owner must pay any labor costs associated with the repair or replacement of the component. Other components are warranted for both parts and reasonable labor to repair or replace the subject component. Additional diagnostic time due to use of an outdated version of TOOLBOX™, time to purchase or install latest version of TOOLBOX™ are the responsibility of the authorized ZF distributor networks and are not covered under product warranty. Components installed as replacements under this warranty are warranted only for the remainder of the original period of time or mileage under the original warranty.

(2) Designation of Vocational Use Required. To obtain warranty coverage, each Owner must notify ZF through the OEM new truck and/or trailer dealer of the intended vocational use of the vehicle into which the WABCO components have been incorporated prior to the vehicle in-service date. This notification may be accomplished by registering the vehicle through your OEM new truck and/or trailer dealer or with ZF directly. Failure to notify ZF of (I) the intended vocational use of the vehicle or (II) a change in vocational use from that which was originally designated, will result in the application of a one year, unlimited mileage, parts only warranty (1/Unl/P) from the initial in-service date. A second Owner and each subsequent Owner must also notify ZF as to the intended vocational use of the vehicle. This notification can be sent directly to ZF or through

the OEM new truck and/or trailer dealer. The duration and mileage coverage of this warranty cannot exceed the coverage extended to the first Owner after his or her initial designation of vocational use. Coverage under ZF's warranty requires that the application of products be properly approved pursuant to OEM and ZF, approvals.

- (3) What is the Cost of this Warranty? There is no charge to the Owner for this warranty.
- (4) What is not Covered by this Warranty? In addition to the items listed on "Coverage Exclusions," this warranty does not cover normal wear and tear, or service items; nor does it cover a component that fails, malfunctions or is damaged as a result of (a) improper handling, storage, installation, adjustment, repair or modification including the use of unauthorized attachments or changes or modification in the vehicle's configuration, usage, or vocation from that which was originally approved by ZF, (b) accident, fire or other casualty, natural disaster, road debris, negligence, misuse, abuse, or improper use (including loading beyond the specified maximum vehicle weight or altering engine power settings to exceed the brake system capacity), or (c) improper or insufficient maintenance (including deviation from maintenance intervals, approved lubricants, or lube levels). This warranty does not cover any component or part that is not sold by ZF.
- (5) To obtain service. If the owner discovers within the applicable coverage period a defect in material or workmanship, the Owner must promptly give notice to either ZF or the dealer from which the vehicle was purchased. To obtain service, the vehicle must be taken to any participating OEM dealer or ZF distributor networks' servicer. The dealer or ZF authorized servicer will inspect the vehicle and contact ZF for an evaluation of the claim. When authorized by ZF, the dealer or ZF authorized servicer will repair or replace during the term of this warranty any defective WABCO component covered by this warranty.
- (6) Disclaimer of Warranty and Limitation of remedies. TO THE MAXIMUM EXTENT PERMITTED BY LAW, THE LIMITED WARRANTY SET FORTH HEREIN IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND/OR WARRANTY FOR HIDDEN OR LATENT DEFECTS, AND IN NO EVENT WILL ZF OR ANY OF ITS AFFILIATES BE LIABLE FOR DIRECT, INDIRECT, INCIDENTAL, PROGRESSIVE, SPECIAL, OR CONSEQUENTIAL DAMAGES OF ANY KIND.



- (7) Legal action. Any legal action or claim arising from or related to this Warranty, in contract or otherwise, must be commenced within one year from the accrual of that cause of action, or be barred forever. Any dispute arising in connection with this agreement shall be governed by and construed according to the laws of the State of Michigan and be brought, heard and determined exclusively in either the Circuit Court for the County of Oakland, State of Michigan or the United States District Court for the Eastern District of Michigan. The parties stipulate that the referenced venues are convenient.
- (8) Remedy. The exclusive remedy under this warranty shall be the repair or replacement of the defective component at ZF's option. ZF reserves the right to require that all applicable covered components are available and/or returned to ZF for review and evaluation. THE MAXIMUM LIABILITY, IF ANY, OF ZF FOR ALL DAMAGES, INCLUDING WITHOUT LIMITATION CONTRACT DAMAGES, BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, OR OTHER TORT, IS LIMITED TO AN AMOUNT NOT TO EXCEED THE PURCHASE PRICE OF THE PRODUCT and where indicated in the product and application warranty information above, the inclusion of labor is limited to the standard repair time. THE PARTIES ACKNOWLEDGE AND AGREE THAT THE LIMITATION OF DAMAGES PROVISION SET FORTH IN THIS PARAGRAPH SURVIVES BETWEEN THE ORIGINAL END USER AND ZF EVEN IF THE EXCLUSIVE REMEDY SET FORTH ABOVE IS DEEMED TO FAIL OF ITS ESSENTIAL PURPOSE. ZF may change the design or make improvements to its Products without incurring any warranty obligation for previously manufactured Product .
- (9) Entire Agreement. This is the entire agreement between ZF and the Owner about warranty and no, ZF employee, or dealer is authorized to make any additional warranty on behalf of ZF unless in writing and signed by an authorized representative of ZF.





**For further product details contact your distributor or the  
WABCO Customer Care Center at 855-228-3203.**

## **About ZF Friedrichshafen AG**

ZF is a global technology company and supplies systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. ZF allows vehicles to see, think and act. In the four technology domains Vehicle Motion Control, Integrated Safety, Automated Driving, and Electric Mobility, ZF offers comprehensive solutions for established vehicle manufacturers and newly emerging transport and mobility service providers. ZF electrifies different kinds of vehicles. With its products, the company contributes to reducing emissions and protecting the climate.

