



Date: **12/09/2019**
 ITB Number: **20190002**

**Invitation to Bid
 for
 Wadesboro Fire Department Ladder Truck Replacement
Schedule**

| DATE | EVENT |
|---|--|
| (a) 12/09/2019 | Issuance of Invitation to Bid ("ITB") by Town of Wadesboro ("Town"). |
| (b) 12/18/2019 by 5:00 PM | Submission of Written Questions Prior to Pre-Bid Conference. |
| (c) 12/20/2019 at 11:00 AM | Pre-Bid Conference – 205 E. Morgan St, Wadesboro NC 28170 |
| (d) 12/26/2019 by 5:00 PM | Submission of Written Questions After the Pre-Bid Conference. |
| (e) 01/03/2020 by 5:00 PM | Bid Submission. |
| (f) 01/06/2020 at 11:00 AM | Public Bid Opening- 205 E. Morgan St, Wadesboro, NC 28170 |
| (g) 02/03/2020 | Contract Award by Council. |
| (h) 07/03/2020 | Company delivers the product. |

Section 1: Instructions to Bidders

1.1 Review and Comply. The ITB consists of the following components:

Section 1: General instructions and special conditions that apply to this bid process and procurement.

Section 2: The forms that a Bidder is required to complete and return as its Bid (called the "Bid Response Forms")

Section 3: A contract substantially similar to the final contract the successful Bidder will be expected to sign, including **Exhibit A** and **Exhibit B**, the details for the entire scope of work falling under this ITB (the "Specifications").

Each reference to this ITB includes all components listed above as well as any addenda provided by the Town. Please review each section carefully. Bidders will be held accountable for having full knowledge of the contents of this ITB and for performing any due diligence that may be necessary to submit a binding Bid.

1.2 Definitions.

(A) *Bid* shall mean the response to this ITB completed on the Bid Response Forms.

(B) *Bid Response Forms* shall mean the forms attached hereto in **Section 2** and submitted as the response to this ITB.

(C) *Bidder* shall mean an individual or entity submitting a Bid to this ITB.

(D) *Town* shall mean the Town of Wadesboro.

(E) *Company* shall mean the successful Bidder.

(F) *Contract* shall mean the terms and conditions under which the Company shall provide the Work.

(G) *ITB* shall mean Invitation to Bid.

(H) *Procurement Manager* shall mean the Town employee identified in **Section 1.7** and who is responsible for the facilitation of this solicitation process.

(I) *Project Manager* shall mean the Town or Company employee who is the point of contact under this Contract.

(J) *Specifications* shall mean the scope and details of the Work that the Company will provide under the Contract.

(K) *Work* shall mean the actual products and/or services provided in compliance with the Specifications and under this Contract.

1.3 ITB Not an Offer. This ITB does not constitute an offer by the Town. No recommendations or conclusions from this bid process shall constitute a right (property or otherwise) under the Constitution of the United States or under the Constitution, case law, or statutory law of North Carolina.

1.4 Binding Offer. Each Bid submitted in response to this ITB constitutes a firm offer that is binding for ninety (90) days from the date of the Bid opening and must comply with all terms, conditions and requirements stated in this ITB, except to the extent the Bidder takes exception to such provisions in the manner required by **Section 1.13**.

- 1.5 Addendum.** Any changes to the terms, conditions or requirements of this ITB will be documented in written addendum issued by the Town. These addenda will be posted as detailed in **Section 1.7**. The receipt of each addendum must be acknowledged using the space provided on **Form 2** in **Section 2**. The Town may not consider any Bid that fails to acknowledge receipt of each issued addendum.
- 1.6 Pre-Bid Conference.** When a **Non-Mandatory** Pre-Bid Conference is scheduled, as reflected above, the meeting will be held at the Wadesboro Fire Department - 205 E. Morgan St, Wadesboro, NC 28170. Regardless of if the conference is mandatory or non-mandatory, all Bidders are encouraged to attend. If special accommodations are required for attendance, please notify the Procurement Manager as listed in **Section 1.7**.
- 1.7 Questions.** The Town is committed to providing all prospective Bidders with accurate and consistent information in order to ensure that no Bidder obtains an unfair competitive advantage. To this end, from the date of this ITB until the time of the Bid opening, no interpretation or clarification of the meaning of any part of this ITB will be made orally to any prospective Bidder with the exception of questions answered at any pre-bid conference. Requests for information or clarification of this ITB must be made in writing and addressed to the Procurement Manager at the address, or email listed below, with email being the preferred method of communication. Questions should reference the ITB page and topic number. All Questions must be submitted by the dates referenced in the schedule on the first page of this ITB.

Town of Wadesboro
Attn: Town Manager
ITB # [Insert ITB Number]
PO Box 697
Wadesboro, NC 28170
Email: wadesboromanager@windstream.net

The Town will post answers to timely submitted questions posed by prospective Bidders and other information concerning this ITB on the Town's Advertisements for Bids and Proposals website, located at the address below. ITB information can be accessed by searching the website for the ITB number listed on the first page of this ITB.

www.townofwadesboro.org/public-notices.html

It is the responsibility of the prospective Bidder to check the website for any addenda issued for this ITB. The Town reserves the right to disqualify any prospective Bidder who contacts a Town employee, or agent concerning this ITB, other than in accordance with this Section.

- 1.8 How to Prepare Bid Responses.** All Bids shall be prepared as follows:
- (A) Complete all forms provided in **Section 2**. All responses must be submitted solely on these forms.
 - (B) Bid responses must be typewritten or completed in ink, signed by the Bidder or the Bidder's authorized representative. All erasures or corrections must be initialed and dated by the authorized representative who signs the Bid forms on behalf of the Bidder.
 - (C) Bids must be accompanied by accurate descriptions of the exact materials, supplies, vehicles and/or equipment offered for purchase, including any detailed information as requested in **Exhibit A** of the Contract, located in **Section 3** of this ITB.

1.9 How to Submit Bid Responses. All Bidders shall:

(A) Submit their Bid in a sealed opaque envelope with the following information written on the outside of the envelope:

- (1) The Bidder's company name;
- (2) The ITB number as indicated on the first page of this ITB; and
- (3) Identification of the Work for which the Bid is submitted as indicated on the first page of the ITB

(B) Mail or deliver one (1) unbound original Bid signed in ink by a company official authorized to make a legal and binding offer and two (2) copies plus one (1) electronic copy on a CD or Flash Drive in PDF or Word format to the address listed below, by the date and time listed in the schedule on the first page of this ITB. Any Bid not submitted per the requirements of this Section will be considered non-responsive and will not be considered.

Mail or Deliver to:
Town of Wadesboro
Attn: Town Manager
ITB # [Insert ITB Number]
PO Box 697
Wadesboro, NC 28170

1.10 Guarantor. If the Bidder is a subsidiary of another entity, the Town requires that the Bidder's parent entity provide a guarantee of payment of all of the Bidder's obligations under the Contract. The Town also may require from any Bidder a guaranty from another entity, other than the parent, where applicable, if the Town concludes that such guaranty would be beneficial to protect the Town's interest. If a guarantor is required, the Bidder must: (a) identify a guarantor that is acceptable to the Town, (b) provide the Town with the same financial information about the guarantor that the Bidder is required to provide about itself under this ITB; and (c) provide the Town with a signed, legally binding guaranty agreement from the approved guarantor that is acceptable to the Town in its sole discretion. Failure to comply with the foregoing shall be grounds for rejection of the Bidder's Bid.

1.11 Prompt Payment Discounts. Bidders are urged to compute all discounts into the price offered. If a prompt payment discount is offered, it will not be considered in the award of the Contract except as a factor to aid in resolving cases of identical prices.

1.12 Ownership and Public Record. All Bids and supplementary material provided as part of this process will become property of the Town upon submission. Bidders are advised that all information included in the materials provided may become available to the public under North Carolina's Public Records Law except for information that falls under one or more of the statutory exceptions set forth in Chapter 132 and 66-152 *et seq.* of the North Carolina General Statutes. Bidders may only designate information confidential that it, in good faith, considers a trade secret or confidential under North Carolina public records and trade secret law. However, the City reserves the right to review and make any final determination on if any material submitted is in fact protected by an exception to North Carolina's public record law. In submitting a Bid, each Bidder agrees that the Town may reveal any trade secrets or confidential information to Town staff, consultants or third parties assisting with this ITB and resulting Contract. Where information is marked Trade Secret, Bidder agrees to indemnify and hold harmless the City and each of its officers,

employees and agents from all costs, damages and expenses incurred in connection with refusing to disclose any material which Bidder has designated as a trade secret or confidential.

1.13 How to Submit an Exception. If the Bidder wants to take an exception to the Specifications as stated in **Exhibit A** or **Exhibit B** to the Contract included in **Section 3** of this ITB, the Bidder must clearly identify in **Form 3** each of the following:

- (A) the number and title of each section of the Specifications that the Bidder takes exception to;
- (B) the specific sentence within such section that the Bidder takes exception to; and
- (C) any alternative provision proposed by the Bidder. Bidders are reminded that a material variance from the terms of this ITB may result in the Bid being rejected by the Town.

1.14 How to Submit an Objection. When a Bidder has an objection to the terms and conditions of this ITB or to the Contract as included in **Section 3**, the Bidder may submit such objection by doing the following:

- (A) When a pre-bid conference is scheduled, the Bidder should either present their objection at that time (either verbally or in writing), or submit a written objection prior to the scheduled pre-bid conference.
- (B) When a pre-bid conference is not scheduled, Bidders must submit objections in writing no later than the deadline to submit questions as stated in the scheduled on the first page of this ITB.
- (C) Except for objections raised at the pre-bid conference, all objections must be directed to the Procurement Manager.
- (D) Failure to object in the manner specified in this Section shall constitute a waiver of any objections the Bidder may have to the terms and conditions or to anything that occurred during this ITB process.

1.15 No Collusion or Conflict of Interest. By responding to this ITB, the Bidder shall be deemed to have represented and warranted that the Bid is not made in connection with any competing Bidder submitting a separate response to this ITB, and is in all respects fair and without collusion.

1.16 Town's Rights and Options. Town reserves the following rights, which may be exercised at the sole discretion of the Town Manager, or his designee:

- (A) to supplement, amend, substitute or otherwise modify this ITB at any time;
- (B) to cancel this ITB with or without the substitution of another ITB;
- (C) to take any action affecting this ITB, the ITB process, or the Work or facilities subject to this ITB that would be in the best interest of the Town;
- (D) to issue additional requests for information;
- (E) to require one or more Bidders to supplement, clarify or provide additional information in order for the Town to evaluate the Bids submitted;
- (F) to conduct investigations with respect to the qualifications and experience of each Bidder;
- (G) to change the Bid opening date or any other dates relevant to the ITB;

(H) to waive any defect or irregularity in any Bid received;

(I) to reject any or all Bids;

(J) to enter into any agreement deemed to be in the best interest of the Town, with one or more of the Bidders responding.

1.17 Equal Opportunity. The Town has an equal opportunity purchasing policy that seeks to ensure that all segments of the business community have access to supplying the goods and services needed by Town programs. The Town provides equal opportunity for all businesses and does not discriminate against any Bidders regardless of race, color, religion, age, sex, national origin or disability.

1.18 Award Criteria. The Town reserve the right to award a Contract to the lowest responsive responsible Bidder taking into consideration vendor qualification and experience, quality, delivery, workmanship, services, facility requirements, inventory control and reporting. The Town reserves the right to reject any Bid, without limitation, on the basis of function, compatibility with user requirements, utility and cost.

1.19 Bids on All or Part. Unless otherwise specified by the Town or by the Bidder, the Town reserves the right to make award on all or part of the items to be purchased or the services needed. Bidders may restrict their bids to consideration in the aggregate by so stating in the Bid. However, bids restricted to consideration in the aggregate must also include a unit price on each item bid.

1.20 Multiple Contract Awards. The Town reserves the right to award multiple contracts for the Work required by this ITB if the Town deems multiple contracts to be in its best interest.

1.21 Anti-lobbying Provision. Except for clarifying written questions sent to the Town, all Bidders, including any and all persons acting on their behalf, are strictly prohibited from contacting Town staff on or regarding any matter relating to this ITB from the time the ITB is issued until the after the Bid opening.

The Town reserves the right to disqualify any Bidder who contacts Town staff concerning this ITB other than in accordance with this ITB.

1.22 Contract Award by Town Council. As soon as practical after opening the Bids, the name of the apparent successful Bidder will be submitted to the Town Council for final approval and award. Prior to the recommendation to the Town Council, the successful Bidder must provide to the Town an executed Contract which will be substantially similar to the contract in **Section 3** of this ITB. Upon approval of the Contract by Town Council, the Town will execute the documents and send a copy to the successful Bidder. In the event that Council approval is not received within ninety (90) days after opening of the Bids, the successful Bidder may request that it be released from the Bid.

1.23 Post Award Conference. A post-award conference may be scheduled as soon as practical after the award of the Contract. The Company shall attend the conference along with the Company's prospective Project Manager and any anticipated major subcontractors, and shall provide at such conference a written schedule for the delivery of any Work for which no delivery dates have been specified in this ITB. The Company shall provide at least two (2) local telephone numbers that may be used to contact the Company's authorized representative in the event of an emergency after normal business hours.

- 1.24 Notice to Proceed.** The successful Bidder shall not commence work or make shipment under this ITB until duly notified by receipt of the executed Contract from the Town. If the successful Bidder commences work or makes shipment prior to that time, such action is taken at the Bidder's risk, without any obligation of reimbursement by the Town.
- 1.25 Options and Accessories.** The Town may in its discretion purchase from the successful Bidder options and accessories beyond what is called for in **Exhibit A** to the Contract in **Section 3** of this ITB, provided that such purchase does not create unfairness so as to defeat the purpose of the bid statutes.
- 1.26 E-Verify.** Where applicable, the successful bidder must agree to meet the E-Verify requirements as set forth in the sample contract below.
- 1.27 Iran Divestment Act.** Where applicable, the successful bidder must certify that it meets the Iran Divestment Act requirements as set forth in the sample contract below.
- 1.28 Title VI Solicitation Notice.** The Town, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

Section 2: Bid Response Forms

FORM ONE

BIDDER SUBMISSION FORM

ITB #: 20190002 - Wadesboro Fire Department Ladder Truck Replacement

This Bid is submitted by:

Company Name: _____

Representative (printed): _____

Address: _____

City/State/Zip: _____

Telephone: _____

(Area Code) Telephone Number

Facsimile: _____

(Area Code) Fax Number

E-Mail Address: _____

State of Incorporation: _____

Business Type:

Corporation

Partnership

Sole Proprietorship

Joint Venture

Limited Liability Corporation

Other (Specify)

It is understood by the Bidder that the Town reserves the right to reject any and all Bids, to make awards on all items or on any items according to the best interest of the Town, to waive formalities, technicalities, to rescind and re-bid this ITB. Bids are valid for ninety (90) calendar days from Bid opening.

Company Name

Date

Authorized Signature

Please type or print name

FORM TWO
ADDENDUM ACKNOWLEDGEMENT
ITB #: 20190002 - Wadesboro Fire Department Ladder Truck Replacement

Bid Submission Check List: Confirm by placing a check mark in the space provided that as the Bidder the information listed below has been reviewed and compiled with in the submission of a response to this ITB.

(A) _____ Addenda acknowledgement. Please contact the Town Manager to verify the number of addenda issued via email at wadesboromanager@windstream.net.

Addenda Receipt: The following confirms receipt of any and all addenda issued for this ITB:

| Addendum # | Date Issued |
|------------|-------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

(B) _____ Bid document has been signed by authorized Bidder official.

(C) _____ Bid package has been properly labeled per the instructions. (See Section 1.8)

(D) _____ Bid Response Package Forms

1. Bid Submission - Form One
2. Addenda Acknowledgement - Form Two
3. Exceptions Form – Form Three
4. Pricing - Form Four
5. Non-Discrimination Certification - Form Five
6. References – Form Six
7. CBI/DBE Forms – Form Seven (where applicable)

The signature below certifies the Bid response complies with the requirements of this ITB and that the above items A through D have been verified as complete. The Bidder further represents that it has read and can comply with all terms of the Contract, including without limitation, the insurance requirements.

Company Name

Date

Authorized Signature

Please type or print name

FORM THREE EXCEPTIONS FORM

ITB #: 20190002 - Wadesboro Fire Department Ladder Truck Replacement

All Work requested in the ITB must be provided for the price(s) set forth in the **Form 4**, in strict conformance with the terms, conditions and specifications set forth in the ITB (including any addenda or amendments), subject only to the exceptions stated in the chart below. Exceptions representing material changes to the ITB's terms are grounds for rejection of the Bid. List any exceptions taken to the ITB terms or the general specifications provided in **Exhibit A** in **Section 3**. For each exception, provide an explanation. If none, state "None".

| ITB Section Number | ITB Section Title | Exception and Proposed Change to ITB |
|--------------------|-------------------|--------------------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

The signature below certifies that: (a) the Bid complies with the requirements of this ITB; and (b) that the Bidder takes no exception to the terms of the ITB other than those listed in the chart contained in this Form.

Company Name

Date

Authorized Signature

Please type or print name

**FORM FOUR
PRICING SHEET**

ITB #: 20190002 - Wadesboro Fire Department Ladder Truck Replacement

Instructions:

- If your bid includes price increases over the term of the Contract, such increases must be clearly designated below.
- In case of error in extension of prices in the bid, the unit prices, where available, shall govern.
- If Bidder takes any exceptions to the ITB or Contract, pricing below must reflect the requested items as stated in the Specifications and as if the exceptions were not accepted by the City. However, please include as a separate section any cost savings provided if the exceptions are accepted by the City.

The undersigned proposes to furnish the following items in strict conformance to the Specifications and the ITB.

| |
|--------------------------------|
| ITEM 1 – Fire Apparatus |
| \$ |

The undersigned hereby certifies the Bidder has read the terms of this ITB and is authorized to bind the firm to the information herein set forth. Further the Bidder certifies that in connection with this procurement:

1. The prices in this bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other Bidder or with any competitor;
2. The bid pricing conforms with the requirements set forth in the Pricing section located in Exhibit A.
3. Unless otherwise required by law, the Bidder has not knowingly disclosed the prices that have been quoted in this bid directly or indirectly to any other Bidder or to any competition prior to the opening of the bid; and
4. No attempt has been made or will be made by the Bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition.

Company Name

Date

Authorized Signature

Please type or print name

**FORM FIVE
NON-DISCRIMINATION PROVISION
FOR ALL TOWN CONTRACTS**

ITB #: 20190002 - Wadesboro Fire Department Ladder Truck Replacement

The undersigned Bidder hereby certifies and agrees that the following information is correct:

1. In preparing the enclosed Bid, the Bidder has considered all bids submitted from qualified, potential subcontractors and suppliers, and has not engaged in discrimination as defined in Section 2 below.
2. For purposes of this Section, discrimination means discrimination in the solicitation, selection, or treatment of any subcontractor, vendor or supplier on the basis of race, ethnicity, gender, age or disability or any otherwise unlawful form of discrimination. Without limiting the foregoing, discrimination also includes retaliating against any person or other entity for reporting any incident of discrimination.
3. Without limiting any other remedies that the Town may have for a false certification, it is understood and agreed that, if this certification is false, such false certification will constitute grounds for the Town to reject the Bid submitted with this certification, and terminate any contract awarded based on such Bid.
4. As a condition of contracting with the Town, the Bidder agrees to promptly provide to the Town all information and documentation that may be requested by the Town from time to time regarding the solicitation and selection of suppliers and subcontractors in connection with this solicitation process. Failure to maintain or failure to provide such information shall constitute grounds for the Town to reject the Bid and to any contract awarded on such Bid.
5. As part of its bid or proposal, the Bidder or Proposer shall provide to the Town a list of all instances within the past ten years where a complaint was filed or pending against Bidder or Proposer in a legal or administrative proceeding alleging that Bidder or Proposer discriminated against its subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

Company Name

Date

Authorized Signature

Please type or print name

**FORM SIX
REFERENCES**

BID #: 20190002 - Wadesboro Fire Department Ladder Truck Replacement

List three (3) clients excluding Town of Wadesboro staff, for whom you have provided services similar to those outlined in this Invitation to Bid, for reference check. Additional references, including Town of Wadesboro Staff, may be included on a second form.

| | |
|-------------------|--|
| NAME OF FIRM: | |
| ADDRESS OF FIRM: | |
| CONTACT PERSON: | |
| TELEPHONE NUMBER: | |
| E-MAIL ADDRESS: | |
| NAME OF FIRM: | |
| ADDRESS OF FIRM: | |
| CONTACT PERSON: | |
| TELEPHONE NUMBER: | |
| E-MAIL ADDRESS: | |
| NAME OF FIRM: | |
| ADDRESS OF FIRM: | |
| CONTACT PERSON: | |
| TELEPHONE NUMBER: | |
| E-MAIL ADDRESS: | |

Section 3: Sample Contract

STATE OF NORTH CAROLINA

Contract # 20200001

COUNTY OF ANSON

CONTRACT TO PROVIDE
FIRE APPARATUS

THIS CONTRACT is entered into on the _____, by and between _____ (the "Contractor" or "contractor"), and the Town of Wadesboro, a municipal corporation of the State of North Carolina, (the "Town" or "town" or "Owner" or "owner");

STATEMENT OF BACKGROUND AND INTENT

A. The Town on behalf of itself issued an Invitation to Bid (ITB # 20190002) dated DECEMBER 9, 2019 requesting Bids from qualified firms to provide the Town with a Fire Apparatus, hereafter referred to as ("Products"). This Invitation to Bid, together with all attachments and any amendments, is referred to herein as the "ITB."

B. The Company submitted a Bid in response to ITB # 20190002 on _____. This Bid, together with all attachments and separately sealed confidential trade secrets, is referred to herein as the "Bid."

C. The Town awarded this Contract on _____ to the Company to provide Fire Apparatus to the Town all in accordance with the terms and conditions set forth herein.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and in further consideration of the covenants and conditions contained in this Contract, the parties agree as follows:

1. **INCORPORATION OF EXHIBITS.** The following exhibits are attached to this Contract and incorporated into and made a part of this Contract by reference:

Exhibit A: Pricing Sheet (Bid Response Form 4 as submitted by the Company)

Exhibit B: Specifications (Section 3 of the ITB and all addenda thereto, marked to show any exceptions taken by the Company in its Bid)

Exhibit C: Bid Response Forms (the Bid Response Forms contained in Section 2 of the ITB and submitted by the Company, except for Form 4, the Pricing Sheet)

Each reference to this Contract shall be deemed to include all Exhibits. With the exception of Exhibit D (Federal Contract Terms and Conditions), any conflict between language in an Exhibit to this Contract and the main body of this Contract shall be resolved in favor of the main body of this Contract. Notwithstanding anything contained

in this Contract or any Exhibit to the contrary, in the event of a conflict between the language of Exhibit D and the main body of this Contract or any other Exhibit to this Contract, the language of Exhibit D shall prevail. Each reference to (insert company name) in the Exhibits and Appendices shall be deemed to mean the Company.

2. DEFINITIONS.

(L) *Bid* shall mean the response to this ITB completed on the Bid Response Forms.

(M) *Bid Response Forms* shall mean the forms attached hereto in Section 2 and submitted as the response to this ITB.

(N) *Bidder* shall mean an individual or entity submitting a Bid to this ITB.

(O) *Town* shall mean the Town of Wadesboro.

(P) *Company* shall mean the successful Bidder.

(Q) *Contract* shall mean the terms and conditions under which the Company shall provide the Work.

(R) *ITB* shall mean Invitation to Bid.

(S) *Procurement Manager* shall mean the Town employee identified in Section 1.7 and who is responsible for the facilitation of this solicitation process.

(T) *Project Manager* shall mean the Town or Company employee who is the point of contact under this Contract.

(U) *Specifications* shall mean the scope and details of the Work that the Company will provide under the Contract.

(V) *Work* shall mean the actual products and/or services provided in compliance with the Specifications and under this Contract.

3. TERM. The initial term of this Contract will be for the one-time purchase of fire apparatus, with a period of completion not to exceed six months from Contract award. Any extensions or exceptions must be approved in writing by the Town and may result in the nullification of this Contract.

4. COMPENSATION. The Company shall provide the Work in accordance with the Specifications set forth in Exhibit A to this Contract. The Town shall pay the Company

for the Goods delivered in compliance with the Specifications and at the prices set forth in Exhibit B. The Company shall not be entitled to charge the Town any prices, fees or other amounts that are not listed in Exhibit B.

5. **BILLING.** Each invoice sent by the Company shall reference the appropriate contract number, purchase order (PO) number and PO line number for each item on the invoice.

All invoices must include all reports, information and data required by this Contract (including the Exhibits) necessary to entitle the Company to the requested payment. Invoices shall be provided by the Company to the Town at the frequency set forth in **Exhibit A** or where the exhibit is silent, invoices should be submitted monthly. The Company shall send one (1) copy only of each invoice to: acctspayable@windstream.net with copy to rsm2011@windstream.net.

The Town is not tax exempt from sales tax. The Company shall include all applicable State and County sales taxes on the invoice and not combined with the cost of the services.

Payment of invoices shall be due within thirty (30) days after the Town has received all of the following: (a) an accurate, properly submitted invoice, (b) all reports due for the month covered by the invoice; and (c) any other information reasonably requested by the Town to verify the charges contained in the invoice. Any exceptions to this requirement must be mutually agreed upon by both parties.

6. **GENERAL WARRANTIES.** The Company represents and warrants that:

6.1 It is a legal entity, validly existing and in good standing under the laws of the State of North Carolina, and is qualified to do business in North Carolina;

6.2 It has all the requisite corporate power and authority to execute, deliver and perform its obligations under this Contract;

6.3 The execution, delivery, and performance of this Contract have been duly authorized by Company;

6.4 No approval, authorization or consent of any governmental or regulatory authority is required to be obtained or made by it in order for it to enter into and perform its obligations under this Contract;

6.5 The Company shall not violate any agreement with any third party by entering into or performing this Contract.

6.6 The Work shall comply with all requirements set forth in this Contract, including but not limited to the attached Exhibits;

6.7 The Company guarantees the materials and workmanship on all materials and services provided under the Contract and that it will fix any defects at its own expense that are discovered during the guarantee period at the time designated by and to the satisfaction of the Town;

6.8 All work performed by the Company and/or its subcontractors pursuant to this Contract shall meet industry accepted standards, and shall be performed in a professional and workmanlike manner by staff with the necessary skills, experience and knowledge; and

6.9 The Work provided by the Company under this Contract will not infringe or misappropriate any patent, copyright, trademark or trade secret rights of any third party.

7. ASSIGNMENT AND SUBCONTRACTING.

Neither the Contractor nor the Town shall sell, transfer, subcontract, assign or otherwise dispose of the Contract or any portion thereof, or of this right, title or interest therein or his obligations thereunder, without the written consent of the other party.

8. INDEMNIFICATION. The Company shall indemnify, defend and hold harmless the Town and the Town's officers, agents and employees from and against any and all claims, losses, damages, obligations, liabilities and expenses, including but not limited to attorneys' fees, arising out of or resulting from Company's performance, or allegations thereof, under this Contract, except to the extent that the claims, losses, damages, obligations, liabilities and expenses are caused by the sole negligence of the Town, or the Town's officers, agents and employees. Such liabilities shall include those arising from a violation of any federal, state or local law, regulation or ordinance by the Company or any of its subcontractors (including without limitation E-Verify or other immigration laws as applicable).

9. TERMINATION.

a. TERMINATION WITHOUT CAUSE. The Town may terminate this Contract at any time without cause by giving thirty (30) days written notice to the Company.

b. TERMINATION FOR DEFAULT BY EITHER PARTY. By giving written notice to the other party, either party may terminate this Contract upon the occurrence of one or more of the following events:

- i. The other party violates or fails to perform any covenant, provision, obligation, term or condition contained in this Contract, provided that, unless otherwise stated in this Contract, such failure or violation shall not be cause for termination if both of the following conditions are satisfied: (i) such default is reasonably susceptible to cure; and (ii) the other party cures such

default within thirty (30) days of receipt of written notice of default from the non-defaulting party; or

- ii. The other party attempts to assign, terminate or cancel this Contract contrary to the terms hereof; or
- iii. The other party ceases to do business as a going concern, makes an assignment for the benefit of creditors, admits in writing its inability to pay debts as they become due, files a petition in bankruptcy or has an involuntary bankruptcy petition filed against it (except in connection with a reorganization under which the business of such party is continued and performance of all its obligations under this Contract shall continue), or if a receiver, trustee or liquidator is appointed for it or any substantial part of other party's assets or properties.
- iv. Any notice of default pursuant to this Section shall identify and state the party's intent to terminate this Contract if the default is not cured within the specified period.

c. ADDITIONAL GROUNDS FOR DEFAULT TERMINATION BY THE TOWN. By giving written notice to the Company, the Town may also terminate the Contract upon the occurrence of one or more of the following events (which shall each constitute grounds for termination without a cure period and without the occurrence of any of the other events of default previously listed):

- i. The Company makes or allows to be made any material written misrepresentation or provides any materially misleading written information in connection with the ITB, the Bid, or any covenant, agreement, obligation, term or condition contained in this Contract; or
- ii. The Company fails to meet delivery times or the Work does not comply with the terms of this Contract as set forth in **Exhibit A**.

d. OBLIGATIONS UPON EXPIRATION OR TERMINATION. In the event this Contract is terminated by the Town for any reason prior to the end of the term, the Company shall upon termination immediately discontinue all services in connection with this Contract and promptly cancel all existing orders and subcontracts, which are chargeable to this Contract. As soon as practicable after receipt of notice of termination, the Company shall submit a statement to the Town showing in detail the Work performed under this Contract to the date of termination.

e. AUTHORITY TO TERMINATE. The Town Manager or his designee is authorized to terminate this Contract on behalf of the Town.

10. REMEDIES.

a. RIGHT TO COVER. If the Company fails to meet any completion date or resolution

time set forth in this Contract (including all Exhibits), the Town may take any of the following actions with or without termination this Contract, and in addition to and without limiting any other remedies it may have:

- i. Employ such means as it may deem advisable and appropriate to perform itself or obtain the Work from a third party until the matter is resolved and the Company is again able to resume performance under this Contract; and
- ii. Deduct any and all expenses incurred by the Town in obtaining or performing the Work from any money then due or to become due to the Company and, should the Town's cost of obtaining or performing the Work exceed the amount due the Company, collect the amount due the Town from the Company.

b. RIGHT TO WITHHOLD PAYMENT. If the Company breaches any provision of this Contract, the Town shall have the right to withhold all payments due to the Company until such breach has been fully cured.

c. SETOFF. Each party shall be entitled to setoff and may deduct from any amounts owed to the other party under this Contract all damages and expenses incurred as a result of the other party's breach of this Contract.

d. OTHER REMEDIES. Upon breach of this Contract, each party may seek all legal and equitable remedies to which it is entitled. The remedies set forth herein shall be deemed cumulative and not exclusive and may be exercised successively or concurrently, in addition to any other available remedy. However, under no circumstances shall the Town be liable to the Company for damages arising from delay, whether caused by the Airport or not.

11. RECORDS. The Company shall be responsible for keeping a record that accurately states the number of hours worked or quantity of goods provided by the Company in the process of providing the Work under the terms of the Contract. The Town shall have the right to audit the Company's invoices, expense reports and other documents relating to the Work performed under the Contract, and shall not be required to pay for Work which did not occur or which occurred in breach of the Contract. The Company shall make such documents available for inspection and copying by the Town between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, whenever requested by the Town.

12. COMPANY WILL NOT SELL or DISCLOSE DATA. The Company will treat as confidential information all data provided by the Town in connection with this Contract. Town data processed by the Company shall remain the exclusive property of the Town. The Company will not reproduce, copy, duplicate, disclose, or in any way treat the data supplied by the Town in any manner except that contemplated by this Contract.

13. NOTICES. Any notice, consent or other communication required or contemplated by this Contract shall be in writing, and shall be delivered in person, by U.S. mail, by overnight

courier, by electronic mail or by telefax to the intended recipient at the address set forth below. Notice shall be effective upon the date of receipt by the intended recipient; provided that any notice which is sent by telefax or electronic mail shall also be simultaneously sent by mail deposited with the U.S. Postal Service or by overnight courier. Each party may change its address for notification purposes by giving the other party written notice of the new address and the date upon which it shall become effective.

Communications that relate to any breach, default, termination, delay in performance, prevention of performance, modification, extension, amendment, or waiver of any provision of this Contract shall be sent to:

| | |
|-------------------------|---|
| For The Company: | For The Town: |
| | Town of Wadesboro |
| | Attn: Scott Martin |
| | PO Box 697 |
| | Wadesboro, NC 28170 |
| | Phone: 704-694-2167 |
| | E-mail: rsm2011@windstream.net |
| | |
| With Copy To: | With Copy To: |
| | Town of Wadesboro |
| | Attn: David Edwards |
| | PO Box 697 |
| | Wadesboro, NC 28170 |
| | Phone: 704-694-5171 |
| | Fax: 704-695-1331 |
| | E-mail: wadesboromanager@windstream.net |

14. MISCELLANEOUS.

- a. Non-Exclusivity. The Company acknowledges that it is one of several providers of the Work to the Town and the Town is not obligated to contract with the Company for any particular project.
- b. Time is of the Essence. Time is of the essence in having the Company perform all Work and deliver all items within the time frames provided by this Contract and **Exhibit A**, including all completion dates, response times and resolution time. Except as specifically stated in the Contract, there shall be no extensions of the stated time frames. All references to days in this Contract (including the Exhibits) shall

refer to calendar days rather than business days, unless the Contract provides otherwise for a specific situation.

- c. Entire Contract. This Contract including all Exhibits constitutes the entire agreement between the parties with respect to the subject matter herein. There are no other representations, understandings, or agreements between the parties with respect to such subject matter. This Contract supersedes all prior agreements, negotiations, representations and bids, written or oral.
- d. Amendment. No amendment or change to the Contract shall be valid unless in writing and signed by both parties to the Contract.
- e. Service Changes and Change Orders. In the event changes to the Work (collectively “Change”), become necessary or desirable to the parties, the parties shall follow the procedures set forth in this Section. A Change shall be effective only when documented by a written amendment to this Contract executed by both parties. The amendment shall set forth in detail (i) the Change requested, including all modifications of the duties of the parties; (ii) the reason for the proposed Change; and (iii) a detailed analysis of the impact of the Change on the results of the Work including the impact on all delivery dates and any associated price.

In the event either party desires a Change, the Project Manager for such party shall submit to the other party’s Project Manager a written request for the Change. If the receiving party does not accept the Change within ten (10) days, the receiving party shall be deemed to have rejected the Change request. If the parties cannot reach an agreement on a proposed Change, the Company shall nevertheless continue to render performance under this Contract in accordance with its (unchanged) terms and conditions.

Changes that involve or increase the amounts payable by the Town require execution by the Town Manager or a designee depending on the amount. Some increases may require execution by the Town Manager or a designee or approval by Wadesboro Town Council.

- f. Governing Law and Jurisdiction. North Carolina law shall govern the interpretation and enforcement of this Contract, and any other matters relating to this Contract (all without regard to North Carolina conflicts of law principles). All legal actions or other proceedings relating to this Contract shall be brought in a state or federal court sitting in Anson County, North Carolina. By execution of this Contract, the parties submit to the jurisdiction of said courts and hereby irrevocably waive any and all objections which they may have with respect to venue in any court sitting in Anson County, North Carolina.
- g. Binding Nature and Assignment. This Contract shall bind the parties and their successors and permitted assigns. Neither party may assign this Contract without the

prior written consent of the other. Any assignment attempted without the written consent of the other party shall be void. For purposes of this Section, a Change in Control, as defined in Section 15(m) constitute an assignment.

- h. Survival of Provisions.** Those Sections of the Contract and the Exhibits which by their nature would reasonably be expected to continue after the termination or natural expiration of the Contract shall survive the termination or natural expiration of the Contract, including but not limited to all definitions, warranties, and terminations.
- i. Severability.** The invalidity of one or more of the phrases, sentences, clauses or sections contained in this Contract shall not affect the validity of the remaining portion of this Contract so long as the material purposes of this Contract can be determined and effectuated. If any provision of this Contract is held to be unenforceable, then both parties shall be relieved of all obligations arising under such provision, but only to the extent that such provision is unenforceable, and this Contract shall be deemed amended by modifying such provision to the extent necessary to make it enforceable while preserving its intent.
- j. No Publicity.** No advertising, sales promotion or other materials of the Company or its agents or representations may identify or reference this Contract or the Town in any manner without the prior written consent of the Town. Notwithstanding the foregoing, the parties agree that the Company may list the Town as a reference in responses to invitations to bid or requests for proposals, and may identify the Town as a customer in presentations to potential customers.
- k. No Manufacturer or Dealer Advertisement.** No manufacture or dealer shall advertise on goods delivered to the Town without prior approval by the Town Manager, or his designee.
- l. Waiver.** No delay or omission by either party to exercise any right or power it has under this Contract shall impair or be construed as a waiver of such right or power. A waiver by either party of any covenant or breach of this Contract shall not constitute or operate as a waiver of any succeeding breach of that covenant or of any other covenant. No waiver of any provision of this Contract shall be effective unless in writing and signed by the party waiving the rights.
- m. Change in Control.** In the event of a change in “Control” of the Company (as defined below), the Town shall have the option of terminating this Contract by written notice to the Company. The Company shall notify the Town within ten days of the occurrence of a change in control. As used in this Contract the term “Control” shall mean the possession, direct or indirect, of either (i) the ownership of or ability to direct the voting of, as the case may be fifty-one percent (51%) or more of the equity interests, value or voting power in the Company or (ii) the power to direct or cause the direction of the management and policies of the Company whether through

the ownership of voting securities, by contract or otherwise.