ZF, which acquired WABCO Holdings Inc. on May 29, 2020, now has 160,000 employees worldwide with approximately 260 locations in 41 countries. In 2019, the two then-independent companies achieved sales of €36.5 billion (ZF) and \$3.4 billion (WABCO). For more information, visit: [www.wabco-na.com](http://www.wabco-na.com)



# Fire and Rescue Apparatus

## Ten (10) Year Structural Integrity

### Custom Cab

# Limited Warranty

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The Pierce Custom Cab shall be free from structural failures caused by defects in material and workmanship
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Ten (10) Years - or - 100,000 Miles
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	This warranty applies only to the cab tubular support and mounting structures and other structural components of the cab of the vehicle model, as identified in the Pierce specifications for the Fire and Rescue Apparatus.  This warranty does not apply to damage caused by corrosion.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

#### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*





# Fire and Rescue Apparatus

## Ten (10) Year Pro-Rated Paint and Corrosion

### Cab

## Limited Warranty

### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Exterior surfaces of the cab painted by Pierce shall be free from blistering, peeling, corrosion or any other adhesion defect caused by defective manufacturing methods or paint material selection.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Ten (10) Years
Conditions and Exclusions:	<p>This limited warranty is applicable to the vehicle in the following percentage costs of warranty repair, if any:</p> <p><b>Topcoat Durability &amp; Appearance: Gloss, Color Retention &amp; Cracking</b>  0-72 months 100%  73-96 months 50%  97-120 months 25%</p> <p><b>Integrity of Coating System: Adhesion, Blistering/Bubbling</b>  0-36 months 100%  37-84 months 50%  85-120 months 25%</p> <p><b>Corrosion: Dissimilar Metal and Crevice</b>  0-36 months 100%  37-48 months 50%  49-72 months 25%  73-120 months 10%</p> <p><b>Corrosion Perforation</b>  0-120 months 100%</p> <p>This limited warranty applies only to exterior paint. Paint on the vehicle's interior is warranted only under the Pierce Basic One Year Limited Warranty.</p> <p>Items not covered by this warranty include:  (a) Damage from lack of maintenance and cleaning (proper cleaning and maintenance procedures are detailed in the Pierce operation and maintenance manual).  (b) UV paint fade.  (c) Any cab not manufactured by Pierce.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*



# Fire and Rescue Apparatus

## Five (5) Year Material and Workmanship

### Command Zone Electronics

# Limited Warranty

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Command Zone control modules shall be free from failures caused by defects in material and workmanship
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Five (5) Years
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	This limited warranty applies to all of the control modules for the Command Zone system, including the full color graphic displays. Related wire harnesses, cables and connectors are not covered under this limited warranty and are instead covered under the Pierce One Year Basic Apparatus Limited Warranty.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

#### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*



# Fire and Rescue Apparatus

## 54 Months Material and Workmanship

## Camera System

# Limited Warranty

### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	This limited warranty covers repairs to correct any defect related to materials or workmanship of the Sharpvision camera system installed on the apparatus occurring during the warranty period.
Warranty Begins:	The date of delivery.
Warranty Period Ends After:	Fifty - Four (54) months
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	This limited warranty does not apply to related wire harnesses, cables, and connectors, which are covered by the Pierce one (1) year basic apparatus limited warranty.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*

## NEW PRODUCT WARRANTY


**PARTICIPATING OEM SALES  
DISTRIBUTOR SALES**
**LIMITED WARRANTY ON NEW ALLISON AUTOMATIC TRANSMISSIONS  
USED IN EMERGENCY VEHICLE APPLICATIONS**

Allison Transmission will provide for repairs or replacement, at its option, during the warranty period of each new Allison transmission listed below that is installed in an Emergency Vehicle in accordance with the following terms, conditions, and limitations.

**WHAT IS COVERED**

- **WARRANTY APPLIES** — This warranty is for new Allison transmission models listed below installed in an Emergency Vehicle and is provided to the original and any subsequent owner(s) of the vehicle during the warranty period.
- **REPAIRS COVERED** — The warranty covers repairs or replacement, at Allison Transmission's option, to correct any transmission malfunction resulting from defects in material or workmanship occurring during the warranty period. Needed repairs or replacements will be performed using the method Allison Transmission determines most appropriate under the circumstances.
- **TOWING** — Towing is covered to the nearest Allison Transmission Distributor or authorized Dealer only when necessary to prevent further damage to your transmission.
- **PAYMENT TERMS** — Warranty repairs, including parts and labor, will be covered per the schedule shown in the chart contained in section "APPLICABLE MODELS, WARRANTY LIMITATIONS, AND ADJUSTMENT SCHEDULE."
- **OBTAINING REPAIRS** — To obtain warranty repairs, take the vehicle to any Allison Transmission Distributor or authorized Dealer within a reasonable amount of time and request the needed repairs. A reasonable amount of time must be allowed for the Distributor or Dealer to perform necessary repairs.
- **TRANSMISSION REMOVAL AND REINSTALLATION** — Labor costs for the removal and re-installation of the transmission, when necessary to make a warranty repair, are covered by this warranty.
- **WARRANTY PERIOD** — The warranty period for all coverages shall begin on the date the transmission is delivered to the first retail purchaser, with the following exception:

**Demonstration Service** - A transmission in a new truck or bus may be demonstrated to a total of 5000 miles (8000 kilometers). If the vehicle is within this limit when sold to a retail purchaser, the warranty start date is the date of purchase. Normal warranty services are applicable to the demonstrating Dealer. Should the truck or bus be sold to a retail purchaser after these limits are reached, the warranty period will begin on the date the vehicle was first placed in demonstration service and the purchaser will be entitled to the remaining warranty.