- n.** Force Majeure. Neither party hereto shall be liable to the other for any failure, delay or interpretation in the performance of any of the terms, covenants, or conditions of this Contract due to causes beyond the control of that party including, but not limited to, court order, shortages of materials, acts of God, act of the public enemy, acts of superior governmental authority, weather conditions, floods, riots, rebellion, sabotage or other circumstances for which such party is not responsible, which the party cannot reasonably circumvent or which are not in its power to control, for as long as such cause continues. This Section does not include strikes, slow-downs, walkouts, lockouts and individual disputes.
- o.** No Limitations on Disclosure. The Company agrees that the Town shall be able to disclose and distribute to any persons or entities, without restrictions, all Work and samples provided under this Contract or the ITB. The Company specifically agrees that the Town can and will provide samples of the Work provided under this Contract to the Company's competitors in any future procurement process.
- p.** No Bribery. The Company certifies that neither it, any of its affiliates or subcontractors, nor any employees of any of the forgoing has bribed or attempted to bribe an officer or employee of the Town in connection with this Contract.
- q.** Familiarity and Compliance with Laws and Ordinances. The Company agrees to make itself aware of and comply with all local, state and federal ordinances, statutes, laws, rules and regulations applicable to the Work. The Company further agrees that it will at all times during the term of this Contract be in compliance with all applicable federal, state and/or local laws regarding employment practices. Such laws will include, but shall not be limited to workers' compensation, the Fair Labor Standards Act (FLSA), the Americans with Disabilities Act (ADA), the Family and Medical Leave Act (FMLA) and all OSHA regulations applicable to the work.
- r.** Taxes. The Company shall pay all applicable federal, state and local taxes which may be chargeable against the performance of the Work.
- s.** No Third-Party Benefit. The provisions of this Contract are for the sole benefit of the Parties hereto. Except as expressly provided herein, this Contract neither confers any rights, benefits, or claims upon any person or entity not a Party hereto nor precludes any actions against, or rights of recovery from, any persons or entities not Parties hereto.
- t.** E-Verify. Unless otherwise exempted, Company shall comply with the requirements of Article 2 of Chapter 64 of the General Statutes. Further, if Company utilizes a subcontractor, Company shall require the subcontractor to comply with the

requirements of Article 2 of Chapter 64 of the General Statutes

- u. NC Prohibitions on Contracts with Companies that Invest in Iran or Boycott Israel. Company certifies that (i) it is not identified on the Final Divestment List or any other list of prohibited investments created by the NC State Treasurer pursuant to N.C.G.S. 147-86.58 (collectively, the “Treasurer’s IDA List”); (ii) it has not been designated by the NC State Treasurer pursuant to N.C.G.S. 147-86.81 as a company engaged in the boycott of Israel (such designation being referred to as the “Treasurer’s IB List”); and (iii) it will not take any action causing to appear on the Treasurer’s IDA List or the Treasurer’s IB List during the term of this Contract. In signing this Contract, Company further agrees, as an independent obligation, separate and apart from this Contract, to reimburse the Town for any and all damages, costs and attorneys’ fees incurred by the Town in connection with any claim that this Contract or any part thereof is void due to Company appearing on The Treasurer’s IDA List or the Treasurer’s IB List at any time before or during the term of this Contract.
- v. Waiver of Bidding for Previously Bid Contracts. Per N.C.G.S. 143-129 (g), the Town acknowledges and affirms the right of Company to “furnish the items at the same or more favorable prices, terms, and conditions as those provided under the contract with the other unit or agency.”

15. NON-APPROPRIATION OF FUNDS. If the Town Council does not appropriate the funding needed by the Town to make payments under this Contract for a given fiscal year, the Town will not be obligated to pay amounts due beyond the end of the last fiscal year for which funds were appropriated. In such event, the Town will promptly notify the Company of the non-appropriation and this Contract will be terminated at the end of the last fiscal year for which funds were appropriated. No act or omission by the Town, which is attributable to non-appropriation of funds shall constitute a breach of or default under this Contract.

16. LIQUIDATED DAMAGES. Non-delivery by the contract’s specified date, or other vendor nonperformance, will require a penalty that is no less than \$100 per day until such time that the vehicle, compliant with the terms of the contract, has been accepted by the recipient.

IN WITNESS WHEREOF, and in acknowledgment that the parties hereto have read and understood each and every provision hereof, the parties have caused this Contract to be executed on the date first written above.

[COMPANY NAME]

TOWN OF WADESBORO

BY: _____

BY: _____

SIGNATURE: _____

SIGNATURE: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

This instrument has been pre-audited in the manner required by Local Government Budget and Fiscal Control Act.

TOWN OF WADESBORO, FINANCE OFFICER

BY: _____

SIGNATURE: _____

TITLE: _____

DATE: _____

EXHIBIT A: Specifications

1. **Scope of Work:** The scope of this contract shall be to provide one (1) Aerial Fire Apparatus.
2. **Contract Types:** The Contract resulting from this ITB will be of the type indicated below:
 - Definite Quantity:** The Contract will be a fixed-price contract that provides for delivery of a specified quantity of products and any related services either at specified times or when ordered.
 - Indefinite Quantity:** The Contract will be a unit price contract for an indefinite amount of products (and any related services) to be furnished at specified times, or as ordered. In some cases, indefinite quantity contracts may state a minimum quantity that the Town is obligated to order but in others the Town reserves the right to purchase according to actual need and does not guarantee quantities. The Town may make available to Bidders information regarding the Town's purchase history or projected estimates of the approximate quantity of products that will be needed. Notwithstanding such information, each Bidder is required to perform its own due diligence on which to base its bid. Inaccuracy of information provided by the Town will not give rise to any claim against the Town, or entitle any Bidder to rescind its Bid or the Company to terminate or amend the Contract.
3. **Terms of Contract:**
 - Unit Price Contract:** Contract awarded is for a unit price when product and service needs are based upon indefinite quantities, and where orders will be based on actual needs that may exceed or be less than projections. All expenditures under a unit price contract are contingent upon appropriations having been made by Town Council.
 - One Time Purchase:** Contract awarded is for a specific quantity purchased at one time.
4. **General Requirements:** All equipment and component parts furnished shall meet all requirements of these Specifications and be in operating condition at time of delivery. Bids submitted in response to this ITB must comply with all terms and conditions and Specifications as listed.
5. **Warranty:** All equipment and goods supplied under these Specifications shall be covered by the manufacturer's normal written guarantee and/or warranty (minimum of one year) against defects in materials, workmanship and performance.
 - a. Two copies of the manufacturer's written warranty shall be supplied with the equipment.
 - b. It shall be the responsibility of the manufacturer to pay all shipping and crating costs associated with warranty repairs.
 - c. Warranty repairs shall be performed by the contractor at the closest, most convenient location for the Town to ensure expediency of repair.
 - d. The equipment warranty will become effective on the date of installation of the equipment by the Town, but shall not exceed 24 months after receipt by the Town.

6. **Pricing.** The bid cost must include all equipment, labor, delivery, freight, shipping, installation, consultation, packaging, pallet/crate fees, profit and all other costs associated with this project. Excluding sales tax, no additional cost will be allowed.
7. **Vendor – Invoice Instructions.** In order to more efficiently process payments, the Town requests the Selected Proposer's compliance in completing the following:
 - i. **Request a purchase order (PO) before delivering goods and/or services**
When a PO has been issued, the PO number must appear on each invoice.
When a contract has been issued, the contract number and PO number must appear on each invoice and a sales tax statement must be attached.
 - ii. **Email invoices** as follows:
acctspayable@windstream.net with copy to wadesboromanager@windstream.net
 - iii. **Include all applicable sales taxes on the invoice as separate lines** and not combined with the cost of goods. The Town of Wadesboro is **not** exempt from sales tax.
8. **Delivery Time.** Delivery of all equipment must be accomplished in full no later than **07/03/2020 by 5:00 PM**. Company's bid is deemed a binding commitment to meet the delivery time stated above unless the Bid specifically takes exception.
9. **Product Specifications.** See **Exhibit B** as attached for product specifications.
10. **Product Diagram/Drawings.** The Company will provide seven (7) complete drawings/diagrams of the proposed apparatus for the purposes of review by the Town.
11. **Documentation.** The Company will provide, where applicable, for all Work purchased under this Contract, written or electronic documentation that is complete and accurate, and sufficient to enable Town employees with ordinary skills and experience to utilize such Work for the purpose for which the Town is acquiring them. Such documentation may take the form of user manuals or online instruction.
12. **Training.** The Company shall be responsible for initially training all necessary Town employees, as well as new or additional employees as needed on an on-going basis, on using the Company's products or systems necessary under this Contract, including without limitation any online ordering or invoicing systems. The Company shall be responsible for providing documented step-by-step instructions to each of the Town's authorized users.
13. **Subcontract.** The Company shall not subcontract any of its obligations under this Contract without the Town's prior written consent. In the event the Town does consent in writing to a subcontracting arrangement, Company shall be the prime contractor and shall remain fully responsible for performance of all obligations which it is required to perform under this Contract. Any subcontract entered into by Company shall name the Town as a third party beneficiary.

EXHIBIT B: Apparatus Specifications

MODEL

The chassis shall be a Gladiator model or one which is a substantially adequate or equivalent. The cab and chassis shall include design considerations for multiple emergency vehicle applications, rapid transit and maneuverability. The chassis shall be manufactured for heavy duty service with the strength and capacity to support a fully laden apparatus, one hundred (100) percent of the time.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MODEL YEAR

The chassis shall have a vehicle identification number that reflects a 2019 or 2020 model year.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

COUNTRY OF SERVICE

The chassis shall be put in service in the country of United States of America (USA).

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB AND CHASSIS LABELING LANGUAGE

The cab and chassis shall include the applicable caution, warning, and safety notice labels with text to be written in English.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

APPARATUS / VEHICLE TYPE

The apparatus shall be a Quint vehicle designed for emergency service use. The chassis shall be manufactured for use as a straight truck type vehicle and designed for the installation of a permanently mounted apparatus behind the cab. There shall be a rear mount, 100' or longer steel ladder or aluminum ladder with a minimum tip load of 500 LBS while flowing 1500 GPM of water. The apparatus of the vehicle shall be supplied and installed by the apparatus manufacturer.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

VEHICLE ANGLE OF APPROACH PACKAGE

The angle of approach of the apparatus shall be a minimum of 10.00 degrees.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AXLE CONFIGURATION

The chassis shall feature a 6 x 4 axle configuration consisting of a tandem rear drive axle set with a single front steer axle.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

GROSS AXLE WEIGHT RATINGS FRONT

The front gross axle weight rating (GAWR) of the chassis shall be a minimum of 23,000 pounds.

This front gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

GROSS AXLE WEIGHT RATINGS REAR

The rear gross axle weight rating (GAWR) of the chassis shall be a minimum of 52,000 pounds.

This rear gross axle weight rating shall be adequate to carry the weight of the completed apparatus including all equipment and personnel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MISCELLANEOUS EQUIPMENT ALLOWANCE

The Gross Axle Weight Rating (GAWR) and the Gross Combined Weight Rating (GCWR) or Gross Vehicle Weight Rating (GVWR) of the chassis shall be adequate to carry the weight of the unequipped apparatus with the water tank and other tanks full, specified hose load, unequipped personnel weight, ground ladders, and miscellaneous equipment allowance of 2,500 pounds.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

VEHICLE STABILITY

The apparatus shall comply with the requirements of NFPA 1901 as it applies to vehicle stability. The particular apparatus as described in the specification provided within the bid package shall be classified into one of the following categories:

- The apparatus shall go through actual tilt table testing which shall be determined by the apparatus manufacturer.
- The apparatus shall be equipped with a rollover stability control system as defined in section 4.13.1.2 of NFPA 1901.
- The apparatus shall be deemed a similar apparatus and meeting the intent of section 4.13.1.1.2 of NFPA 1901.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PUMP PROVISION

The chassis shall include provisions to mount a drive line pump in the middle of the chassis, behind the cab, more commonly known as the midship location. Chassis driveline pump provisions shall include an interlock feature for automatic setting of the park brake when the vehicle is shifted into pump mode.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

WATER & FOAM TANK CAPACITY

The chassis shall include a carrying capacity of up to 500 gallons. The water 480 gallons and/or foam tank 20 gallons shall be supplied and installed by the apparatus manufacturer. The supplied water tank shall have an LED water level indicator.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB STYLE

The cab shall be a custom, fully enclosed, with a flat roof over the driver, officer, and crew area, designed and built specifically for use as an emergency response vehicle. There shall be full length doors enclosing the cab access steps.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OCCUPANT PROTECTION

The vehicle shall include the Advanced Protection System™ (APS) which shall secure belted occupants and increase the survivable space within the cab. The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

The system components shall include:

Driver steering wheel airbag

Driver dual knee air bags with energy management mounting and officer knee airbag.

Large driver, officer, and crew area side curtain airbags

APS advanced seat belt system - retractor pre-tensioners tighten the seat belts around the occupants, securing the occupants in seats and load limiters play out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries

Heavy truck Restraints Control Module (RCM) - receives inputs from the outboard sensors, selectively deploys APS systems, and records sensory inputs immediately before and during a detected qualifying event

Integrated outboard crash sensors mounted at the perimeter of the vehicle - detects a qualifying front or side impact event and monitors and communicates vehicle status and real time diagnostics of all critical subsystems to the RCM

Fault-indicating Supplemental Restraint System (SRS) light on the driver's instrument panel

Frontal impact protection shall be provided by the outboard sensors and the RCM. In a qualifying front impact event, the outboard sensors provide inputs to the RCM. The RCM activates the steering wheel airbag, driver side dual knee airbags (patent pending), officer side knee airbag, and advanced seat belts for each occupant in the cab.

Rollover, side impact, and ejection mitigation shall be provided by the outboard sensors and the RCM. In qualifying rollover or side impact events the outboard sensors provide inputs to the RCM. The RCM activates the side curtain airbags and advanced seat belts for each occupant in the cab. The RCM measures roll angle, lateral acceleration, and roll rate to determine if a rollover event or side impact event is imminent or occurring.

In the event of a qualifying offset or other non-frontal impact, the RCM shall determine and intelligently deploy the front impact protection system, the side impact protection system, or both front and side impact protection systems based on the inputs received from the outboard crash sensors.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB FRONT FASCIA

The cab fascia will encompass the entire front of the cab structure from the bottom of the windshield to the bottom of the cab and shall be the “Classic” design.

The front cab fascia shall include two (2) molded plastic modules on each side accommodating a total of up to four (4) Hi/Low beam headlights and two (2) turn signal lights or up to four (4) warning lights. (1) Roto Ray with red, white and green lighting. A chrome plated molded plastic bezel shall be provided on each side around each set of four lamps.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT GRILLE

The front cab fascia shall include a classic box style, 304 stainless steel front grilles. The upper portion of the grille shall be hinged to provide service access behind the grille.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB UNDERCOAT

There shall be a rubberized undercoating applied to the underside of the cab that provides abrasion protection, sound deadening and corrosion protection.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB SIDE DRIP RAIL

There shall be a drip rail along the top radius of each cab side. The drip rails shall help prevent water from the cab roof running down the cab side.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB PAINT EXTERIOR

The cab shall be painted prior to the installation of glass accessories and all other cab trim to ensure complete paint coverage and the maximum in corrosion protection of all metal surfaces.

The primary lower cab color shall be: **RED**

The secondary upper color shall be: **WHITE**

Color codes will be decided at pre-construction conference if necessary.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB PAINT EXTERIOR BREAKLINE

The upper and lower paint shall meet at a break-line on the cab which shall be located approximately 1.00 inch below the door windows on each side of the cab. The break-line shall curve down at the front cab corners to approximately 5.00 inches below the windshields on the front of the cab.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB PAINT PINSTRIPE

Where the upper and lower paint colors meet a temporary 0.50-inch-wide black pinstripe shall be applied over this break line to offer a more finished look prior to the final pinstripe being installed by the OEM.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB PAINT WARRANTY

The cab and chassis shall be covered by a limited manufacturer paint warranty which shall be in effect for ten (10) years from the first owner's date of purchase or in service or the first 100,000 actual miles, whichever occurs first.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB PAINT INTERIOR

The visible interior cab structure surfaces shall be painted with a multi-tone silver gray texture finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB ENTRY DOORS

The cab shall include four (4) entry doors, two (2) front doors and two (2) crew doors designed for ease of entering and egress when outfitted with an SCBA.

All cab entry doors shall be full length in design to fully enclose the lower cab steps.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB INSULATION

The cab ceiling and walls shall include thick foam insulation. The insulation shall act as a barrier absorbing noise as well as assisting in sustaining the desired climate within the cab interior.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB STRUCTURAL WARRANTY

The cab structure shall be warranted for a period of ten (10) years or one hundred thousand (100,000) miles which ever may occur first. The warranty period shall commence on the date the vehicle is delivered to the first end user.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRICAL SYSTEM

The chassis shall include a single starting electrical system which shall include a 12-volt direct current multiplexing system, suppressed per SAE J551. The wiring shall be appropriate gauge cross link with 311-degree Fahrenheit insulation. All SAE wires in the chassis shall be color coded and shall include the circuit number and function where possible. The wiring shall be protected by 275-degree Fahrenheit minimum high temperature flame retardant loom. All nodes and sealed Deutsch connectors shall be waterproof.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OEM WIRING

The wiring system shall include a custom J1939 interface harness drop provided by the chassis manufacturer designed to meet the requirements provided by the OEM.

The wiring system shall also include a prewire for ECM park brake input and engine ground return circuits located behind the switch panel. The circuits shall include an extra 2 feet of wire and shall be labeled "ECM Park Brake Input".

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MULTIPLEX DISPLAY

The multiplex electrical system shall include (2) Weldon Vista IV displays or one which is a substantially adequate or equivalent which shall be located one (1) on the right side of the dash in the switch panel and one (1) on the left side of the dash in the switch panel. The Vista IV displays shall feature full color LCD display screens which include a message bar displaying the time of day and important messages requiring acknowledgement by the user which shall all be displayed on the top of the screen in the order they are received. There shall be eight (8) push button virtual controls, four (4) on each side of the display for the on-board diagnostics. The display screens shall be video ready for back-up cameras, thermal cameras, and DVD.

The Vista IV displays shall offer varying fonts and background colors. The displays shall be fully programmable to the needs of the customer and shall offer virtually infinite flexibility for screen configuration options.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

LOAD MANAGEMENT SYSTEM

The apparatus load management shall be performed by the included multiplex system. The multiplex system shall also feature the priority of sequences and shall shed electrical loads based on the priority list specifically programmed.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DATA RECORDING SYSTEM

The chassis shall have a Weldon Vehicle Data Recorder (VDR) system or one which is a substantially adequate or equivalent installed. The system shall be designed to meet NFPA 1901 and shall be integrated with the Weldon Multiplex electrical system. The following information shall be recorded:

- Vehicle Speed
- Acceleration
- Deceleration
- Engine Speed
- Engine Throttle Position
- ABS Event
- Seat Occupied Status
- Seat Belt Status
- Master Optical Warning Device Switch Position
- Time
- Date

Each portion of the data shall be recorded at the specified intervals and stored for the specified length of time to meet NFPA 1901 guidelines and shall be retrievable by connecting a laptop computer to the VDR system.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ACCESSORY POWER

The electrical distribution panel shall include two (2) power studs. The studs shall be size #10 and each of the power studs shall be circuit protected with a fuse of the specified amperage. One (1) power stud shall be capable of carrying up to a 40-amp battery direct load. One (1) power stud shall be capable of carrying up to a 15-amp ignition switched load. The two (2) power studs shall share one (1) #10 ground stud. A 225-amp battery direct power and ground stud shall be provided and installed on the chassis near the left-hand battery box for OEM body connections.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AUXILIARY ACCESSORY POWER

An auxiliary set of power and ground studs shall be provided and installed behind the electrical center cover with a 40-amp breaker. The studs shall be 0.38-inch diameter and capable of carrying up to a 40-amp battery direct load switched with the master power switch.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

EXTERIOR ELECTRICAL TERMINAL COATING

All terminals exposed to the elements will be sprayed with a high visibility protective rubberized coating to prevent corrosion.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE

The chassis engine shall be a Cummins X15 engine or one which is a substantially adequate or equivalent. The X15 engine shall be an in-line six (6) cylinder, four-cycle diesel-powered engine. The engine shall offer a rating of 505 horsepower at 1800 RPM and shall be governed at 2100 RPM. The torque rating shall feature 1850-foot pounds of torque at 1150 RPM with 912 cubic inches (14.9 liter) of displacement.

The X15 engine shall feature a VGT™ Turbocharger, a high-pressure common rail fuel system, fully integrated electronic controls with an electronic governor, and shall be EPA certified to meet the 2017 emissions standards using cooled exhaust gas recirculation and selective catalytic reduction technology.

The engine shall include an engine mounted combination full flow/by-pass oil filter with replaceable spin on cartridge for use with the engine lubrication system. The engine shall include Citgo brand Citgard 500, or equivalent 15W40 CK-4 low ash engine oil which shall be utilized for proper engine lubrication.

A wiring harness shall be supplied ending at the back of the cab. The harness shall include a connector which shall allow an optional harness for the pump panel. The included circuits shall be provided for a tachometer, oil pressure, engine temperature, hand throttle, high idle and a PSG system. A circuit for J1939 data link shall also be provided at the back of the cab.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB ENGINE TUNNEL

The cab engine tunnel shall be covered with a multi-layer mat for heat and noise reduction. The engine tunnel shall be additionally covered with a susceptible material (metal or alloy material) to mount department equipment.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DIESEL PARTICULATE FILTER CONTROLS

There shall be two (2) controls for the diesel particulate filter. One (1) control shall be for regeneration and one (1) control shall be for regeneration inhibit.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE PROGRAMMING HIGH IDLE SPEED

The engine high idle control shall maintain the engine idle at approximately 1250 RPM when engaged.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE HIGH IDLE CONTROL

The vehicle shall be equipped with an automatic high-idle speed control. It shall be pre-set so when activated, it will operate the engine at the appropriate RPM to increase alternator output. This device shall operate only when the engine is running, and the transmission is in neutral with the parking brake set. The device shall disengage when the operator depresses the brake pedal, or the transmission is placed in gear, and shall be available to manually or automatically re-engage when the brake is released, or when the transmission is placed in neutral. There shall be an indicator on the Vista display and control screen for the high idle speed control.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE PROGRAMMING ROAD SPEED GOVERNOR

The engine shall include programming which will govern the top speed of the vehicle.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE COMPRESSION BRAKE (JAKE BRAKE)

The engine shall come equipped with a Jacobs “C-Brake” compression brake. The brake shall be controlled by an on/off and low/medium/high switches located in the cab. The compression brake shall interface with the anti-lock brake controller to prevent engine brake operation during adverse braking conditions. A pump shift, interlock circuit shall be provided to prevent the engine brake from activating during pumping operation.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AUXILIARY ENGINE BRAKE

A compression brake, for the six (6) cylinder engine shall be provided. A cutout relay shall be installed to disable the compression brake when in pump mode or when an ABS event occurs. The engine compression brake shall activate upon 0% accelerator when in operation mode and actuate the vehicle’s brake lights.

The engine shall utilize a variable geometry turbo (VGT) as an integrated auxiliary engine brake to offer a variable rate of exhaust flow, which when activated in conjunction with the compression brake shall enhance the engine's compression braking capabilities.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRONIC ENGINE OIL LEVEL INDICATOR

The engine oil shall be monitored electronically and shall send a signal to activate a warning in the instrument panel when levels fall below normal. The warning shall activate in a low oil situation upon turning on the master battery and ignition switches without the engine running.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FLUID FILLS

The front of the chassis shall accommodate fluid fill for the engine oil through the grille. This area shall also accommodate a check for the engine oil. The transmission, power steering, and coolant fluid fills and checks shall be under the cab. The windshield washer fill shall be accessible through the front left side mid step.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE DRAIN PLUG

The engine shall include an original equipment manufacturer installed oil drain plug.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE WARRANTY

The Cummins engine or one which is a substantially adequate or equivalent shall be warranted for a period of five (5) years or 100,000 miles, whichever occurs first. Warranty shall take place at time of delivery.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REMOTE THROTTLE HARNESS

An apparatus interface wiring harness for the engine and transmission pump interlocks shall be supplied with the chassis. The harness shall include a connector for connection to a chassis pump panel harness supplied by the body builder and shall terminate in the left frame rail behind the cab for connection by the body builder. The harness shall include circuits deemed for a pump panel and shall contain circuits for a hand throttle, and a multiplexed gauge. Separate circuits shall also be included for a pump control switch, "Pump Engaged" and "OK to Pump" indicator lights, open compartment ground, start signal, park brake ground, ignition signal, master power, clean power, customer ignition, air horn solenoid switch, high idle switch and high idle indicator light. The harness shall contain interlocks that will prevent shifting to road or pump mode unless the transmission output speed translates to less than 1 mph and the transmission is in neutral. The shift to pump mode shall also require the park brake be set.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE PROGRAMMING REMOTE THROTTLE

The engine ECM (Electronic Control Module) discreet wire remote throttle circuit shall be turned off for use with a J1939 based pump controller or when the discreet wire remote throttle controls are not required.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE PROGRAMMING IDLE SPEED

The engine low idle speed will be programmed at 700 rpm.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE AIR INTAKE

The engine air intake system shall include an ember separator. The air intake system shall include a restriction indicator light in the warning light cluster on the instrument panel, which shall activate when the air cleaner element requires replacement.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR INTAKE PROTECTION

A light duty skid plate shall be supplied for the engine air intake system below the right front side of the cab. The skid plate shall provide protection for the air intake system from light impacts, stones, and road debris. The skid plate shall be painted to match the frame components.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE FAN DRIVE

The engine cooling system fan shall incorporate a thermostatically controlled, clutched type fan drive.

When the clutched fan is disengaged it shall facilitate improved vehicle performance, cab heating in cold climates, and fuel economy. The fan clutch design shall be fail safe so that if the clutch drive fails the fan shall engage to prevent engine overheating due to the fan clutch failure.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE COOLING SYSTEM

There shall be a heavy-duty aluminum cooling system designed to meet the demands of the emergency response industry. The cooling system shall have the capacity to keep the engine properly cooled under all conditions of road and pumping operations. The cooling system shall be designed and tested to meet or exceed the requirements specified by the engine and transmission manufacturer and all EPA requirements. The cooling package shall include Extended Life Coolant (ELC). The instrument panel shall feature an electronic low coolant indicator light which shall be located in the center of the instrument panel. An audible tone alarm shall also provide indication of low coolant.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE COOLING SYSTEM PROTECTION

The engine cooling system shall include a recirculation shield designed to act as a light duty skid plate below the radiator to provide additional protection for the engine cooling system from light impacts, stones, and road debris. The skid plate shall be painted to match the frame components.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE COOLANT FILTER

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

Proposals offering engines equipped with coolant filters shall be supplied with standard non-chemical type particulate filters.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE PUMP HEAT EXCHANGER

A single bundle type coolant to water heat exchanger shall be installed between the engine and the radiator. The heat exchanger shall be designed to prohibit water from the pump from coming in contact with the engine coolant. This shall allow the use of water from the discharge side of the pump to assist in cooling the engine.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

COOLANT HOSES

The cooling systems hose shall be formed silicone hose and formed aluminized steel tubing and include stainless steel constant torque band clamps.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE COOLANT OVERFLOW BOTTLE

A remote engine coolant overflow bottle shall be provided in the case of over filling the coolant system. The overflow bottle shall capture the expansion fluid or overflow rather than allow the fluid to drain on the ground. The overflow bottle provided on the cooling system shall only be a catch bottle and shall not return excess coolant back into the surge tank.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE EXHAUST SYSTEM

The exhaust system shall include an end-in end-out horizontally mounted single module after treatment device, downpipe from the charge air cooled turbo. The single module shall include four temperature sensors, diesel particulate filter (DPF), urea dosing module (UL2), and a selective catalytic reduction (SCR) catalyst to meet current EPA standards. The selective catalytic reduction catalyst utilizes a diesel exhaust fluid solution consisting of urea and purified water to convert NOx into nitrogen, water, and trace amounts of carbon dioxide. The solution shall be mixed and injected into the system through the between the DPF and SCR.

The system shall utilize 0.07-inch-thick stainless-steel exhaust tubing between the engine turbo and the DPF. Zero leak clamps seal all system joints between the turbo and DPF.

The single module after treatment through the end of the tailpipe shall be connected with zero leak clamps. The discharge shall terminate horizontally on the right side of the vehicle ahead of the rear tires.

The exhaust system after treatment module shall be mounted below the frame in the inboard position. The mounting brackets shall be mounted on the inside of the frame.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DIESEL EXHAUST FLUID TANK

The exhaust system shall include a molded cross-linked polyethylene tank for Diesel Exhaust Fluid (DEF). The tank shall have a capacity of six (6) usable gallons and shall be mounted on the left-hand side of the chassis frame behind the batteries below the frame.

The DEF tank shall be designed with capacity for expansion in case of fluid freezing. Engine coolant, which shall be thermostatically controlled, shall be run through lines in the tank to help prevent the DEF from freezing and to provide a means of thawing the fluid if it should become frozen.

The tank fill tube shall be routed under the rear of the cab with the fill neck and splash guard accessible in the top rear step.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE EXHAUST ACCESSORIES

An exhaust temperature mitigation device shall be included on the finished apparatus.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE EXHAUST WRAP

The exhaust tubing between the engine turbo and the diesel particulate filter (DPF) shall be wrapped with a thermal cover in order to retain the necessary heat for DPF regeneration. The exhaust wrap shall also help protect surrounding components from radiant heat which can be transferred from the exhaust.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRANSMISSION

The drive train shall include an Allison model EVS 4000 or one which is a substantially adequate or equivalent torque converting, automatic transmission which shall include electronic controls or one which is a substantially adequate equivalent. The transmission shall feature two (2) 10-bolt PTO pads located on the converter housing. An electronic oil level sensor shall be included with the readout located in the shift selector.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRANSMISSION MODE PROGRAMMING

The transmission, upon start-up, will select five (5) speeds of operation. The sixth speed over drive shall be available with the activation of the mode button on the shifting pad.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRANSMISSION FEATURE PROGRAMMING

The Allison Gen V-E transmission EVS group package number 127 shall contain the 198 vocational package in consideration of the duty of this apparatus as a pumper. This package shall incorporate an automatic neutral with selector override. This feature commands the transmission to neutral when the park brake is applied, regardless of drive range requested on the shift selector. This requires re-selecting drive range to shift out of neutral for the override.

This package shall be coupled with the use of a split shaft PTO and incorporate pumping circuits. These circuits shall be used allowing the vehicle to operate in the fourth range lockup while operating the pump mode due to the 1 to 1 ratio through the transmission, therefore the output speed of the engine is the input speed to the pump. The pump output can be easily calculated by using this input speed and the drive ratio of the pump itself to rate the gallons of water the pump can provide.

A transmission interface connector shall be provided in the cab. The Gen V-E transmission shall include prognostic diagnostic capabilities. These capabilities shall include the monitoring of the fluid life, filter change indication, and transmission clutch maintenance.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRANSMISSION SHIFT SELECTOR

An Allison or one which is a substantially adequate or equivalent pressure sensitive range selector touch pad shall be provided and located to the right of the driver within clear view and easy reach. The shift selector shall have a graphical Vacuum Florescent Display (VFD) capable of displaying two lines of text. The shift selector shall provide mode indication and a prognostic indicator (wrench symbol) on the digital display. The prognostics monitor various operating parameters and shall alert you when a specific maintenance function is required.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRONIC TRANSMISSION OIL LEVEL INDICATOR

The transmission fluid shall be monitored electronically and shall send a signal to activate a warning in the instrument panel when levels fall below normal.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRANSMISSION PRE-SELECT WITH AUXILIARY BRAKE

When the auxiliary brake is engaged, the transmission shall automatically down shift to decrease the rate of speed assisting the secondary braking system and slowing the vehicle.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRANSMISSION COOLING SYSTEM

The transmission shall include a water to oil cooler system located in the cooling loop between the radiator and the engine. The transmission cooling system shall meet all transmission manufacturer requirements. The transmission cooling system shall feature continuous flow of engine bypass water to maintain uninterrupted transmission cooling.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRANSMISSION DRAIN PLUG

The transmission shall include an original equipment manufacturer installed magnetic transmission fluid drain plug.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRANSMISSION WARRANTY

The Allison EVS series transmission, or one which is a substantially adequate or equivalent, shall be warranted for a period of five (5) years with unlimited mileage. Parts and labor shall be included in the warranty. Warranty shall take place at time of delivery.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

LH PTO

A PTO shall be installed on the transmission by the OEM. A ten (10) bolt Chelsea model 280-GGFJP-B5XD heavy duty transmission driven PTO or one which is a substantially adequate or equivalent shall be installed. The clutched shifted PTO is designed specifically for the Allison world transmission and provides an intermittent and continuous torque rating of 360 lb. ft. The transmission shall have two (2) power take off (PTO) mounting locations, one (1) in the 8:00 o'clock position and one (1) in the 1:00 o'clock position. Switches for the power take off shall be wired to the V-mux node to be used by the OEM. There shall be an on/off rocker switch labeled "Aerial Master" wired to a V-mux input and output with integral light wired to the v-mux input terminal of the switch that shall illuminate when the switch is on and the v-mux output is active. There shall be an on/off rocker switch labeled "Aerial PTO" activated by the "Aerial Master" rocker switch with an input to the V-mux node when the switch is on and an integral light activated by an independent V-mux output. The switches shall be located on dash.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MIDSHIP PUMP / GEARBOX

A temporary jackshaft driveline shall be installed by the chassis manufacturer to accommodate the mid-ship split shaft pump as specified by the apparatus manufacturer. Holes shall be provided in the frame as specified by the OEM for mounting. The midship pump/gearbox provisions shall be for a Hale QMAX pump or one which is a substantially adequate or equivalent. The Hale pump gearbox shall have an "S" (short) drop length. The ratio for the midship pump shall be 2.28:1 (23).

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PUMP SHIFT CONTROLS

One (1) pump shift control panel shall be located on the left-hand side of the engine tunnel, integrated with the shifter pod. The following shall be provided on the panel: a three (3) position locking toggle switch; an engraved PUMP ENGAGED identification light; and an engraved OK TO PUMP identification light. The pump shift control panel shall be black with a yellow border outline. One (1) label indicating pump instructions and the transmission shift selector position used for pumping shall be provided and located so it can be read from the driver's position per **NFPA 16.10.1.3**. The road mode shall be selected when the switch is in the up (forward) position and pump mode shall be selected when the switch is in the down (aft) position.

The center switch position shall exhaust air from both pump and roadsides of the pump gear box shift cylinder.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FUEL FILTER/WATER SEPARATOR

The fuel system shall have a fuel filter/water separator as a primary filter. A secondary fuel filter shall be included as approved by the engine manufacturer. An instrument panel lamp and audible alarm which indicates when water is present in the fuel-water separator shall also be included.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FUEL SHUTOFF VALVE

A fuel shutoff valve shall be installed in the fuel draw line at the primary fuel filter to allow the fuel filter to be changed without loss of fuel to the fuel pump.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRIC FUEL PRIMER

Integral to the engine assembly is an electric lift pump that serves the purpose of pre-filter fuel priming.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FUEL TANK

The fuel tank shall have a capacity of sixty-eight (68) gallons. The fuel tank shall be temporarily mounted, to be permanently relocated by the OEM. The tank and mounting straps as specified shall be included with the chassis along with components for permanent standard installation. The fuel tank fill ports shall be provided with two (2) left fill ports located one (1) in the forward position and one (1) in the middle position and the right fill port located in the middle position of the fuel tank. The Fuel tank shall have a cutoff valve installed if the system is a bottom draw system.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT AXLE

The front axle shall be a Meritor Easy Steer Non drive front axle, model number MFS-20, or one which is a substantially adequate or equivalent. The axle shall include a 3.74-inch drop and a 71.00-inch king pin intersection (KPI). The axle shall include a conventional style hub with a standard knuckle. The weight capacity for the axle shall be rated to 23,000 pounds. This rating shall require special approvals from the wheel manufacturers.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT AXLE WARRANTY

The front axle shall be warranted for five (5) years with unlimited miles under the general service application. Warranty shall take place at time of delivery. The front axle wheel bearings shall be lubricated with oil. The oil level can be visually checked via clear inspection windows in the front axle hubs. Two (2) nitrogen gas filled shock absorbers shall be provided and installed as part of the front suspension system. The front suspension shall include a ten (10) leaf spring pack in which the longest leaf measures 53.38-inch-long and 4.00 inches wide. The springs shall be shot peened for long life and include a military double wrapped front eye. The springs shall be bolted in place with M20 10.9 bolts and have replaceable rubber bushings in the spring eyes. The spring capacity shall be rated at 23,000 pounds.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

STEERING COLUMN/ WHEEL

The cab shall include a seven (7) position tilt, a 2.25-inch telescopic adjustment, and an 18.00 inch, four (4) spoke steering wheel located at the driver’s position. The steering column shall contain a horn button, self-canceling turn sign switch, four-way hazard switch and headlamp dimmer switch. The steering wheel shall be covered with black polyurethane foam padding.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRONIC POWER STEERING FLUID LEVEL INDICATOR

The power steering fluid shall be monitored electronically and shall send a signal to activate an audible alarm and visual warning in the instrument panel when fluid level falls below normal.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

POWER STEERING PUMP

The hydraulic power steering pump shall be gear driven from the engine. The pump shall be a balanced, positive displacement, sliding vane type. The power steering system shall include an oil to air passive cooler.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT AXLE CRAMP ANGLE

The chassis shall have a front axle cramp angle of 48-degrees to the left and 44-degrees to the right.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR AXLE

The rear axle shall be a Meritor model RT-52-185 tandem drive axle, or one which is a substantially adequate or equivalent. The axle shall include precision forged, single reduction differential gearing, and shall have a fire service rated capacity of 54,000 pounds.

The axle shall be built of superior construction and quality components to provide the rugged dependability needed to stand up to the fire industry’s demands. The axle shall include rectangular shaped, hot-formed housing with a standard wall thickness of 0.56 of an inch for extra strength and rigidity and a rigid differential case for high axle strength and reduced maintenance.