**APPLICABLE MODELS, WARRANTY LIMITATIONS, AND ADJUSTMENT SCHEDULE**

APPLICABLE MODELS	WARRANTY LIMITATIONS (Whichever occurs first)		ADJUSTMENT CHARGE TO BE PAID BY THE CUSTOMER	
	Months	Transmission Miles Or Kilometers	Parts	Labor
MT, MD 3000, 3200, 3500, 3700	0-24	No Limit	No Charge	No Charge
HT with Hydraulic Controls	0-24	No Limit	No Charge	No Charge
AT, 1000 Series™, 2000 Series™, 2400 Series™	0-36	No Limit	No Charge	No Charge
HT with Electronic Controls	0-60	No Limit	No Charge	No Charge
HD 1000 EVS, 2100 EVS, 2200 EVS 2350 EVS, 2500 EVS, 2550 EVS, 3000 EVS, 3500 EVS, 4000, 4000 EVS, 4500, 4500 EVS, 4700, 4700 EVS, 4800, 4800 EVS	0-60	No Limit	No Charge	No Charge

## WHAT IS NOT COVERED

- **DAMAGE DUE TO ACCIDENT, MISUSE, or ALTERATION** — Defects and damage caused as the result of any of the following are not covered:
  - Flood, collision, fire, theft, freezing, vandalism, riot, explosion, or objects striking the vehicle;
  - Misuse of the vehicle;
  - Installation into unapproved applications and installations;
  - Alterations or modification of the transmission or the vehicle, and
  - Damage resulting from improper storage (refer to long-term storage procedure outlined in the applicable Allison Service Manual)
  - Anything other than defects in Allison Transmission material or workmanship

**NOTE:** This warranty is void on transmissions used in vehicles currently or previously titled as salvaged, scrapped, junked, or totaled.

- **CHASSIS, BODY, and COMPONENTS** — The chassis and body company (assemblers) and other component and equipment manufacturers are solely responsible for warranties on the chassis, body, component(s), and equipment they provide. Any transmission repair caused by an alteration(s) made to the Allison transmission or the vehicle which allows the transmission to be installed or operated outside of the limits defined in the appropriate Allison Installation Guideline is solely the responsibility of the entity making the alteration(s).
- **DAMAGE CAUSED by LACK of MAINTENANCE or by the USE of TRANSMISSION FLUIDS NOT RECOMMENDED in the OPERATOR'S MANUAL** — Defects and damage caused by any of the following are not covered:
  - Failure to follow the recommendations of the maintenance schedule intervals applicable to the transmission;
  - Failure to use transmission fluids or maintain transmission fluid levels recommended in the Operator's Manual.
- **MAINTENANCE** — Normal maintenance (such as replacement of filters, screens, and transmission fluid) is not covered and is the owner's responsibility.
- **REPAIRS by UNAUTHORIZED DEALERS** — Defects and damage caused by a service outlet that is not an authorized Allison Transmission Distributor or Dealer are not covered.
- **USE of OTHER THAN GENUINE ALLISON TRANSMISSION PARTS** — Defects and damage caused by the use of parts that are not genuine Allison Transmission parts are not covered.
- **EXTRA EXPENSES** — Economic loss and extra expenses are not covered. Examples include but are not limited to: loss of vehicle use; inconvenience; storage; payment for loss of time or pay; vehicle rental expense; lodging; meals; or other travel costs.
- **"DENIED PARTY" OWNERSHIP** — Warranty repair parts and labor costs are not reimbursed to any participating or non-participating OEMs, dealers or distributors who perform warranty work for, or on behalf of, end users identified by the United States as being a "denied party" or who are citizens of sanctioned or embargoed countries as defined by the U.S. Department of Treasury Office of Foreign Assets Control. Furthermore, warranty reimbursements are not guaranteed if the reimbursement would be contrary to any United States export control laws or regulations as defined by the U.S. Department of Commerce, the U.S. Department of State, or the U.S. Department of Treasury.

## OTHER TERMS APPLICABLE TO CONSUMERS AS DEFINED by the MAGNUSON-MOSS WARRANTY ACT

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Allison Transmission does not authorize any person to create for it any other obligation or liability in connection with these transmissions.

**ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE APPLICABLE TO THESE TRANSMISSIONS IS LIMITED IN DURATION TO THE DURATION OF THIS WRITTEN WARRANTY. PERFORMANCE OF REPAIRS AND NEEDED ADJUSTMENTS IS THE EXCLUSIVE REMEDY UNDER THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY. ALLISON TRANSMISSION SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (SUCH AS, BUT NOT LIMITED TO, LOST WAGES OR VEHICLE RENTAL EXPENSES) RESULTING FROM BREACH OF THIS WRITTEN WARRANTY OR ANY IMPLIED WARRANTY.\*\***

\*\* Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

## OTHER TERMS APPLICABLE TO OTHER END-USERS

**THIS WARRANTY IS THE ONLY WARRANTY APPLICABLE TO THE ALLISON TRANSMISSION MODELS LISTED ABOVE AND IS EXPRESSLY IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ALLISON TRANSMISSION DOES NOT AUTHORIZE ANY PERSON TO CREATE FOR IT ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH TRANSMISSIONS. ALLISON TRANSMISSION SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM BREACH OF THIS WARRANTY OR ANY IMPLIED WARRANTY.**

## QUESTIONS

If you have any questions regarding this warranty or the performance of warranty obligations, you may contact any Allison Transmission Distributor or Dealer or write to:

Allison Transmission, Inc.  
P.O. Box 894  
Indianapolis, IN 46206-0894  
Attention: Warranty Administration PF-9



# Fire and Rescue Apparatus

## Five (5) Year Material and Workmanship - Transmission Oil Cooler Three (3) Year Collateral Damage Coverage

### Limited Warranty

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The transmission cooler shall be free from component or structural failures caused by defects in material and/or workmanship. Collateral damage up to \$10,000 per occurrence is available for the first three (3) years.
Warranty Begins:	The date of delivery to the first retail purchaser.
Warranty Period Ends After:	Five (5) Years on Oil Cooler and three (3) years on collateral damage coverage
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	<p>This warranty does not cover repair due to accidents, misuse, and excessive vibration, flying debris, storage damage (freezing), negligence or modification. This warranty is void if any modification or repairs are performed without authorization. This also voids any future warranty.</p> <p>This warranty does not cover cost of maintenance or repairs due to lack of required maintenance services as recommended. Performance of the required maintenance and use of proper fluids are the responsibility of the owner.</p> <p>Towing is covered to the nearest distributor or authorized dealer only when necessary to prevent further damage to your transmission.</p> <p>Labor costs for the removal and reinstallation of goods may be covered when necessary to make repairs. Please contact your OEM for authorization.</p> <p>Replacement of cooler during the warranty period is limited to 100% of reasonable labor costs up to a maximum of \$700 to remove, replace, or repair the oil cooler.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

#### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*





# Fire and Rescue Apparatus

## Fifteen (15) Year Structural Integrity

### Heavy Duty Rescue Body

# Limited Warranty

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	The apparatus body shall be free from structural failures caused by defects in material and workmanship
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Fifteen (15) Years - or - 100,000 Miles
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	This warranty applies only to the body tubular support and mounting structures and other structural components of the body of the vehicle model, as identified in the Pierce specifications for the Fire and Rescue Apparatus.  This warranty does not apply to damage caused by corrosion.

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

#### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*



## MANUFACTURER'S LIMITED WARRANTY - HYDRAULIC GENERATORS

### STANDARD

Harrison Hydra-Gen® (Seller) extends to the original purchaser (Buyer) of goods for use (whether it be an OEM, dealer, re-seller, or end-user) the following warranty covering the Harrison Hydra-Gen® Generator System, subject to the qualifications indicated. Harrison Hydra-Gen® Generator Systems shall consist of a Harrison generator tray assembly and its' components, a Harrison hydraulic pump assembly, and a Harrison supplied meter assembly; unless otherwise specified in below guidelines.

Harrison Hydra-Gen® warrants the original purchaser that the Generator System manufactured or supplied by Harrison Hydra-Gen® will be free from defects in materials and workmanship, provided such goods are:

1. Installed, operated and maintained in accordance with the Harrison Hydra-Gen® owner's manual, and/or written installation addendums.
2. Each new application has been reviewed and approved by the Harrison Hydra-Gen® Application Engineering Group.

### PERIOD OF WARRANTY

\*Two (2) years or 2000 hours of usage, whichever comes first, from the date the product is shipped from Harrison to the Installer.

**\*The END USER must complete and return to Harrison Hydra-Gen® the Harrison Hydra-Gen® Warranty Registration Card, Form WR-1, provided in the generator manual and provided online @ [www.harrisonhydragen.com](http://www.harrisonhydragen.com), within 45 days of delivery.**

**Warranty includes all parts and labor.** In addition, maintenance items that are contaminated or damaged by a proven warrantable failure are covered in years 1-2, and Labor time up to 4 hours, travel time up to 2.5 hours, and mileage up to 100 miles for warranty related repairs are covered.





Repair or replacement parts are warranted for ninety (90) days from date of purchase, excluding labor and travel expenses. Any part repaired or replaced during the warranty period assumes the remainder of the warranty or ninety (90) days, whichever is greater.

Only components supplied by Harrison Hydra-Gen® are covered under this warranty.

There is no other express warranty. Implied warranties, including merchantability and fitness for a particular purpose, are limited to periods set forth above and to the extent permitted by law. Any and all implied warranties are excluded. In no event is Harrison Hydra-Gen® liable for incidental or consequential damages.

The Buyer (OEM, dealer, re-seller, or end-user) must notify Harrison Hydra-Gen®, an Authorized Distributor, or a designated Harrison Hydra-Gen® Service Representative, **in writing**, within thirty (30) calendar days after goods or parts failed to meet this warranty.

The sole liability of Harrison Hydra-Gen® and the Buyer's sole remedy for a failure of goods under this warranty and for any and all other claims arising out of the purchase and use of the goods, including negligence on the part of the manufacturer, shall be limited to the repair or replacement of the product, at the option of Harrison Hydra-Gen®, of the parts that do not conform to this warranty, provided that the product or parts are returned to the Harrison Hydra-Gen® manufacturing facility.

A Returned Goods Authorization (RGA) is required for all products and parts being returned, and may be requested by phone, fax, email, or mail.

Failure to make timely delivery to Harrison Hydra-Gen® of the goods claimed to be defective shall void any warranty.

Unless previous written agreements have been made between the Buyer and Harrison Hydra-Gen®, the Buyer shall be responsible for all freight and shipping charges in connection with the delivery of the goods claimed to be defective, to Harrison Hydra-Gen® at its manufacturing facility, and the return of repaired or replacement goods to the Buyer.

If Harrison Hydra-Gen® determines that no warranty coverage is available for goods claimed to be defective, whether determination is based on the warranty being voided, the product failure

being due to a cause not covered by the warranty, the failure to make a timely and proper warranty claim, or otherwise, the Buyer shall have the option of either:

1. Having the goods not repaired and returned to the Buyer, freight collect.
2. Having the goods repaired, If Harrison Hydra-Gen® determines that the product is repairable, and returned to the Buyer, freight collect. The Buyer will be responsible for all costs associated with the repair and testing of the goods and shall authorize Harrison Hydra-Gen®, in writing, to have the goods repaired and tested by Harrison Hydra-Gen®.

The owner is obligated to operate and maintain the goods in accordance with the recommendations published by Harrison Hydra-Gen® in the owner's manual. The owner is responsible for the costs associated with such maintenance and any adjustments that may be required.