The axle shall have heavy-duty Hypoid gearing for longer life, greater strength and quieter operation. Industry-standard wheel ends for compatibility with both disc and drum brakes, and unitized oil seal technology to keep lubricant in and help prevent contaminant damage will be used.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR AXLE DIFFERENTIAL LUBRICATION

The rear axle differential shall be lubricated with oil.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR AXLE WARRANTY

The rear axle shall be warranted for five (5) years with unlimited miles under the general service application. Warranty shall take place at time of delivery.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR WHEEL BEARING LUBRICATION

The rear axle wheel bearings shall be lubricated with oil.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR AXLE DIFFERENTIAL CONTROL

The tandem axle chassis shall include an inter-axle differential lock, which shall allow both axles to be engaged as drive axles. The inter-axle differential lock shall be controlled by a locking rocker switch on the switch panel. The light on the switch shall illuminate with positive engagement of the inter-axle differential lock.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

VEHICLE TOP SPEED

The top speed of the vehicle shall be approximately 60 MPH +/-2 MPH at governed engine RPM.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR SUSPENSION

The tandem rear axle shall feature a Ridewell Dynalastic RD202 or one which is a substantially adequate or equivalent with accordion style elastomer springs. The suspension shall incorporate a straddle mount pedestal and urethane pivot bushings, preset load distribution and independent axle movement. The rear tandem suspension shall include 54.00-inch axle centers. The rear tandem suspension capacity shall be rated at 54,000 pounds.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR SHOCK ABSORBERS

Shock absorbers shall be supplied by the suspension manufacturer and installed on the rear axle suspension.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TIRE INTERMITTENT SERVICE RATING

The chassis shall be rated using Intermittent Service ratings provided to the emergency vehicle market by the tire manufacturers as the basis for determining the maximum vehicle load and speed.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT TIRE

The front tires shall be Goodyear 425/65R-22.5 20PR "L" tubeless radial G296 MSA mixed service tread (Or equivalent).

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR TIRE

The rear tires shall be Goodyear 12R-22.5 16PR "H" tubeless radial G622 RSD mixed service tread (Or equivalent).

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BALANCE WHEELS AND TIRES

All of the wheels and tires, including any spare wheels and tire assemblies, shall include Counteract brand balancing beads.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR AXLE RATIO

The rear axle ratio shall be 6.14:1.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TIRE PRESSURE INDICATOR

There shall be electronic chrome LED valve caps shipped loose for installation by the OEM which shall illuminate with a red LED when tire pressure drops 8psi provided. The valve caps are self-calibrating and set to the pressure of the tire upon installation.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT WHEEL

The front wheels shall be Accuride or Alcoa hub piloted, 22.50 inch X 12.25 inch polished aluminum wheels or one which is a substantially adequate equivalent.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR WHEEL

The rear wheels shall be Accuride or Alcoa hub piloted, heavy duty 22.50 inch X 8.25 inch aluminum wheels. Each outer wheel shall have a polished aluminum finish on the exterior surface and each inner wheel shall have a machine finish, or one which is a substantially adequate equivalent.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

WHEEL TRIM

The front wheels shall include stainless steel lug nut covers and stainless-steel baby moons shipped loose with the chassis for installation by the apparatus builder. The baby moons shall have cutouts for oil seal viewing when applicable.

The rear wheels shall include stainless steel lug nut covers and band mounted spring clip stainless steel high hats shipped loose with the chassis for installation by the apparatus builder.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BRAKE SYSTEM

A rapid build-up air brake system shall be provided. The air brakes shall include a three (3) air tank, four (4) reservoir system with one additional reserve for the air horns only. This system shall incorporate an ABS and electronic traction control. A pressure protection valve shall be installed to prevent the use of air horns or other air operated devices should the air system pressure drop below 80 psi.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT BRAKES

The front brakes shall be Meritor EX225 or one which is a substantially adequate or equivalent Disc Plus disc brakes with 17.00-inch vented rotors.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR BRAKES

The rear brakes shall be Meritor 16.50-inch X 7.00 inch S-cam drum type or one which is a substantially adequate or equivalent. The brakes shall feature a cast iron shoe.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PARK BRAKE WITH CONTROL

Upon application of the push-pull valve in the cab, the rear brakes will engage via mechanical spring force. This is accomplished by dual chamber rear brakes, satisfying the FMVSS parking brake requirements. A Meritor-Wabco or one which is a substantially adequate or equivalent manual hand control push-pull style valve shall operate the parking brake system. The control shall be yellow in color. The parking brake actuation valve shall be mounted on the center of the dash within easy access of the driver and the officer positions.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT AND REAR BRAKE SLACK ADJUSTERS

Front and rear brake automatic slack adjusters shall be installed on all axle brakes.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR DRYER

The brake system shall include a Wabco System Saver 1200 air dryer with an integral heater with a Metri-Pack sealed connector, or one which is a substantially adequate equivalent. The air dryer incorporates an internal turbo cutoff valve that closes the path between the air compressor and air dryer purge valve during the compressor "unload" cycle. The turbo cutoff valve allows purging of moisture and contaminants without the loss of turbo boost pressure. The air dryer shall be mounted behind the battery box on the left-hand side.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT BRAKE CHAMBERS

The front brakes shall be provided with MGM type 24 long stroke brake chambers.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR BRAKE CHAMBERS

The rear axle shall include TSE 30/36 brake chambers.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR COMPRESSOR

The air compressor provided for the engine shall be a Wabco® SS318 single cylinder pass-through drive type compressor which shall be capable of producing 18.7 CFM at 1200 engine RPMs or one which is a substantially adequate or equivalent. The air compressor shall feature a higher delivery efficiency translating to more air delivery per horsepower absorbed. The compressor shall include an aluminum cylinder head which shall improve cooling, reduce weight and decrease carbon formation. Superior piston and bore finishing technology shall reduce oil consumption and significantly increasing the system component life.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR GOVERNOR

An air governor shall be provided to control the cut-in and cut-out pressures of the engine mounted air compressor. The governor shall be calibrated to meet FMVSS requirements. The air governor shall be located on the air dryer bracket on the left frame rail behind the battery box.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MOISTURE EJECTORS

An automatic moisture ejector with a manual drain provision shall be installed on the wet tank of the air supply system. Manual pet-cock type drain valves shall be installed on all remaining reservoirs of the air supply system.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR SUPPLY LINES

The air system on the chassis shall be plumbed with color coded reinforced nylon tubing air lines. The primary (rear) brake line shall be green, the secondary (front) brake line red, the parking brake line orange and the auxiliary (outlet) will be blue.

Brass compression type fittings shall be used on the nylon tubing. All drop hoses shall include fiber reinforced neoprene covered hoses.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

WHEELBASE

The chassis wheelbase shall be 225.00 inches.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MAXIMUM OVERALL HEIGHT

The overall height of the apparatus shall not exceed 143” (11'-11”) from the ground. This measurement shall be taken with the tires properly inflated and with the apparatus in the

unloaded condition to ensure a maximum overall height. In order to provide the maximum overall height, proposed units using calculated weight as a means to achieve a lower overall height shall not be accepted. The measurement shall be taken at the highest point of the apparatus.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR OVERHANG

The chassis rear overhang shall be 64.00 inches.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRAME

The frame shall consist of double rails running parallel to each other with cross members forming a ladder style frame. The frame rails shall be formed in the shape of a "C" channel. Each rail shall be constructed of 110,000 psi minimum yield high strength low alloy steel. The frame and cross members shall carry a lifetime warranty to the original purchaser. A copy of the frame warranty shall be made available upon request. Proposals offering warranties for frames not including cross members shall not be considered.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRAME PAINT

The chassis frame rails and all attached parts such as but not limited to cross members, fuel tank, air reservoirs, reservoir hanger straps, fuel tank, frame cross members, bumper backing reinforcement plate, radiator skid plate, spring hangers, cab lock mounts and required bolts shall be protected against corrosion. Bidders shall clearly describe the type of protective coating to be used. Any type of undercoating that is tacky or can attract dirt is not acceptable.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT BUMPER

The chassis shall be equipped with a severe duty front bumper constructed from structural steel channel. The bumper material shall be 0.38 thick ASTM A36 steel which shall measure 12.00 inches high with a 3.05 inch flange and shall be 104.50 inches wide with angled front corners. The bumper shall be primed and painted as specified. The front bumper shall be extended approximately 24.00 inches ahead of the cab. The front bumper shall be painted the same as the lower cab color. The 24.00 inch extended front bumper shall include an apron constructed of 0.19 inch thick embossed aluminum tread plate. The apron shall be installed between the bumper and the front face of the cab affixed using stainless steel bolts attaching the apron to the top bumper flange.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT BUMPER DISCHARGE

The chassis shall include frame mounted 2.00 inch diameter plumbed pipe intended for use as a discharge trash line. The discharge pipe shall be routed from the left hand front splay rail area behind the bumper to the area rear of the front axle, ahead of the battery box. The discharge shall pipe shall be a, 2.00 inch stainless steel schedule 10 tube. The discharge shall include a Victaulic groove for connecting to the pump and discharge hose plumbing on each end of the tube. The apparatus manufacturer shall plumb the discharge pipe to the pump and shall provide all valves as required.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT BUMPER COMPARTMENT CENTER

The front bumper shall include a compartment in the bumper apron located in the center between the frame rails which may be used as a hose well. The compartment shall be constructed of 0.13 inch 5052-H32 grade aluminum and shall include drain holes in the bottom corners to allow excess moisture to escape. The compartment shall include a notched cover constructed of 0.19 inch thick bright embossed aluminum tread plate. The notch shall be located in the left front portion of the cover and shall be 4.00 inches in length with a 2.00 inches wide radius.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT BUMPER COMPARTMENT COVER HARDWARE

The front bumper compartment cover(s) shall include gas cylinder stays which shall hold the cover open. Each cover shall be held in the closed position via a flush push button style latch.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR HORN

The chassis shall include two (2) air horns, one (1) shall measure 21.00 inches long and one (1) shall measure 24.00 inches long, both with a 6.00 inch round flare. The air horns shall be trumpet style with a chrome finish on the exterior and a painted finish deep inside the trumpet.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR HORN LOCATION

The air horns shall be recess mounted in the front bumper face, one (1) on the right side of the bumper in the inboard position relative to the right hand frame rail and one (1) on the left side of the bumper in the inboard position relative to the left hand frame rail.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR HORN RESERVOIR

One (1) air reservoir, with a 1200 cubic inch capacity, shall be installed on the chassis to act as a supply tank for operating air horns. The reservoir shall be isolated with a 90 PSI pressure protection valve on the reservoir supply side to prevent depletion of the air to the air brake system.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRONIC SIREN SPEAKER

There shall be one (1) 100-watt speaker provided. The speaker shall include a flat mounting flange which shall be polished aluminum.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRONIC SIREN SPEAKER LOCATION

The electronic siren speaker shall be located on the front bumper face in the center position between the frame rails.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FEDERAL Q2B

There shall be a Federal Q2B siren installed on the apparatus. It shall be located on the front bumper on the left-hand side. It shall be operated via floor mounted push pedal on the driver’s side. Officers side shall have a push button mounted on the dash within reach of the officer.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT BUMPER TOW HOOKS

Two (2) heavy duty tow hooks, painted to match the frame components, shall be installed in the rearward position out of the approach angle area, bolted directly to the side of each chassis frame rail with grade 8 bolts.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB TILT SYSTEM

The entire cab shall be capable of tilting approximately 45-degrees to allow for easy maintenance of the engine and transmission. The system shall include an ignition interlock. IT shall be necessary to activate the master battery switch and set the park brake in order to tilt the cab. As a third precaution the ignition switch must be turned off to complete the cab tilt interlock safety circuit. A steel safety assembly painted yellow shall be installed on the right-side cab lift cylinder to prevent accidental cab lowering. A cable release system shall also be provided to retract the safety channel assembly from the lift cylinder to allow the lowering of the cab.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB TILT LIMIT SWITCH

A cab tilt limit switch shall be installed. Adjustment to the limit by the apparatus manufacturer shall be available to accommodate additional equipment.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB TILT CONTROL RECEPTACLE

The cab tilt control cable shall include a receptacle which shall be temporarily located on the right-hand chassis rail rear of the cab to provide a place to plug in the cab tilt remote control pendant. The remote-control pendant shall include 20.00 feet of cable.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB TILT LOCK DOWN INDICATOR

The cab dash shall include a message center which shall alert the driver when the cab is unlocked and ajar. In addition to the alert message and audible alarm shall sound when the cab is unlocked and ajar ad the parking brake is released.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CLIMATE CONTROL

A ceiling mounted combination defroster and cabin heating and air conditioning system shall be located above the engine tunnel area. The cab shall also include a high BTU cooling and heating system capable of keeping the cab at a comfortable temperature year-round.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CLIMATE CONTROL DRAIN

The climate control system shall include a gravity drain for water management. The gravity drain shall remove condensation from the air conditioning system without additional mechanical assistance.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CLIMATE CONTROL ACTIVATION

The heating, defrosting and air conditioning controls shall be located on the center dash panel in the lower left-hand side, in a position which is easily accessible to the driver. The climate control shall be activated by a rotary switch.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HVAC OVERHEAD COVER PAINT

The overhead HVAC cover shall be determined at prebuild conference.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

A/C CONDENSER LOCATION

A roof mounted A/C condenser shall be installed on the left side of the cab, mid-roof.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

A/C COMPRESSOR

The air-conditioning compressor shall be a belt driven, engine mounted compressor. The compressor shall be compatible with R134-a refrigerant.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

UNDER CAB INSULATION

The underside of the cab tunnel surrounding the engine and the underside of the entire cab floor shall be lined with multi-layer insulation, engineered for application inside diesel engine compartments.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR TRIM FLOOR

The floor of the cab shall be covered with a multi-layer mat consisting of sound absorbing closed cell foam with a non-slip vinyl surface with a pebble grain finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR TRIM

The cab interior shall include trim on the front ceiling, rear crew ceiling, and the cab walls. It shall be easily removable to assist in maintenance. The trim shall be constructed of insulated vinyl over a hard board backing.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR WALL INTERIOR TRIM

The rear wall of the cab shall be trimmed with vinyl.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HEADER TRIM

The cab interior shall feature header trim over the driver and officer dash constructed of aluminum.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRIM CENTER DASH

The main center dash area shall be constructed of aluminum plate. There shall be four (4) holes located on the top of the dash near each outer edge of the electrical access cover for ventilation.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRIM LH DASH

The left-hand dash shall be constructed of aluminum plate for a perfect fit around the instrument panel. The left-hand dash shall offer lower vertical surface area to the left and right of the steering column to accommodate control panels.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRIM RH DASH

The right-hand dash shall be constructed of aluminum plate and shall include a glove compartment with a hinged door and a Mobile Data Terminal (MDT) provision. The glove compartment size will measure 14.00 inches wide X 6.38 inches high X 5.88 inches deep. The MDT provision shall be provided above the glove compartment.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE TUNNEL TRIM

The cab engine tunnel shall be covered with a multi-layer mat for heat and noise reduction.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

POWER POINT DASH MOUNT

The cab shall include one (1) 12-volt cigarette lighter type receptacles in the cab dash to provide a power source for 12-volt electrical equipment. The receptacles shall be wired battery direct.

The cab shall also include one (1) Dual universal serial bus (USB) charging receptacles in the cab dash rocker switch cutout to provide a power source for USB chargeable electrical equipment. Each USB receptacle shall include one (1) USB port capable of a 5 Volt-1-amp output and one (1) USB port capable of a 5 Volt-2.1-amp output. The receptacles shall be wired battery direct and include a backlit legend.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

STEP TRIM

Each cab entry door shall include a three-step entry. The first step closest to the ground shall be constructed of polished aluminum Grip Strut. The step shall feature a splash guard to reduce water and debris from splashing into the step. The splash guard shall have an opening on the outer edge to allow debris and water to flow through rather than becoming trapped within the stepping surface. The lower step shall be mounted to a frame which is integral with the construction of the cab for rigidity and strength. The middle step shall be integral with the cab construction and shall be trimmed with a Flex-Tred adhesive grit surface material.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

UNDER CAB ACCESS DOOR

The cab shall include an aluminum access door in the left crew step riser painted to match the cab interior paint with a push and turn latch. The under-cab access door shall provide access to the diesel exhaust fluid fill.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR DOOR TRIM

The interior trim on the doors of the cab shall consist of an aluminum panel constructed of aluminum plate. The door panels shall include a painted finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DOOR TRIM CUSTOMER NAMEPLATE

The interior door trim on the front doors shall include a customer nameplate which states the vehicle was custom built for their Department.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB DOOR TRIM REFLECTIVE

The interior of each door shall include high visibility reflective tape. A white reflective tape shall be provided vertically along the rear outer edge of the door. The lowest portion of each door skin shall include a reflective tape chevron with red and white stripes. The chevron tape shall measure 6.00 inches in height.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR GRAB HANDLE "A" PILLAR

There shall be two (2) rubber covered grab handles installed inside the cab, one on each "A" post at the left and right door openings. The handles shall assist personnel in entering and exiting the cab.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR GRAB HANDLE FRONT DOOR

Each front door shall include one (1) ergonomically contoured cast aluminum handle mounted horizontally on the interior door panels. The handles shall feature a textured black powder coat finish to assist personnel entering and exiting the cab.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR GRAB HANDLE REAR DOOR

A black powder coated cast aluminum assist handle shall be provided on the inside of each rear crew door. The handle shall extend horizontally the width of the window just above the windowsill. The handle shall assist personnel in exiting and entering the cab.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR SOFT TRIM COLOR

The cab interior soft trim surfaces shall be gray in color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR TRIM SUNVISOR

The header shall include two (2) sun visors, one each side forward of the driver and officer seating positions above the windshield. Each sun visor shall be covered with padded vinyl trim.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR FLOOR MAT COLOR

The cab interior floor mat shall be gray in color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB PAINT INTERIOR DOOR TRIM

The inner door panel surfaces shall be painted with multi-tone silver gray texture finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HEADER TRIM INTERIOR PAINT

The metal surfaces in the header area shall be coated with multi-tone silver gray texture finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRIM CENTER DASH INTERIOR PAINT

The entire center dash shall be coated with multi-tone silver gray texture finish. Any accessory pods attached to the dash shall also be painted this color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRIM LH DASH INTERIOR PAINT

The left-hand dash shall be painted with a multi-tone silver gray texture finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRIM RIGHT HAND DASH INTERIOR PAINT

The right-hand dash shall be painted with multi-tone silver gray texture finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DASH PANEL GROUP

The main center dash area shall include three (3) removable panels located one (1) to the right of the driver position, one (1) in the center of the dash and one (1) to the left of the officer position. The center panel shall be within comfortable reach of both the driver and officer.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SWITCHES CENTER PANEL

The center dash panel shall include six (6) switch positions in the upper left portion of the panel.

A rocker switch with a blank legend installed directly above shall be provided for any position without a switch and legend designated by a specific option. The non-specified switches shall be two-position, black switches with a green indicator light. Each blank switch legend can be custom engraved by the body manufacturer. All switch legends shall have backlighting provided.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SWITCHES LEFT PANEL

The left dash panel shall include four (4) switches. There shall be three (3) across the top of the panel with one (1) below. Two (2) of the top row of switches shall be rocker type and the left one (1) shall be the windshield wiper/washer control switch. The lower switch shall be a rocker type switch.

A rocker switch with a blank legend installed directly above shall be provided for any position not designated by a specific option. The non-designated switches shall be two-position, black switches with a green indicator light. Each blank switch legend can be custom engraved by the body manufacturer. All switch legends shall have backlighting provided.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SWITCHES RIGHT PANEL

The right dash panel shall include no rocker switches or legends.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT BELT WARNING

A seat belt warning system, integrated with the Vehicle Data Recorder system, shall be installed for each seat within the cab. The system shall provide a visual warning indicator and an audible alarm.