This warranty shall not apply to:

1. Damages or defects caused by normal wear, accident, misuse, abuse, abnormal operating conditions, negligence, corrosion, accident causes, or attributable to written specifications or instructions furnished by the installer.
2. Damages or defects caused by improper maintenance in accordance with the Harrison Hydra-Gen® product manuals and operating guidelines.
3. Damages caused by operator error.
4. Damages or defects caused by improper installation.
5. Damages or defects caused by inadequate water drainage provided by the installer in the area where the generator is installed or stored.
6. Damages or defects caused by inadequate air flow space or ventilation provided by the installer in the area where the generator is installed.
7. Any product or part altered or modified by the installer or service facility without written prior consent by Harrison Hydra-Gen®.
8. Cost of normal maintenance, adjustments, installation or start-up.
9. Normal wear items and components needing periodic maintenance such as rubber hoses and filters.
10. Excessive labor due to components being concealed in vehicle as a result of installation.
11. Water, road debris, excessive dirt, salt, abrasive particles, or large foreign objects found in the generator.
12. Telephone or other communications expense.
13. Paint, hydraulic fluid, and interconnecting hoses (internal or external to system assemblies).



This warranty gives you specific legal rights, and you may also have other rights that may vary from state to state or province to province.

No person is authorized to give any other warranties or to assume any other liabilities behalf of Harrison Hydra-Gen®, unless made or assumed in writing by an officer of Harrison Hydra-Gen®.

Contact Harrison Hydra-Gen® for questions regarding your warranty rights and responsibilities at (281) 807-4420; or visit our website at [www.harrisonhydragen.com](http://www.harrisonhydragen.com).



# Fire and Rescue Apparatus

## Ten (10) Year Pro-Rated Paint and Corrosion

### Custom Body

# Limited Warranty

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Exterior surfaces of the body shall be free from blistering, peeling, corrosion or any other adhesion defect caused by defective manufacturing methods or paint material selection.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Ten (10) Years
Conditions and Exclusions:	<p>This limited warranty is applicable to the vehicle in the following percentage costs of warranty repair, if any:</p> <p><b>Topcoat Durability &amp; Appearance: Gloss, Color Retention &amp; Cracking</b>  0-72 months 100%  73-96 months 50%  97-120 months 25%</p> <p><b>Integrity of Coating System: Adhesion, Blistering/Bubbling</b>  0-36 months 100%  37-84 months 50%  85-120 months 25%</p> <p><b>Corrosion: Dissimilar Metal and Crevice</b>  0-36 months 100%  37-48 months 50%  49-72 months 25%  73-120 months 10%</p> <p><b>Corrosion Perforation</b>  0-120 months 100%</p> <p>This limited warranty applies only to exterior paint. Paint on the vehicle's interior is warranted only under the Pierce Basic One Year Limited Warranty.</p> <p>Items not covered by this warranty include:  (a) Damage from lack of maintenance and cleaning (proper cleaning and maintenance procedures are detailed in the Pierce operation and maintenance manual).  (b) UV paint fade.  (c) Any cab not manufactured by Pierce.</p>

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

#### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*



# Fire and Rescue Apparatus

## Three (3) Year Material and Workmanship

### Goldstar® Gold Leaf Lamination

### *Limited Warranty*

#### 1. LIMITED WARRANTY

Subject to the limitations and exclusions set forth below, Pierce Manufacturing provides the following warranty to the Buyer:

Coverage:	Each Goldstar® gold leaf lamination shall be free from defects in material and workmanship.
Warranty Begins:	The date of the original purchase invoice (issued when the product ships from the factory).
Warranty Period Ends After:	Three (3) Years
Conditions and Exclusions:  See Also Paragraphs 2 thru 4	This warranty does not cover damage from lack of maintenance and cleaning (proper cleaning and maintenance procedures are detailed in the Pierce operation and maintenance manual).

This limited warranty shall apply only if the product is properly maintained in accordance with Pierce's maintenance instructions and manuals and is used in service which is normal to the particular model. Normal service means service which does not subject the product to stresses or impacts greater than normally result from careful use. If the Buyer discovers a defect or nonconformity, it must notify Pierce in writing within thirty (30) days after the date of discovery, but in any event prior to the expiration of the warranty period. THIS LIMITED WARRANTY MAY NOT BE ASSIGNED OR OTHERWISE TRANSFERRED BY THE BUYER TO ANY SUBSEQUENT USER OR PURCHASER OR TO ANY OTHER PERSON OR ENTITY.

Notwithstanding anything to the contrary herein, Pierce makes no warranty whatsoever as to:

(a) any integral parts, components, attachments or trade accessories of or to the product that are not manufactured by Pierce, including but not limited to engines, transmissions, drivelines, axles, water pumps and generators; with respect to all such parts, components, attachments and accessories, Pierce shall assign to Buyer the applicable warranties, if any, made by the respective manufacturers thereof;

(b) any vehicle, chassis, or component, part, attachment or accessory damaged by misuse, neglect, fire, exposure to severe environmental or chemical conditions, acidic environment, improper maintenance, accident, crash, or force majeure such as natural disaster, lightning, earthquake, windstorm, hail, flood, war or riot;

(c) any vehicle, chassis or component, part, attachment or accessory that has been repaired, altered or assembled in any way by any person or entity other than Pierce which, in the sole judgment of Pierce, adversely affects the performance, stability or purpose for which it was manufactured; or

(d) products or parts which may in the ordinary course wear out and have to be replaced during the warranty period, including, but not limited to, tires, fluids, gaskets and light bulbs. Pierce assumes no responsibility for the assembly of its parts or subassemblies into finishing products or vehicles unless the assembly is performed by Pierce.

The original purchaser may void this warranty in part or in its entirety if the product is repaired or replaced (a) without prior written approval of the Pierce Customer Service Department; or (b) at a facility which has not been approved by Pierce as to technical capability. Any repairs, modifications, alterations or aftermarket parts added after manufacture without the authorization of Pierce may void this warranty.

#### 2. DISCLAIMERS OF WARRANTIES

THE WARRANTY SET FORTH IN PARAGRAPH 1 IS THE SOLE AND EXCLUSIVE WARRANTY GIVEN BY PIERCE. PIERCE HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE.