The warning system shall activate when any seat is occupied with a minimum of 40 pounds, the corresponding seat belt remains unfastened, and the park brake is released. The warning system shall also activate when any seat is occupied, the corresponding seat belt was fastened in an incorrect sequence, and the park brake is released. Once activated, the visual indicators and audible alarm shall remain active until all occupied seats have the seat belts fastened.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT MATERIAL

The seats shall include military grade high strength, wear resistant fabric made of durable ballistic polyester. A synthetic coating shall be bonded to the back side of the material to help protect the seats from UV rays and from being saturated or contaminated by fluids. The fabric shall include the integration VALORTech XD®, a proprietary antimicrobial agent, designed to resist toxicity and contaminants or one which is a substantially adequate or equivalent.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT COLOR

All seats supplied with the chassis shall be gray in color. All seats shall include red seat belts.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT DRIVER

The driver's seat shall be made of air suspension. The four-way seat shall feature a 2.00 inches vertical travel air suspension and manual fore and aft adjustment with ample travel.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT BACK DRIVER

The driver's seat shall include a standard seat back incorporating the all belts to seat feature (ABTS) as described above. The seat back shall recline up to 19-degrees.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT MOUNTING DRIVER

The driver's seat shall be installed in an ergonomic position in relation to the cab dash.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OCCUPANT PROTECTION DRIVER

The driver's position shall be equipped with the Advanced Protection System™ (APS). The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

The driver's seating area APS shall include:

- Advanced seat belt system - retractor pre-tensioner tightens the seat belt around the driver, securing the occupant in the seat and the load limiter plays out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.
 - Large side curtain airbag - protects the driver's head, neck, and upper body from dangerous cab side surfaces and contact points with intrusive surfaces as a result of a collision as well as provides ejection mitigation protection to the driver in a qualifying event by covering the window and the upper portion of the door.
1. Dual knee airbags with energy management mounting - protects the driver's lower body from dangerous surface contact injuries, acceleration injuries, and from intrusion as well as locks the lower body in place so the upper body shall be slowed by the load limiting seat belt.

Steering wheel airbag - protects the driver's head, neck, and upper torso from contact injuries, acceleration injuries, and contact points with intrusive surfaces as a result of a collision.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT OFFICER

The officer's seat shall be a slide adjustment seat. The seat shall feature a tapered and padded seat, and cushion. The two-way, manually adjustable tracks shall include ample movement of fore and aft travel.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT BACK OFFICER

The officer's seat back shall include an IMMI brand SmartDock® Gen 2 hands-free self-contained breathing apparatus (SCBA) holder or one which is a substantially adequate or equivalent. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.

The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.

The seat back shall include a removable padded cover which shall be provided over the SCBA cavity.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT MOUNTING OFFICER

The officer's seat shall be installed in an ergonomic position in relation to the cab dash.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OCCUPANT PROTECTION OFFICER

The officer's position shall be equipped with the Advanced Protection System™ (APS). The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

The officer's seating area APS shall include:

- Advanced seat belt system - retractor pre-tensioner tightens the seat belt around the officer, securing the occupant in the seat and the load limiter plays out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.

- Large side curtain airbag - protects the officer's head, neck, and upper body from dangerous cab side surfaces and contact points with intrusive surfaces as a result of a collision as well as provides ejection mitigation protection to the officer in a qualifying event by covering the window and the upper portion of the door.

Knee airbags - protects the officer's lower body from dangerous surface contact injuries, acceleration injuries, and from contact points with intrusive surfaces as a result of a collision as well as locks the lower body in place so the upper body shall be slowed by the load limiting seat belt.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT BELT ORIENTATION CREW

The crew position seat belts shall follow the standard orientation which extends from the outboard shoulder extending to the inboard hip.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT REAR FACING OUTER LOCATION

The crew area shall include two (2) rear facing crew seats, which include one (1) located directly behind the left side front seat and one (1) located directly behind the right-side front seat.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT CREW REAR FACING OUTER

The crew area shall include a seat in the rear facing outboard position. The seat shall feature an 18.00 inches wide padded seat cushion. The seat and cushion shall be spring load hinged and compact in design for additional room and shall remain in the stored position until occupied.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT BACK REAR FACING OUTER

The crew area seat backs shall include an IMMI brand SmartDock® Gen 2 hands-free self-contained breathing apparatus (SCBA) holder or one which is a substantially adequate or equivalent. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.

The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.

The seat back shall include a removable padded cover which shall be provided over the SCBA cavity.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT MOUNTING REAR FACING OUTER

The rear facing outer seats shall offer special mounting positions which shall be 2.00 inches towards the rear wall offering additional space between the front seats and the outer rear facing seats.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OCCUPANT PROTECTION RFO

The rear facing outer seat position(s) shall be equipped with the Advanced Protection System™ (APS). The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

Each rear facing outer seating position APS shall include:

- APS advanced seat belt system - retractor pre-tensioners tighten the seat belts around each occupant, securing the occupants in seats and load limiters play out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.

Side curtain airbag - protects each occupant's head, neck, and upper body from dangerous cab side surfaces and contact points with intrusive surfaces as a result of a collision as well as provides ejection mitigation protection to each occupant in a qualifying event by covering the windows and walls adjacent to each seating position with an airbag custom designed for each cab configuration.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT FORWARD FACING CENTER LOCATION

The crew area shall include two (2) forward facing center crew seats with both located at the center of the rear wall.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT CREW FORWARD FACING CENTER

The crew area shall include a seat in the forward-facing center position. The seat shall feature an 18.00 inches wide padded seat cushion. The seat and cushion shall be spring load hinged and compact in design for additional room and shall remain in the stored position until occupied.

The seat shall feature an all belts to seat (ABTS) style of safety restraint. The ABTS feature shall include a three-point shoulder harness with the lap belt and automatic retractor as an integral part of the seat assembly. The buckle portion of the seat belt shall extend from the seat base towards the driver position within easy reach of the occupant.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT BACK FORWARD-FACING CENTER

The crew area seat backs shall include an IMMI brand SmartDock® Gen 2 hands-free self-contained breathing apparatus (SCBA) holder or one which is a substantially adequate or equivalent. The hands-free holder shall meet NFPA 1901-03 9G dynamic requirements for cylinder restraint systems for use in crew compartments of emergency response vehicles. The bracket shall accommodate and secure most types of self-contained breathing apparatus cylinders.

The hands-free holder shall consist of a back plate, bottom cradle, non-marring top claws, and claw height adjustment knob. The height adjustment knob shall allow for easy adjustment of the claws to the SCBA. The hands-free holder's claws shall lock from inertial forces to prevent the SCBA from becoming a projectile in the event of a crash to meet the NFPA 1901-03 standard for SCBA retention. The SCBA holder shall offer single-motion insertion into the claws and hands-free release when the SCBA fitted seat occupant rises.

The seat back shall include a removable padded cover which shall be provided over the SCBA cavity.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OCCUPANT PROTECTION FFC

The forward-facing center seat position(s) shall be equipped with the Advanced Protection System™ (APS). The APS shall selectively deploy integrated systems to protect against injuries in qualifying frontal impact, side impact, and rollover events. The increase in survivable space and security of the APS shall also provide ejection mitigation protection.

Each forward-facing center seating position APS shall include:

- APS advanced seatbelt system - retractor pre-tensioners tighten the seat belts around each occupant, securing the occupants in seats and load limiters play out some of the seat belt webbing to reduce seat belt to chest and torso force upon impact as well as mitigate head and neck injuries.

Side curtain airbag - provides ejection mitigation protection to each occupant in a qualifying event by covering the windows and walls adjacent to crew seating with an airbag custom designed for each cab configuration.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT FRAME FORWARD FACING

The forward-facing center seating positions shall include an enclosed seat frame located and installed on the rear wall. The seat frame shall be constructed of aluminum plate. The seat box shall be painted with the same color as the remaining interior.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT FRAME FORWARD FACING STORAGE ACCESS

There shall be two (2) access points to the seat frame storage area, one (1) on each side of the seat frame. Each access point shall be covered by a hinged door which measures 15.00 inches in width X 10.63 inches in height.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT MOUNTING FORWARD FACING CENTER

The forward-facing center seats shall be installed facing the front of the cab.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB FRONT UNDERSEAT STORAGE ACCESS

The left and right under seat storage areas shall have a solid aluminum hinged door with non-locking latch.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SEAT COMPARTMENT DOOR FINISH

All under seat storage compartment access doors shall have a multi-tone silver gray texture finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

WINDSHIELD WIPER SYSTEM

The cab shall include a dual arm wiper system which shall clear the windshield of water, ice and debris. There shall be two (2) windshield wipers; each shall be affixed to a radial arm. The wiper motor shall be activated by an intermittent wiper control located within easy reach of the driver's position.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRONIC WINDSHIELD FLUID LEVEL INDICATOR

The windshield washer fluid level shall be monitored electronically. When the washer fluid level becomes low the yellow "Check Message Center" indicator light on the instrument panel shall illuminate and the message center in the dual air pressure gauge shall display a "Check Washer Fluid Level" message.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB DOOR HARDWARE

The cab entry doors shall be equipped with exterior pull handles, suitable for use while wearing firefighter gloves. The handles shall be made of aluminum with a chrome plated finish.

The interior exit door handles shall be flush paddle type with a black finish, which are incorporated into the upper door panel.

All cab entry doors shall include locks which are keyed alike. The door locks shall be designed to prevent accidental lockout.

The exterior pull handles shall include a scuff plate behind the handle constructed of polished stainless steel to help protect the cab finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DOOR LOCKS

Each cab entry door shall include a manually operated door lock. Each door lock may be actuated from the inside of the cab by means of a red knob located on the paddle handle of the respective door or by using a key from the exterior. The door locks are designed to prevent accidental lock out.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

GRAB HANDLES

The cab shall include one (1) 18.00 inch knurled, anti-slip, one-piece exterior assist handle behind each cab door. The assist handle shall be made of stainless steel and be 1.25 inch

diameter to enable easy grabbing with the gloved hand. Each assist handle shall include a stainless-steel plate which saves the cab from scuffs through continued use of the handle.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REARVIEW MIRRORS

Retrac Aerodynamic West Coast style single vision mirror heads shall be provided and installed on each of the front cab doors.

The mirrors shall be mounted via 1.00-inch diameter tubular stainless steel arms to provide a rigid mounting to reduce mirror vibration.

The mirrors shall measure 8.00 inches wide X 19.00 inches high and shall include an 8.00-inch convex mirrors with a stainless steel back, model 980-4, installed below the flat glass to provide a wider field of vision. The flat mirrors shall be motorized with remote horizontal and vertical adjustment. The control switches shall be mounted within easy reach of the driver. The convex mirrors shall be manually adjustable. The flat mirror glass shall be heated for defrosting in severe cold weather conditions.

The mirror backs shall be constructed of vacuum formed chrome plated ABS plastic housings that are corrosion resistant and shall include an amber marker light. The mirrors shall be manufactured with the finest quality non-glare glass.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REARVIEW MIRROR HEAT SWITCH

The heat for the rearview mirrors shall be controlled through a rocker switch on the dash in the switch panel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

EXTERIOR TRIM REAR CORNER

There shall be mirror finish stainless steel scuff plates on the outside corners at the back of the cab. The stainless-steel plate shall be affixed to the cab using two sided adhesive tape.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB FENDER

Full width wheel well liners shall be installed on the extruded cab to limit road splash and enable easier cleaning. Each two-piece liner shall consist of an inner liner 16.00 inches wide made ABS composite and an outer fenderette 3.50 inches wide made of polished stainless steel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MUD FLAPS

The front wheel wells shall have mud flaps installed on them. As well as the rear axles on the apparatus.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

IGNITION

A master battery system with a keyless start ignition system shall be provided. Each system shall be controlled by a one-quarter turn switch, both of which shall be mounted to the left of the steering wheel on the dash. A chrome push type starter button shall be provided adjacent to the master battery and ignition switches.

Each switch shall illuminate a green LED indicator light on the dash when the respective switch is placed in the "ON" position.

The starter button shall only operate when both the master battery and ignition switches are in the "ON" position.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BATTERY

The single start electrical system shall include six (6) 925 CCA batteries with a 210-minute reserve capacity and 4/0 welding type dual path starter cables per.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BATTERY TRAY

The batteries shall be installed within two (2) steel battery trays located on the left side and right side of the chassis, securely bolted to the frame rails. The battery trays shall be coated with the same material as the frame.

The battery trays shall include drain holes in the bottom for sufficient drainage of water. A durable, non-conducting, interlocking mat shall be installed in the bottom of the trays to allow for air flow and help prevent moisture build up. The batteries shall be held in place by non-conducting phenolic resin hold down boards.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BATTERY BOX COVER

Each battery box shall include a steel cover which protects the top of the batteries. Each cover shall be coated the same as the frame and shall include flush latches which shall keep the cover secure as well as a black powder coated handle for convenience when opening.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BATTERY CABLE

The starting system shall include cables which shall be protected by 275 degree F. minimum high temperature flame retardant loom, sealed at the ends with heat shrink and sealant.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BATTERY JUMPER STUD

The starting system shall include battery jumper studs. These studs shall be located in the forward most portion of the driver's side lower step, 8.00 inches apart. The studs shall allow the vehicle to be jump started, charged, or the cab to be raised in an emergency in the event of battery failure.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ALTERNATOR

The charging system shall include a 320-amp Leece-Neville 12 volt alternator, or one which is a substantially adequate equivalent. The alternator shall include a self-exciting integral regulator. The alternator shall meet all current applicable NFPA 1901 Edition requirements for performance.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec . _____

STARTER MOTOR

The single start electrical system shall include a Delco brand starter motor.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BATTERY CONDITIONER

A Kussmaul 1200 battery conditioner shall be supplied. The battery conditioner shall be mounted in the cab in the LH rear facing outer seating position.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BATTERY CONDITIONER DISPLAY

A Kussmaul battery conditioner display or substantial equivalent shall be supplied. The battery conditioner display shall be mounted in the cab, viewable through the cab mid side window behind the left front door.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AUXILIARY AIR COMPRESSOR

A Kussmaul Auto Pump 120V air compressor or substantial equivalent shall be supplied. The air compressor shall be installed behind the officer's seat. The air compressor shall be plumbed to the air brake system to maintain air pressure.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB/CHASSIS ELECTRICAL OUTLET

There shall be a 120V 20A power pre-wired into the cab to a junction box behind the driver's seat. 12/3 wiring terminating in the junction box shall be routed to behind the cab on the chassis frame rails with a 15.00 feet long coil for connection to apparatus 120V power supply.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRICAL INLET LOCATION

An electrical inlet shall be installed on the left-hand side of cab over the wheel well.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRICAL INLET

A Kussmaul 20-amp super auto-eject electrical receptacle shall be supplied. It shall automatically eject the plug when the starter button is depressed.

A single item or an addition of multiple items must not exceed the rating of the electric inlet that it's connected to.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRICAL INLET CONNECTION

The electrical inlet shall be connected to the battery conditioner and the air pump.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRICAL INLET COLOR

The electrical inlet connection shall include a red cover.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HEADLIGHTS

The cab front shall include four (4) rectangular LED headlamps with separate high and low beams mounted in bright chrome bezels.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT TURN SIGNALS

The front fascia shall include two (2) Whelen model 600 4.00 inches X 6.00 inches programmable amber LED turn signals which shall be installed in an outboard position within the front fascia chrome bezel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HEADLIGHT LOCATION

The headlights shall be located on the front fascia of the cab directly below the front warning lights.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIDE TURN/MARKER LIGHTS

The sides of the cab shall include two (2) LED round side marker lights which shall be grommet mounted just behind the front cab radius corners.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MARKER AND ICC LIGHTS

In accordance with FMVSS, there shall be five (5) LED cab marker lamps designating identification, center and clearance provided. These lights shall be installed on the face of the cab within full view of other vehicles from ground level.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HEADLIGHT AND MARKER LIGHT ACTIVATION

The headlights and marker lights shall be controlled via a button and or switch. There shall be a dimmer switch or control to adjust the brightness of the dash lights. The headlamps shall be equipped with the "Daytime Running" light feature, which shall illuminate the headlights to 80% brilliance when the battery master switch is in the "On" position and the parking brake is released.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

GROUND LIGHTS

Each door shall include a LED ground light mounted to the underside of the cab step below each door. The lights shall include a polycarbonate lens, a housing which is vibration welded and LEDs which shall be shock mounted for extended life. The ground lighting shall be activated by the opening of the door on the respective cab side, when the parking brake is set.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

LOWER CAB STEP LIGHTS

The middle step located at each door shall include a recess mounted 4.00 inch round LED light which shall activate with the opening of the respective door.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERMEDIATE STEP LIGHTS

The intermediate step well area at each door shall include an LED light within a chrome housing. The Egress step lights shall provide visibility to the step well area for the first step exiting the vehicle. The Egress step lights shall activate with Entry step lighting.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

LIGHTBAR PROVISION

There shall be two (2) light bars installed on the cab roof. The light bars shall be provided and installed by chassis MFG. The light bar installation shall include mounting and wiring to a control switch on the cab dash.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB FRONT LIGHTBAR

The lightbar provisions shall be for two (2) Whelen brand Freedom FN4MINI lightbars mounted on the left and right side of the front cab roof, each at a 30-degree angle or one which is a substantially adequate or equivalent. Each lightbar shall be 21.50 inches in length. Each lightbar shall feature three (3) red LED lights modules and two (2) clear LED light modules. The clear

lights shall be disabled with park brake engaged. The cables shall exit the lightbars near the center of each lightbar.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

LIGHTBAR SWITCH

The light bar shall be controlled through a switch or button.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIDE SCENE LIGHTS

The side of the cab shall include two (2) Whelen model 600 series 6SC0ENZR model scene lights, or one which is a substantially adequate or equivalent, one (1) each side which shall be surface mounted. The Whelen lights shall offer LED lighting at a gradient 32-degree angle. The lamps shall draw 2 amps and generate 1500 lumens.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIDE SCENE LIGHT LOCATION

The scene lighting located on the left and right sides of the cab shall be mounted in the upper forward portion of the cab between the front and rear crew doors.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIDE SCENE ACTIVATION

The scene lights shall be activated by two (2) switches or buttons one (1) for each light, and by opening the respective side cab doors.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR OVERHEAD LIGHTS

The cab shall include a two-section, red and clear Weldon LED dome lamp located over each door or one which is a substantially adequate or equivalent. The dome lamps shall be rectangular in shape and shall measure approximately 7.00 inches in length X 3.00 inches in width with a black colored bezel. The clear portion of each lamp shall be activated by opening the respective door and via the multiplex display and both the red and clear portion can be activated by individual push lenses on each lamp.

An additional incandescent three (3) light module with dual map lights shall be located over the engine tunnel which can be activated by individual switches on the lamp.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE COMPARTMENT LIGHT

There shall be a LED NFPA compliant light mounted under the engine tunnel for area work lighting on the engine. The light shall include a polycarbonate lens, a housing which is vibration welded and a bulb which shall be shock mounted for extended life. The light shall activate automatically when the cab is tilted.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DO NOT MOVE APPARATUS LIGHT

The front headliner of the cab shall include a flashing red Whelen Ion LED light clearly labeled "Do Not Move Apparatus" or one which is a substantially adequate or equivalent. In addition to the flashing red light, an audible alarm shall be included which shall sound while the light is activated.

The flashing red light shall be located centered left to right for greatest visibility.

The light and alarm shall be interlocked for activation when either a cab door is not firmly closed or an apparatus compartment door is not closed, and the parking brake is released.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MASTER WARNING SWITCH

A master switch shall be included, as a switch or button which shall be labeled "E Master" for identification. The button shall feature control over all devices wired through it. Any warning device switches left in the "ON" position when the master switch is activated shall automatically power up.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HEADLIGHT FLASHER

An alternating high beam headlight flashing system shall be installed into the high beam headlight circuit which shall allow the high beams to flash alternately from left to right.

Deliberate operator selection of high beams will override the flashing function until low beams are again selected. Per NFPA, these clear flashing lights will also be disabled "On Scene" when the park brake is applied.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HEADLIGHT FLASHER SWITCH

The flashing headlights shall be activated with a switch or button.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INBOARD FRONT WARNING LIGHTS

The cab front fascia shall include two (2) Whelen 600 series Super LED front warning lights in the left and right inboard positions or one which is a substantially adequate or equivalent. The lights shall feature multiple flash patterns including steady burn for solid colors and multiple flash patterns for split colors. The lights shall be mounted to the front fascia of the cab within a chrome bezel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INBOARD FRONT WARNING LIGHTS COLOR

The warning lights mounted on the cab front fascia in the inboard positions shall be red.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT WARNING SWITCH

The front warning lights shall be controlled via a switch or button. This switch or button shall be clearly labeled for identification.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERSECTION WARNING LIGHTS

The chassis shall include two (2) Whelen M6 series Super LED intersection warning lights, or one which is a substantially adequate or equivalent, one (1) each side. The lights shall feature multiple flash patterns including steady burn.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERSECTION WARNING LIGHTS COLOR

The intersection lights shall be red.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERSECTION WARNING LIGHTS LOCATION

The intersection lights shall be mounted centered front to rear on the flat portion of the side of the bumper tail.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIDE WARNING LIGHTS

The cab sides shall include two (2) Whelen M6 Super LED warning lights, or one which is a substantially adequate or equivalent, one (1) on each side. The lights shall feature multiple flash

patterns including steady burn for solid colors and multiple flash patterns for split colors. The lights shall be mounted to the sides of the cab within a chrome bezel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIDE WARNING LIGHTS COLOR

The warning lights located on the side of the cab shall be red.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIDE WARNING LIGHTS LOCATION

The warning lights on the side of the cab shall be mounted over the front wheel well directly over the center of the front axle.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIDE AND INTERSECTION WARNING SWITCH

The side warning lights shall be controlled via a switch or button. This switch or button shall be clearly labeled for identification.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR WARNING LIGHTS

The cab shall be prewired and contain a cutout for a Whelen TACTL5 control head or one which is a substantially adequate or equivalent within the center dash switch panels for body builder installation of the controller.

The Prewire shall provide power and ground for the controller behind the center dash. The power to the control head shall be ignition switched and activation dependent upon the state of the controllers switched position upon ignition.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTERIOR DOOR OPEN WARNING LIGHTS

The interior of each door shall include one (1) 15.87-inch-long X 0.73-inch-tall amber Weldon LED warning light or one which is a substantially adequate or equivalent. The light shall be located on the upper portion of the door frame to be visible when a person is standing in front of the door while entering or exiting the cab. Each light shall activate with a scrolling directional flash pattern which moves from inside to outside when the door is in the open position. This shall serve as a warning to oncoming traffic.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIREN CONTROL HEAD

A Whelen 295HFS2 or one which is a substantially adequate or equivalent electronic siren control head with remote amplifier shall be provided and flush mounted in the switch panel with a location specific to the customer’s needs. The siren shall feature 200-watt output, hands free mode and shall be in “standby” mode awaiting instruction. The siren shall offer radio broadcast, public address, wail, yelp, or piercer tones and hands-free operation which shall allow the operator to turn the siren on and off from the horn ring if a horn/siren selector switch option is also selected.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HORN BUTTON SELECTOR SWITCH

A switch or button shall be provided to allow control of either the electric horn or the air horn from the steering wheel horn button. The electric horn shall sound by default when the selector switch is in either position to meet FMCSA requirements.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR HORN ACTIVATION

The air horn activation shall be accomplished through the steering wheel button for the driver and by a single right-hand side lanyard cable accessible to the officer. An air horn activation circuit shall be provided to the chassis harness pump panel harness connector.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BACK-UP ALARM

A backup alarm shall be installed at the rear of the chassis with an output level of 107 dB. The alarm shall automatically activate when the transmission is placed in reverse.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INSTRUMENTATION

An ergonomically designed instrument panel shall be provided. Each gauge shall be backlit with LED lamps. The instrumentation shall include gages and warning light / audible alarms for providing the driver with complete knowledge of the apparatus status. There shall be controls/switches for all components on the apparatus placed for the driver and officers ease of use. In the switch or button panels there will be a minimum of six (6) open spaces for future use. The layout of all the instrumentation will be finalized at the pre-construction conference.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BACKLIGHTING COLOR

The instrumentation gauges and the switch panel legends shall be backlit using red LED backlighting.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

RADIO

A Panasonic or one which is a substantially adequate or equivalent radio with weather band, AM/FM stereo receiver, compact disc player, and four (4) speakers shall be installed in the cab. The radio shall be installed above the driver position. The speakers shall be installed inside the cab with two (2) speakers recessed within the headliner of the front of the cab just behind the windshield and two (2) speakers on the upper rear wall of the cab.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AM/FM ANTENNA

A small antenna shall be located on the left-hand side of the cab roof for AM/FM and weather band reception.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAMERA

A heavy-duty rearview camera system shall be supplied. One (1) box shaped camera shall be shipped loose for OEM installation in the body to afford the driver a clear view to the rear of the vehicle and one (1) camera with a teardrop shaped chrome plated housing shall be mounted on the officer side of the cab below windshield ahead of the front door at approximately the same level as the cab door handle.

The cameras shall be wired to a single display located on the driver’s side dash. The rear camera shall activate when the transmission is placed in reverse and the right camera shall activate with the right-side turn signal.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

COMMUNICATION ANTENNA

An antenna base, for use with an NMO type antenna, shall be mounted on the right-hand front corner of the cab roof so not to interfere with light bars or other roof mounted equipment installed by Spartan Chassis. The antenna base shall be an Antenex model MABVT8 made for either a 0.38 inch or 0.75 inch receiving hole in the antenna and shall include 17.00 foot of RG58 A/U cable with no connector at the radio end of the cable. The antenna base design provides the most corrosion resistance and best power transfer available from a high temper all brass construction and gold-plated contact design.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

COMMUNICATION ANTENNA CABLE ROUTING

The antenna cable shall be routed from the antenna base mounted on the roof to the area inside the center rocker switch console.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TWO-WAY RADIOS

A radio wire conduit with a pull wire included shall be installed and routed from behind the dash to under the officer's seat for radio installation by the customer. The officer's under seat storage area shall include an access hole for the conduit cut into the rear face of the seat box. The hole shall be approximately 1.00 inch from the bottom and 1.00 from the inner wall of the seat box.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB EXTERIOR PROTECTION

The cab face shall have a removable plastic film installed over the painted surfaces to protect the paint finish during transport to the body manufacturer.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FIRE EXTINGUISHER

A 2.50-pound D.O.T approved fire extinguisher with BC rating shall be shipped loose with the cab.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ROAD SAFETY KIT

The cab and chassis shall include one (1) emergency road safety triangle kit.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DOOR KEYS

The cab and chassis shall include a total of four (4) door keys for the manual door locks.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DIAGNOSTIC SOFTWARE OCCUPANT PROTECTION

Diagnostic software for all systems listed below shall be provided

- (1) Cummins Engine
- (1) Allison Automatic Transmission
- (1) Vehicle Data Recorder

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CHASSIS OPERATION MANUAL

There shall be two (2) digital copies of the chassis operation manual provided with the chassis. The digital data shall include a parts list specific to the chassis model.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE, TRANSMISSION AND PUMP OPERATION MANUALS

The following manuals specific to the engine and transmission models ordered will be included with the chassis in the ship loose items:

- (2) Hard copies of the Engine Operation and Maintenance manual digital copy.
- (2) Digital copies of the Transmission Operator's manual
- (2) Digital copies of the Engine Owner's manual
- (2) Two (2) Pump Operation and Maintenance manuals shall be provided with the apparatus.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ENGINE SERVICE MANUALS

There shall be two (2) printed hard copy sets of Cummins ISX engine service reference manuals which shall be provided with the chassis.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRANSMISSION SERVICE MANUALS

There shall be two (2) printed hard copy sets of Allison 4000 transmission service manuals included with the chassis.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CAB/CHASSIS AS BUILT WIRING DIAGRAMS

The cab and chassis shall include two (2) digital copies of wiring schematics and option wiring diagrams.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DRIVELINE LAYOUT CONFIRMATION

During the design phase of the chassis the driveline engineer shall submit the driveline layout to an OEM engineer to review the chassis design for any potential problems integrating the OEM body to the chassis. The OEM engineer shall provide approval to the driveline engineer prior to driveline bills of materials being released.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HOSE BED & COVER

The apparatus shall be capable of carrying a capacity of 1000' of 5' LDH. In addition to this the apparatus shall come with an approved hose bed cover. The cover shall be manufactured to prevent wind from lifting it and shall be secured with hooks and bungee cords. There shall also be a LED light placed in the hose bed.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SIDE COMPARTMENT DOORS

Roll up doors shall be installed on all side compartments. The doors shall be painted to match the body color of the apparatus. Each door shall be supplied with a full width lift bar. The doors shall be non-locking. Each side door shall have a drip tray to collect water that accumulates on the rolled-up doors. There shall be a drain to drain the water underneath the apparatus.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BODY COMPARTMENT LIGHTING

There shall be LED compartment lighting installed in the body compartments. The lights shall have a 5-year replacement warranty.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

COMPARTMENT COATING

The interior of the body compartments shall be coated with gray Line-X or one which is a substantially adequate or equivalent unless otherwise specified. The coating shall be durable enough to withstand the everyday wear and tear of equipment removal and shifting.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

WHEEL WELL "SMART STORAGE"

The wheel wells shall be designed to accept "Smart Storage" modules for maximum compartment efficiency.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DRIVER'S SIDE SMART STORAGE - WL1

A Smart Storage compartment shall be installed in the forward portion of the rear wheel well area, on the driver's side of the apparatus. The compartment shall be designed to store one (1) 2.5-gallon water can and one (1) 20 lbs. fire extinguisher. The compartment door and hinge shall be constructed of stainless-steel material. The door shall have a rubber gasket to create a 100% seal against an aluminum flange to protect the interior of the compartment. The door shall be painted primary body color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DRIVER'S SIDE SMART STORAGE - WL2

A three (3) air bottle Smart Storage compartment shall be installed in the rear wheel well area between the tandem axles on the driver's side of the apparatus. The compartment door and hinge shall be constructed of stainless-steel material. The door shall have a rubber gasket to create a 100% seal against an aluminum flange to protect the interior of the compartment. The door shall be painted primary body color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DRIVER'S SIDE SMART STORAGE - WL3

A combination single air bottle and stabilizer pad Smart Storage compartment shall be installed in the rearward portion of the rear wheel well area, on the driver's side of the apparatus. The triangle design compartment shall be able to fit either one (1) 2" thick stabilizer pad or two (2) 1" stabilizer pads and one (1) SCBA bottle. The compartment door and hinge shall be constructed of stainless-steel material. The door shall have a rubber gasket to create a 100% seal against an aluminum flange to protect the interior of the compartment. The door shall be painted primary body color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OFFICER'S SIDE SMART STORAGE - WR1

A Smart Storage compartment shall be installed in the forward portion of the rear wheel well area, on the officer's side of the apparatus. The compartment shall be designed to store one (1) 2.5-gallon water can and one (1) 20 lbs. fire extinguisher. The compartment door and hinge shall be constructed of stainless-steel material. The door shall have a rubber gasket to create a 100% seal against an aluminum flange to protect the interior of the compartment. The door shall be painted primary body color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OFFICER'S SIDE SMART STORAGE - WR2

A three (3) air bottle Smart Storage compartment shall be installed in the rear wheel well area between the tandem axles on the officer's side of the apparatus. The compartment door and hinge shall be constructed of stainless-steel material. The door shall have a rubber gasket to create a 100% seal against an aluminum flange to protect the interior of the compartment. The door shall be painted primary body color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OFFICER'S SIDE SMART STORAGE - WR3

A combination single air bottle and stabilizer pad Smart Storage compartment shall be installed in the rearward portion of the rear wheel well area, on the officer's side of the apparatus. The triangle design compartment shall be able to fit either one (1) 2" thick stabilizer pad or two (2) 1" stabilizer pads and one (1) SCBA bottle. The compartment door and hinge shall be constructed of stainless-steel material. The door shall have a rubber gasket to create a 100% seal against an aluminum flange to protect the interior of the compartment. The door shall be painted primary body color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

GROUND LADDER STORAGE

The ground ladders shall be removable from the rear of the apparatus. The ladders shall be fully enclosed so road dirt and debris cannot foul or damage the ladders. The ladders shall be stored in individual full-length aluminum slides so they can be removed individually. The slides shall be lined with nylon to aid in moving the ladders.

The following ground ladders shall be supplied with the apparatus Alco-Lite, or one which is a substantially adequate or equivalent.

- One (1) Alco-Lite, model FL-10, 10' aluminum folding ladder shall be provided.
- One (1) Alco-Lite, model CJL-14, 14' aluminum combination step and extension ladder shall be provided.
- Two (2) Alco-Lite model DRL-16, 16' aluminum roof ladders with folding roof hooks on both ends shall be provided.
- One (1) Alco-Lite, model PEL-24, 24' aluminum two section extension ladder shall be provided.
- One (1) Alco-Lite, model PEL3-35, 35' aluminum three section extension ladder shall be provided.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PIKE POLE STORAGE

Six (6) aluminum tubes for the storage of pike poles shall be installed inside the rear compartment of the ladder storage area.

The following pike poles shall be supplied with this location on the apparatus Fire Hooks Unlimited, or one which is a substantially adequate or equivalent.

- Two (2) Fire Hooks Unlimited, model NHF-6, 6' fiberglass (ash core) pike poles with a National Hook and butt-style end shall be provided.
- Two (2) Fire Hooks Unlimited, model NHF-8, 8' fiberglass (ash core) pike poles with a National Hook and butt-style end shall be provided.
- Two (2) Fire Hooks Unlimited, model NHF-12, 12' fiberglass (ash core) pike poles with a National Hook and butt-style end shall be provided.

Two (2) aluminum trays for the storage of pike poles shall be installed inside the rear compartment of the ladder storage area

- Two (2) Fire Hooks Unlimited, model NHF-4 w/D, 4' fiberglass (ash core) pike poles with a National Hook and an aluminum "D" style handle shall be provided.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

WHEEL CHOCKS AND STORAGE

One pair of wheel chocks shall be provided. The wheel chocks shall be stored in an easily accessible location under the body.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PUMP COMPARTMENT LIGHTING

There shall be 2 LED lights installed in the pump compartment. The lights shall be waterproof.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PUMP PANEL PLATFORM

There shall be one (1) supplied pull out platform located on the driver's side of the pump module. The platform shall lock in both the retracted and the extended position. The pull-out platform shall be capable of supporting a maximum of 500 pounds and shall be wired to the door ajar circuit.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

COMPARTMENTAL TRAYS

Each compartment shall consist of trays or shelving. The manufacture shall include enough resources to adequately fulfill these needs. Trays with rolls outs shall have a weight compacity of 300lbs evenly distributed. All trays shall have a minimum of a 3" lip.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TWO REAR TOW EYES

Two (2) chrome plated tow eyes shall be installed at the rear of the apparatus above the rear step area. The tow eyes shall be bolted to a heavy duty assembly that is welded to the torque box. The tow eyes shall have a 2-1/2" ID hole.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

STEPPING SURFACES

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

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TURNTABLE ACCESS LADDER - DRIVER'S SIDE

For access to the turntable, an aluminum turntable access ladder shall be furnished on the driver's side of the apparatus. The ladder design shall utilize two (2) air cylinders to aid in the deployment of the ladder into the climbing position and a positively locking mechanism to lock the ladder assembly into the travel position. The main structural members of the assembly shall be fabricated from stainless steel with aluminum tread plate overlays on the step area. The degree of slip resistance shall be in accordance with NFPA 1901, current edition.

The access ladder shall be designed as a two (2) part assembly. The lower ladder assembly shall swing out and down and the upper ladder assembly will angle when the lower assembly is in the down position to an approximate slope to provide ease of access from the ground to the first step and allow for the maximum angle of departure of the apparatus. When the access ladder is in the down position, the maximum height from the ground to the first step shall not exceed 24". All remaining steps shall have a maximum stepping height that shall not exceed 18".

The access ladder shall be connected to the door open warning circuit to warn the driver it is not in the stored position. The access ladder shall be illuminated for nighttime operation with LED lighting. The lighting shall be enclosed within a tough waterproof enclosure and covered with an aluminum bezel for protection from impact and environmental elements; and shall be activated by the parking brake. To aid in ascending and descending the access ladder, knurled aluminum handrails shall be provided on each side as well as one (1) on top of the body above the steps.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT TREAD PLATE OVERLAYS

A tread plate overlay shall be located on the front vertical areas of each side of the apparatus body. The overlays shall be located on the front of the body compartments.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT BODY STEPS AND LIGHTING

Four (4) folding steps shall be located on the front of the driver's side body compartments. The folding steps shall have two large open slots to prevent the buildup of ice or mud and to provide a hand-hold when necessary. The steps shall have a surface area of at least 35 square inches and shall be able to withstand a load of 500 pounds. The steps shall be adequately lit with LED lighting. One (1) light shall be located above the steps.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

HANDRAILS

All handrails, unless otherwise stated, shall be constructed of knurled aluminum of not less than 1-1/4" in diameter. All railing shields and brackets shall be chrome plate and bolted to the body

with stainless steel bolts. The lower bracket on all vertical handrails shall have a drain hole at the lowest point.

The following handrails shall be provided on the apparatus:

- A handrail shall be installed forward on the top of the body, on the driver's side.
- A Handrail shall be installed on the top officer's side front of the body.
- Two (2) horizontal handrails shall be installed, one (1) each above both the driver's side and officer's side pump panels.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INDEPENDENT ALUMINUM PUMP MODULE

The pump module shall be fabricated from aluminum. The module shall be fabricated as an individual unit, independent from the body. The module shall be fabricated utilizing the break and bend technique in order to form a strong yet flexible structure. The pump module shall be fabricated using precision holding fixtures to ensure proper dimensions and all attachment points shall be heavily reinforced.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DRIVER'S SIDE RUNNING BOARD

A bolt on running board, constructed of anti-slip tread plate, shall be installed on the driver's side of the pump module. The outside edge of the running board shall be flush with the rub rail installed on the body to maintain a uniform appearance. The running board shall be installed with sufficient support to form a sturdy, non-deflecting step area for personnel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OFFICER'S SIDE RUNNING BOARD

A bolt on running board, constructed of anti-slip tread plate, shall be installed on the officer's side of the pump module. The outside edge of the running board shall be flush with the rub rail installed on the body to maintain a uniform appearance. The running board shall be installed with sufficient support to form a sturdy, non-deflecting step area for personnel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FRONT PUMP ACCESS PANEL

A tread plate access panel shall be provided on the front of the pump compartment. The panel shall be of the single pan design and shall be positively latched in the closed position utilizing compression latches. An aluminum sill protector shall be installed on the bottom of the door opening to protect the paint from chipping and scratching. This area shall be accessible when the cab is tilted.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OFFICER'S SIDE PUMP ACCESS PANEL

A tread plate door shall be provided above the officer's side pump panel to allow access to the pump compartment. The top horizontally hinged panel shall be of the single pan design and shall be positively latched in the closed position utilizing a push button latch. A gas strut shall be provided on the door. An aluminum sill protector shall be installed on the bottom of the door opening to protect the paint from chipping and scratching. The door shall be wired into the door open warning light circuit.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CONTROL PANEL

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

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

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INSTRUMENT PANEL

The surface up above the control panel shall contain all instruments, gauges, test fittings, and optional controls. This surface shall be referred to as the "instrument panel".