#### 3. BUYER'S EXCLUSIVE REMEDY

If the product fails to conform to the warranty set forth in paragraph 1 during the warranty period, and such nonconformity is not due to misuse, neglect, accident or improper maintenance, Buyer must notify Pierce within the time period specified in paragraph 1, and shall make the product available for inspection by Pierce or its designated agent. At the request of Pierce, any allegedly defective product shall be returned to Pierce by Buyer for examination and/or repair. Buyer shall be responsible for the cost of such transportation, and for risk of loss of or damage to the product during transportation. Within a reasonable time, Pierce shall repair or replace (at Pierce's option and expense) any nonconforming or defective parts. Repair or replacement shall be made only by a facility approved in advance in writing by Pierce. THIS REMEDY SHALL BE THE EXCLUSIVE AND SOLE REMEDY FOR ANY BREACH OF WARRANTY.

#### 4. EXCLUSION OF CONSEQUENTIAL AND INCIDENTAL DAMAGES

Notwithstanding anything to the contrary herein or in any agreement between Pierce and Buyer, IN NO EVENT SHALL PIERCE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, INDIRECT, OR PUNITIVE DAMAGES WHATSOEVER, WHETHER ARISING OUT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE AND STRICT LIABILITY) OR OTHER THEORY OF LAW OR EQUITY, WITH RESPECT TO VEHICLES OR OTHER PRODUCTS SOLD BY PIERCE, OR THEIR OPERATION OR FAILURE TO OPERATE, OR ANY DEFECTS THEREIN, OR ANY UNDERTAKINGS, ACTS OR OMISSIONS RELATED THERETO, REGARDLESS OF WHETHER PIERCE HAS BEEN INFORMED OF THE POSSIBILITY OF ANY SUCH DAMAGES. Without limiting the generality of the foregoing, Pierce specifically disclaims any liability for property or personal injury damages, penalties, damages for lost profits or revenues, loss of vehicles or products or any associated equipment, cost of substitute vehicles or products, down-time, delay damages, any other types of economic loss, or for any claims by any third party for any such damages.

*Note: Any Surety Bond, if a part of the sale of the vehicle as to which this limited warranty is provided, applies only to this Pierce Basic One Year Limited Warranty for such vehicle, and not to other warranties made by Pierce in a separate document (if any) or to the warranties (if any) made by any manufacturer (other than Pierce) of any part, component, attachment or accessory that is incorporated into or attached to the vehicle.*

# **5 DEALER SUPPLIED PRODUCTS AND /OR SERVICES**

**Exhibit "D"**

## **PROPOSAL INTRODUCTION**

With over three decades of industry expertise, Golden State Fire Apparatus, Inc. (GSFA) proudly stands as the premier authorized dealership for top-tier fire apparatus in Central and Northern California. Our steadfast commitment to detail and customer satisfaction has earned us a trusted reputation among first responders.

We sincerely appreciate the opportunity to present this comprehensive proposal for a PIERCE MANUFACTURING, INC. VELOCITY HEAVY DUTY RESCUE. Your consideration of this proposal is greatly valued, and we are eager for the opportunity to support your department with the highest level of excellence and professionalism.

## **DEALER-SUPPLIED PRODUCTS AND SERVICES**

Golden State Fire Apparatus Inc. (GSFA) will furnish the following items and/or services before final delivery so that all necessary components and support are in place, contributing to an efficient final delivery process. Please refer to the detailed list below for a comprehensive overview of the products and/or services included:

## **AUTHORIZED MANUFACTURER**

In accordance with the State of California Vehicle Code, specifically Section 11701, it is mandated that "every manufacturer of a vehicle subject to registration shall make application to the Department of Motor Vehicles (DMV) for a license containing a general distinguishing number." The manufacturer, as of the proposal submission, holds a valid license in compliance with this requirement and is prepared to furnish a copy upon request. This adherence to regulatory standards ensures that the manufacturer maintains a current and official status, promoting transparency and compliance with legal requirements throughout the duration of the proposal and subsequent processes.

## **AUTHORIZED DEALERSHIP**

In compliance with the State of California Vehicle Code, specifically Section 11701, it is mandated that "a dealer in vehicles of a type subject to registration shall make application to the Department of Motor Vehicles (DMV) for a license containing a general distinguishing number." Golden State Fire Apparatus, Inc. possesses a valid license at the time of the bid, as detailed above, and can promptly provide a copy upon request. This adherence to regulatory standards ensures that the dealership maintains a current and official status, promoting transparency and compliance with legal requirements throughout the duration of the proposal and subsequent processes.

## **AUTHORIZED SALES REPRESENTATIVE**

In accordance with the State of California Vehicle Code, specifically Section 11800, it is expressly prohibited for any individual to function as a vehicle salesperson without obtaining a license issued by the Department of Motor Vehicles (DMV). The representative, at the time of

proposal, holds a valid vehicle salesperson's license and is ready to furnish a copy upon request. This adherence to regulatory standards ensures that the sales representative maintains a current and official status, promoting transparency and compliance with legal requirements throughout the bidding process and subsequent phases.

### **VEHICLE REGISTRATION**

In adherence to the State of California Vehicle Code Section 11739, it is mandated that the "dealer of a new motor vehicle sale is responsible for applying for the title, securing vehicle registration, and obtaining license plates for the Customer" through the Department of Motor Vehicles (DMV). Being a factory-authorized dealer of the vehicle being sold, Golden State Fire Apparatus, Inc. is duly authorized to register the vehicle with the State of California as a new vehicle manufacturer.

GSFA is committed to facilitating an excellent vehicle ownership experience for the customer. As such, we will manage all necessary applications and complete all transfer papers, including the application for California Exempt "E" license plates. This approach ensures compliance with regulatory requirements and a hassle-free registration process for our valued customers.

### **WEEKLY PROGRESS PHOTOGRAPHS**

GSFA is committed to ensuring transparency and comprehensive reporting throughout the construction process of the apparatus. To achieve this, GSFA will provide weekly photographs capturing various stages of the apparatus or major components under construction.

Commencing from the initiation of the manufacturing process, the photographic documentation will extend throughout the entire production phase by the manufacturer. These weekly reports will offer a visual representation of the ongoing progress of the apparatus, highlighting key milestones and showcasing unique features and aspects as construction unfolds.

Our focus is to provide customers with a clear and detailed insight into the evolution of the apparatus, fostering a deeper understanding of the craftsmanship and distinct elements incorporated during the construction process. This commitment to regular, visual updates aims to enhance communication and transparency regarding the progress of the apparatus.

### **CONTINGENCY RESERVE FUND**

A Contingency Reserve Fund amounting to \$50,000 per unit is incorporated into the quotation to address potential change orders, unforeseen items, or necessary work that may arise during the contract. The utilization of this reserve fund is at the sole discretion of the Customer. It is essential to note that this reserve fund is not an estimate for the aforementioned contingencies, and the actual costs associated with change orders, unforeseen items, or required work may surpass the reserved amount depending on their nature.



Any unused portion of the Contingency Reserve Fund will be credited back on the final invoice. Alternatively, if not credited, the remaining funds will be promptly returned to the Customer in the form of a check following the completion of the final invoicing process. This approach guarantees financial transparency and effective management throughout the project.

### **FIRE FIGHTING EQUIPMENT MOUNTING FUND**

A Fire Fighting Equipment Mounting Fund amounting to \$20,000 per unit is incorporated into the quotation and is specifically designated to cover the expenses associated with mounting of said equipment, adhering to the directives of the Customer.

In the event that the mounting costs surpass the stipulated allowance, any additional work required can be undertaken at the prevailing shop rate. Any unused portion of the Fire Fighting Equipment Mounting Fund will be credited back on the final invoice. Alternatively, if not credited, the remaining funds will be promptly returned to the Customer in the form of a check following the completion of the final invoicing process. This approach guarantees financial transparency and effective management throughout the project.

### **PRE-CONSTRUCTION, FACTORY VISIT**

A pre-construction trip to the manufacturing facility is included for four (4) Customer representatives. The primary objective of review and finalize, in detail, the specifications prior to the start of production. The pre-construction trip is anticipated to span four (4) days and three (3) nights, with scheduling details collaboratively determined between GSFA and the Customer.

GSFA will cover the costs associated with airfare, lodging, meals, and ground transportation during the stay at the manufacturer's location. Air travel will be arranged from one of the following airports: Sacramento, San Francisco, or San Jose.

It is important to note that certain costs, including Customer ground transportation within California, airport parking, luggage fees, and incidental expenses during travel to the factory, fall within the responsibility of the Customer. Furthermore, flight reservations are non-refundable, and in the event of a cancellation post-booking, the Customer will bear all associated costs, encompassing not only the original ticket cost but also any change or cancellation fees levied by the airline and/or travel agency. Additionally, flight reservations are non-transferable. This delineation aims to establish clarity and transparency regarding the allocation of responsibilities and potential costs associated with the pre-construction trip.

### **FINAL INSPECTION, FACTORY VISIT**

A final inspection trip to the manufacturing facility is included for four (4) Customer representatives. The primary objective of this visit is to ensure the adherence of the apparatus to specifications and promptly identify any potential deficiencies. The final inspection trip is

anticipated to span four (4) days and three (3) nights, with scheduling details collaboratively determined between GSFA and the Customer.

GSFA will cover the costs associated with airfare, lodging, meals, and ground transportation during the stay at the manufacturer's location. Air travel will be arranged from one of the following airports: Sacramento, San Francisco, or San Jose.

It is important to note that certain costs, including Customer ground transportation within California, airport parking, luggage fees, and incidental expenses during travel to the factory, fall within the responsibility of the Customer. Furthermore, flight reservations are non-refundable, and in the event of a cancellation post-booking, the Customer will bear all associated costs, encompassing not only the original ticket cost but also any change or cancellation fees levied by the airline and/or travel agency. Additionally, flight reservations are non-transferable. This delineation aims to establish clarity and transparency regarding the allocation of responsibilities and potential costs associated with the final inspection trip.

### **DELIVERY TO AUTHORIZED SERVICE FACILITY**

GSFA will deliver the apparatus to our Northern California facility located in Sacramento for a comprehensive dealer preparation inspection. This service, conducted at the expense of GSFA, aims to have the apparatus in optimal condition at the time of final delivery.

To ensure the proper break-in of all components while still under warranty, the apparatus will be delivered under its own power. The use of rail or truck freight for transportation is deemed unacceptable in order to uphold the highest standards of quality assurance during the delivery process. This approach not only aligns with warranty considerations but also emphasizes the commitment to delivering a fully operational apparatus to our valued customers.

### **PRE-DELIVERY SERVICE**

Before reaching its final destination, the apparatus undergoes a pre-delivery service conducted by Golden State Emergency Vehicle Service, Inc. This service is designed to tap into the expertise of an external source, providing an experienced perspective that enhances the thoroughness of your final inspection. Our pre-delivery service covers the following areas:

1. Engine Compartment and Undercarriage:
  - Inspect for broken mounting brackets.
  - Inspect and identify locations of any fluid leaks.
  - General inspection of hoses, wiring, and linkage, focusing on potential wear points.
  - Verify correct fluid capacities for engine oil, coolant, power steering fluid, washer reservoir fluid, transmission fluid, rear-end fluid, pump transmission oil, and primer oil if applicable.

- Re-torque U-bolts to OEM specifications if equipped with leaf spring suspension (Pierce Custom chassis only).
2. Interior:
    - Confirm proper operation of doors, windows, and locks, ensuring accurate adjustment.
    - Confirm proper operation of seatbelt alarms.
    - Confirm proper operation of all compartment door alarms, as well as hose bed cover, ladder rack, light tower, and deck gun alarms.
    - Ensure functionality of auxiliary power points, interior lighting, mirror, and seat controls, and if applicable - headsets and radios.
    - Inspect upholstery for quality and condition.
  3. Exterior:
    - Address reasonable paint scratches or chips.
    - Tighten any loose hardware.
    - Inspect tires and wheels, ensure proper pressure.
    - Check compartment doors for proper operation and latch fit.
    - Lubricate compartment door locks if applicable.
  4. Road Test:
    - Conduct a road test with a full water tank (if applicable), covering approximately twenty miles on both city and highway roads.
    - Perform a DOT compliant brake test to verify the system is holding air.
    - Inspect brake condition, wheel seals, and ensure drive train components reach optimal operating temperatures.
    - Conduct an Allison Transmission self-diagnostic to verify fluid level, fluid and filter life, and check for fault codes.
  5. Electrical:
    - Verify the operation of all lights, sirens, and other electrical accessories.
  6. Pump:
    - Operate the Pressure Governor or Relief Valve, transfer valve, and check pump shift.
    - Inspect water tank, pump and plumbing for leaks and calibrate the water level gauge.
    - Ensure smooth operation of all discharge, suction, and drain valves.
  7. Pierce Husky™ Foam System:

- If applicable, draft and inject clean water to ensure proper operation of the foam pump.
8. Fuel and DEF Tanks:
    - Fill the fuel tank and DEF tank prior to final delivery.
  9. Wash:
    - Thoroughly wash the apparatus prior to final delivery.

This pre-delivery service assists the apparatus to meet our high standards of quality and operational efficiency before reaching its final destination.

### **FINAL DELIVERY (CUSTOMER LOCATION)**

GSFA will deliver the completed Product, inclusive of any relevant equipment, spare parts, and supplies, to the Customer's specified address at GSFA's expense.

In preparation for the Product's delivery, the Customer is required to furnish GSFA with proof of liability and physical damage insurance. GSFA will withhold the release of the Product until such proof of insurance is provided.

To ensure a timely delivery process, it is incumbent upon the Customer to settle any outstanding balance owed to GSFA before or at the time the Product is completed and ready for delivery. In the event of delayed payment or delivery, GSFA reserves the right to impose a late fee and daily storage charge as outlined in the Standard Terms and Conditions until payment is received.

For compliance with insurance liability considerations, the Product will only be delivered upon full acceptance and full payment, or through a prior written agreement mutually reached between the Customer and GSFA. This ensures a secure and efficient finalization of the delivery process, aligning with both parties' obligations and safeguarding against potential liabilities.

### **COMPREHENSIVE SALES AND SERVICE SUPPORT**

At GSFA, we understand that immediate response is essential - and the service and support of your apparatus should be no different. Since our founding in 1989, our mission has been to provide first responders with the highest quality, most reliable fire and emergency apparatus from top-tier manufacturers. We specialize in guiding our customers through the entire process - from apparatus evaluation and customization to final inspection - and ensuring years of reliable service through our Golden State Emergency Vehicle Service (GSEVS) division.

#### **Golden State Emergency Vehicle Service (GSEVS)**

Established in 2014, GSEVS is committed to building long-term, collaborative relationships by providing exceptional warranty and technical support. Our services cover a wide range of needs, including chassis,

electrical systems, pump, aerial, routine maintenance, equipment mounting, and pump testing - with priority given to new units sold by GSFA. Our goal is to deliver prompt, professional service and unwavering support for your apparatus.

## Sacramento Facility

Our Sacramento location features a 33,814-square-foot facility with 14 working bays and a 4,500-square-foot, two-story parts distribution department. Conveniently located near Highway 99 with easy access to Interstates 80 and 50, we are positioned to serve you efficiently.

## Tracy Facility (Opening Fall 2025)

Our second location in Tracy will expand our service capacity with a 49,634-square-foot facility featuring 21 working bays and a parts department equal in size to our Sacramento facility. Strategically located within the "Tracy Triangle" - bordered by I-580, I-205, and I-5 - this facility will enhance our ability to serve customers in the Bay Area and beyond.

## Certified and Experienced Technicians

Our service team includes factory-trained professionals certified by Pierce, ASE, and EVT. They undergo regular training to stay current on chassis, electrical systems, and aerial devices, ensuring expert handling of any challenge. Whether it's routine maintenance or complex diagnostics, you can count on expert care and precision with every visit.

## Parts

At Golden State, we're dedicated to keeping your apparatus fully operational and mission-ready. That's why we maintain a robust inventory of both Pierce and non-Pierce parts—ready for immediate deployment when you need them most. If a part isn't in stock, we expedite orders directly from the manufacturer to minimize downtime and get your unit back in service without delay.

To make the process even more efficient, our digital Parts Request Portal offers a streamlined, user-friendly experience. It provides 24/7 access to submit requests, monitor order status, and communicate directly with our team—ensuring transparent updates and quicker turnaround times every step of the way.

## Mobile Service

To minimize emergency apparatus downtime, we offer a robust mobile service program for on-site repairs and maintenance.

## Pre-Delivery Inspection (PDI) Process

We employ a dedicated team of Pre-Delivery Inspection (PDI) technicians solely focused on ensuring your apparatus arrives in peak condition. Before your new custom unit is delivered, it undergoes a thorough, multi-point inspection to verify quality, performance, and compliance with all specifications. Our team handles every detail of the acceptance and delivery process—so you can take ownership with complete confidence and peace of mind.

## Your Single Source for Sales and Service

With Golden State Fire, you have a single point of contact for sales, service, and support - all under one roof, with two strategically located facilities to serve you better. We are confident that our combination

of expertise, customer service, and product support is unmatched by any other fire and emergency apparatus dealership in California.

**END OF EXHIBIT “D”**