The instrument panel shall be independent and hinged and latched. All instruments, gauges, and other equipment shall be installed with sufficient slack in any cabling, tubing, or plumbing to allow the panel to swivel to the fully open position.

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

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

OFFICER'S SIDE PUMP PANEL

A single panel shall be installed on the officer's side of the pump enclosure. This shall be the area where any officer's side discharges, inlets, steamers, and other pump associated equipment are located. This panel shall be easily removed and held in place with quick release push latches. It shall be fully removable for pump and plumbing access without the need to use hand tools. Any electrical equipment installed shall be equipped with connectors so they may be easily separated when the below described front access panel is removed.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PANEL SURFACES

The control panel, instrument panel, and officer's side pump panel shall be coated with black Line-X, stainless steel, or aluminum. The material shall be capable of withstanding the effects of extreme temperatures and weather.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

GARNISH RING BEZEL ASSEMBLIES

Innovative Controls intake and discharge garnish rings shall be installed on the apparatus with mounting bolts. These bezel assemblies shall be used to identify intake and discharge ports with color and verbiage.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

VERBIAGE TAG BEZEL ASSEMBLIES

Innovative Controls verbiage tag bezels shall be installed. The bezel assemblies will be used to identify apparatus components.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

SAFETY MESSAGE BEZEL ASSEMBLIES

Innovative Controls safety message bezels shall be installed. The bezel assemblies will be used to identify, instruct, or warn the operators. The garnish rings, verbiage tags and safety message bezels shall be designed and manufactured to withstand the specified apparatus service environment and shall be backed by a warranty equal to that of the exterior paint and finish. The specified assemblies shall feature a chrome plated panel mount bezel with durable UV resistant polycarbonate inserts. These UV resistant polycarbonate graphic inserts shall be subsurface screen printed to eliminate the possibility of wear and protect the inks from fading. All insert labels shall be compliant with NFPA 1901, current edition.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PUMP PANEL LIGHTING

The pump operator's control panel and the officer's side pump panel shall each be illuminated by LED lighting. The pump panel lights shall become energized upon setting the parking brake so the gauge information provided may be consulted at any time the apparatus is parked. A stainless-steel shield shall be installed over each pump panel light to further protect them from the elements and to act as a reflector for additional illumination.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ALLOY ANODES

Four (4) Hale alloy anodes shall be provided with the fire pump. The anodes shall aid in preventing galvanic corrosion within the water pump and be easily replaceable. The anodes shall be installed as follows:

- Two (2) in the suction manifold of the fire pump •
Two (2) in the discharge manifold of the fire pump.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FIRE PUMP MOUNTING

The fire pump shall be mounted within a separate body module that is not directly connected to the apparatus body. The pump shall be frame mounted; therefore minimizing the likelihood of the pump casing cracking should the apparatus be involved in a collision. The pump module shall be mounted to the frame in a minimum of four (4) locations and shall be reinforced appropriately in order to carry the expected load for the life of the apparatus.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PUMP SHIFT

The pump shift shall be supplied and installed by the chassis manufacturer. The pump system shift indicator lights in the chassis cab shall be supplied and installed by the chassis manufacturer. The pump system shift indicator lights on the operator's panel shall be incorporated with the pump pressure governor. The pump shift actuating mechanism shall be air operated from a valve in the cab identified as "PUMP SHIFT". Full instructions for shifting the pump shall be inscribed on the valve plate.

Two (2) green pump system shift indicator lights shall be in the chassis cab. The first light shall be labeled "Pump Engaged". The second light shall become energized when the chassis parking brake has been set and when the pump and the chassis transmissions have been shifted completely into the correct gears for pumping, this light shall be labeled "OK to Pump".

One (1) green pump system shift indicator light shall be located on the operator's panel. This

light shall only become engaged when the chassis parking brake has been set and when the pump and the chassis transmissions have been completely shifted into the correct gears. The light shall be located adjacent to the throttle control and shall be labeled "Warning: Do Not Open Throttle Unless Light Is On"

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PRESSURE GOVERNOR

The apparatus shall be equipped with a Class 1 Total Pressure Governor (TPG) that is connected to the engine Electronic Control Module. The TPG shall operate as a pressure sensor (regulating) governor (PSG) utilizing the engines data for optimal resolution and response. Programmable presets for RPM and pressure settings shall be easily configurable using the TPG's straightforward menu structure. The TPG shall also include an indication of engine RPM, system voltage, engine oil pressure and engine temperature with audible alarm output for all. The TPG uses the data bus for engine information requiring no additional sensors to be installed. An interlock system shall be provided to prevent advancement of the engine speed at the pump operator's panel unless the apparatus has "Throttle Ready" indication. The TPG shall also include a pump hour meter to track total hours of pump operation.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

INTAKE RELIEF VALVE

An Elkhart Brass intake relief valve or one which is a substantially adequate or equivalent shall be installed on the suction side of the pump. The valve shall be the preset type, adjustable from 75 to 250 PSI, and shall be designed to prevent vibration from altering the setting. The relief outlet shall be directed below the pump with the discharge terminating in a 2-1/2" male NH threads connection. The discharge shall be away from the pump operator and labeled "Do Not Cap".

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TRIDENT PRIMING PUMP

The priming pump shall be a Trident Emergency Products three-barrel or one which is a substantially adequate or equivalent, compressed air powered, high efficiency, multi-stage, venturi-based Air Prime System. All wetted metallic parts of the priming system are to be of brass and stainless-steel construction. A pressure protection valve shall be installed with the priming pump. A single panel mounted control shall activate the priming pump and open the priming valve to the pump.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MASTER DRAIN VALVE

A Trident manifold drain valve assembly shall be supplied or one which is a substantially adequate or equivalent. This drain shall provide the capability to drain the entire pump by turning a single control. The valve assembly shall consist of a stainless-steel plate and shaft in a bronze body with multiple ports. The drain valve control shall be mounted on the driver's side pump panel and labeled "Master Drain".

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PUMP AND ENGINE COOLING SYSTEM

A pump and engine cooling system shall be provided on the apparatus. The cooling system shall keep the engine cool when running for long periods of time and the pump cool during long periods of pumping when water is not being discharged. The cooling system shall also be set up in a way that the cooling system lines can be easily drained through the master pump drain.

The engine cooling system valve shall be controlled on the operator's panel, and shall be clearly labeled, "Engine Cooler".

The pump cooling system valve shall be controlled on operator's panel, and shall be clearly labeled, "Pump Cooler".

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FOAM SYSTEM

The stainless manifold on the pump shall be engineered for the installation of a Foam Pro 2001-2002 Single foam system rated for "Class A" foam or one which is a substantially adequate or equivalent. In addition to the plumbing, the pump operators control panel shall have space provided for the installation of the foam controls.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PLUMBING SYSTEM

The plumbing manifold shall consist of the inlet side manifold and the discharge side manifold. Galvanized Victaulic couplings shall be used wherever possible for ease of maintenance and superior corrosion protection.

The inlet side of the plumbing manifold shall utilize schedule 10, 304-grade stainless steel tubing and preformed elbows for inlets that are larger than 3". Side auxiliary inlets that are 3" or smaller shall utilize schedule 40, 304-grade stainless steel threaded tubing and preformed elbows. The inlet manifold shall thread into the pump auxiliary inlet ports and each inlet valve shall thread onto the inlet manifold.

The discharge side of the plumbing manifold shall utilize schedule 40, 304-grade stainless steel

tubing and preformed elbows to ensure the quality of the manifold where welds are required. The discharge manifold shall connect to the pump discharge ports using stainless steel flanges that shall be machined to seat an O-ring to ensure a leak proof seal. Each discharge shall derive from a port on the manifold assembly connected to a discharge valve with 304-grade stainless steel flanges. Discharges that terminate in a location other than the pump module (i.e. rear discharges) that do not require welding shall utilize a combination of high-pressure flex hose and schedule 10, 304-grade stainless steel tubing to allow flexibility between the body and the pump module.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

LINE PRESSURE GAUAGE

The discharges shall be provided with 2-1/2" pressure gauges. The discharge gauges are liquid filled with a solution to assure visual readings and reduce inner lens condensation. The face of the gauges shall have a white background, black graphics and chrome bezels, readings accurate within 1%. Gauges will read from zero to 400 PSI. The gauges shall be installed at each discharge control on the pump operator's panel. On side mount pump applications with push pull handles each gauge shall incorporate 1-piece module assembly consisting of the gauge, push-pull and trim bezel. The pressure gauges shall maintain performance of all features and be free from defects in material and workmanship which includes fluid fill leakage and discoloration.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MASTER PRESSURE CENTER ASSEMBLY

The master gauges shall be installed on the pump panel that includes the two (2) master gauges and the test port manifold. The master intake and master discharge gauges shall be 4" diameter pressure gauges. The discharge gauges are liquid filled with a solution to assure visual readings and reduce inner lens condensation. The two (2) master gauges shall be installed into a decorative Chrome plated zinc mounting bezel that also incorporates a test port manifold and a graphic overlay that identifies the master intake and discharge gauges, the vacuum test port, and the pressure test port and shall be readings accurate within 1%. The test port manifold is solid cast brass with chrome plated plugs. The gauge on the left shall be the master pump intake gauge and display a range from -30 to 400 PSI with black graphics on a white background. The gauge on the right shall be the master pump discharge gauge and display a range from 0 to 400 PSI with burgundy graphics on a white background.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DISCHARGE, PRE-CONNECT, AND INTAKE DRAINS

A 3/4" quarter turn drain valve shall be included on each discharge, gated intake, and steamer valve (if applicable). A side stem, long stroke chrome plated lift handle shall be provided on the drain valve to facilitate use with a gloved hand. The drain valve shall have a verbiage tag that angles upward so that it can easily be seen and read by the operator before opening. The drain valve shall be located just above the running board and below the pump panel to reduce clutter in

the pump panel area. The drain valve shall be connected to the valve with a flexible hose that is routed in such a manner as to assure complete drainage to below the apparatus. A matching color-coded bezel shall be included.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

2" TANK FILL

A 2" tank fill shall be plumbed from the pump to the tank. Installation shall be completed with 2" Class 1 rubber hose and stainless-steel hose couplings. An Akron Brass 2" valve or one which is a substantially adequate or equivalent shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall carry a ten (10) year warranty by the valve manufacturer.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

3" TANK-TO-PUMP

A 3" tank-to-pump shall be plumbed with a Class 1 flexible hose from the tank to the suction side of the pump. An Akron Brass 3" valve or one which is a substantially adequate or equivalent shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a self-locking ball feature using an automatic friction lock design and specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall also include a necessary B3-SH pump flange adapter, which shall be specifically used for the tank-to-pump line to properly adjust the plumbing based on the pitch of the pump. The valve shall carry a ten (10) year warranty by the valve manufacturer. A check valve shall be between the pump suction and the booster tank valve. The check valve shall eliminate back flow into the water tank when the pump is connected to a pressurized source. The valve shall be actuated by an Akron Brass, model R1 manual actuator or one which is a substantially adequate or equivalent. The manual actuator shall be controlled by a push/pull T-handle.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

6" DRIVER SIDE MAIN INTAKE

A 6" main intake shall be located on the driver's side of the pump module. The suction fittings shall include a removable die-cast screen to provide cathodic protection for the pump thus reducing corrosion. A short steamer barrel shall be installed to accommodate an intake valve without exceeding the legal overall body width. The intake shall terminate male NH threads. One

(1) 6" NH thread long handle chrome plated vented steamer cap shall be provided.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

2-1/2" DRIVER'S SIDE AUXILIARY INTAKE

A 2-1/2" gated auxiliary intake with 2-1/2" plumbing shall be provided on the driver's side of the pump module. The auxiliary intake shall be fully recessed behind the panel in order to keep the valve protected from the elements. An Akron Brass 2-1/2" valve or one which is a substantially adequate or equivalent shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass, model TSC manual actuator installed directly on the valve or one which is a substantially adequate or equivalent. The handle shall allow the valve to be controlled directly at the valve. One (1) 2-1/2" NH thread rocker lug chrome plated vented plug, complete with cable or chain, shall be provided.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

6" OFFICER SIDE MAIN INTAKE

A 6" main intake shall be located on the officer's side of the pump module. The suction fittings shall include a removable die-cast screen to provide cathodic protection for the pump thus reducing corrosion. A short steamer barrel shall be installed to accommodate an intake valve without exceeding the legal overall body width. The intake shall terminate male NH threads. One (1) 6" NH thread long handle chrome plated vented steamer cap shall be provided.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BUTTERFLY VALVE

A Hale, model MIV-M, 6" butterfly valve or one which is a substantially adequate or equivalent shall be provided. The valve shall be a 6" full flow type valve with a suction tube attached terminating in 6" NH thread. The valve shall be operated by a handwheel actuator that will cycle the valve from open to closed position in no less than three (3) seconds. The actuator shall be of a sealed design to provide reliable service in the harsh pump compartment environment. The ratio of the gear actuator shall be such that the hand wheel will close the valve in no more than ten (10) complete turns. The handwheel shall be located on the pump panel, on the same side as the valve. A panel placard shall be provided with the valve for indicating control operations. The placard shall have status lights to indicate whether the valve is opening, closing, or traversing from one position to another. A Hale air bleeder valve or one which is a substantially adequate or equivalent shall be provided on the main intake. The valve shall be used to bleed off air in

accordance with NFPA 1901, current edition. An intake relief valve shall be included with the Hale valve or one which is a substantially adequate or equivalent. The relief valve shall be factory set to 125 PSI and is field adjustable from 75 to 250 PSI.

One (1) 5" swivel Storz x 6" female NH thread swivel rocker lug 30-degree elbow adapter shall be provided. The elbow shall be constructed of hard coat anodized aluminum alloy and have a silver powder coat finish inside and out.

One (1) 5" Storz blind cap, complete with lanyard, shall be provided.

All intakes shall have the OEM Standard label package unless stated otherwise. All intake labels shall be burgundy in color. Specific verbiage on each intake label tag shall be determined at the pre-construction meeting.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

2-1/2" DRIVER'S SIDE DISCHARGE

There shall be a total of 3, 2-1/2" discharge with 2-1/2" plumbing shall be located on the driver's side of the pump compartment. The discharge shall terminate with male NH thread. An Akron Brass 2-1/2" valve or one which is a substantially adequate or equivalent shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass rack and sector actuator or one which is a substantially adequate or equivalent installed on the valve. The manual actuator shall be controlled by a push/pull T-handle. The discharge shall have a 2-1/2" brass case gauge with bezel and a display range from 0 to 400 PSI. The gauge shall have a black dial graphic and an orange tip on the pointer.

One (1) 2-1/2" female NH thread swivel rocker lug x 2-1/2" male NH thread 30-degree chrome plated elbow adapter shall be provided.

One (1) 2-1/2" NH thread rocker lug chrome plated vented cap, complete with cable or chain, shall be provided.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

4" OFFICER'S SIDE DISCHARGE

A 4" large diameter discharge, with 4" plumbing, shall be located on the officer's side of the pump compartment. The discharge shall terminate with male NH thread. An Akron Brass 3" valve or one which is a substantially adequate or equivalent shall be provided. The valve shall

have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass manual gear actuator or one which is a substantially adequate or equivalent installed on the valve. The gear actuator shall operate at a 50:1 gear ratio, which operates from fully open to fully closed in twelve (12) rotations. The gear actuator shall be controlled by an Akron Brass 4" handwheel valve controller or one which is a substantially adequate or equivalent. The handwheel worm gear shall be connected to the remote mounted valve via a rod assembly. The handwheel shall turn a gear sector mounted on the valve for smoother and easier operations under pressure. A position indicator shall show the position of the ball valve in accordance with NFPA 1901, current edition. Opening and closing speed shall comply with the current NFPA standard to minimize effects of water hammer.

The discharge shall have a 2-1/2" brass case gauge with bezel and a display range from 0 to 400 PSI. The gauge shall have a black dial graphic and an orange tip on the pointer.

One (1) 5" swivel Storz x 4" female NH thread swivel rocker lug 30-degree elbow adapter shall be provided. The elbow shall be constructed of hard coat anodized aluminum alloy and have a silver powder coat finish inside and out.

One (1) 5" Storz blind cap, complete with lanyard, shall be provided.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

1-1/2" FRONT BUMPER DISCHARGE

A 1-1/2" discharge shall be located above the gravel shield on the driver's side of the front bumper. The discharge shall be plumbed with 2" plumbing and high-pressure flex hose with stainless steel couplings. The discharge shall terminate with male NH thread. The discharge shall have Class I automatic drains installed in the low routed areas below the manual drain. The automatic drains shall open whenever the pressure in the line drops below 6 PSI. This discharge shall be foam capable.

An Akron Brass 2" valve or one which is a substantially adequate or equivalent shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass, model R1, or one which is a substantially adequate or equivalent manual actuator installed on the valve. The manual actuator shall be controlled by a push/pull T-handle.

The discharge shall have a 2-1/2" brass case gauge with bezel and a display range from 0 to 400 PSI. The gauge shall have a black dial graphic and an orange tip on the pointer.

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

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CROSSLAY CONFIGURATION

Two (2) 1-1/2" and one (1) 2-1/2" crosslay pre-connects shall be located above the front stabilizers. High-pressure flex hose with stainless steel couplings shall be used in the plumbing. A 90-degree swivel elbow shall be utilized to keep the hose from kinking when pulled from either side of the apparatus. The swivel for each crosslay shall be located outboard for ease of making connections while changing hose. The pre-connect hose beds shall be sized to accommodate the following hose load: The interior of the pre-connect hose bed shall have a maintenance free abraded finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FLOORING

The floor of the pre-connect area shall be covered with Dura-Dek, or one which is a substantially adequate equivalent, fiber reinforced material. The Dura-Dek shall have "T" beams in parallel connected with cross slats that are first mechanically bonded and then epoxied. The "T" sections shall be spaced 3/4" apart to allow for drainage and ventilation.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ROLLERS

Stainless steel rollers shall be provided at each end of the crosslay hose bed to facilitate deployment of hose. Vertical rollers shall be installed on each side of the hose bed opening and a horizontal roller shall be installed under the opening.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

DIVIDERS

Two (2) dividers shall be in the crosslay area. Each divider shall be fabricated of aluminum and shall be mounted in a channel on each end for adjustability. The dividers shall have a maintenance free abraded finish.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TOP/END COVERS

A heavy-duty vinyl coated nylon cover shall be located over the top and on each end of the preconnected crosslay. The top of the cover shall be connected to the top forward portion of the crosslay through a C-Rail channel and shall attach on the top-rear portion using Velcro. The bottom of the end covers shall be attached to the pump module utilizing hooks and bungee cord. The cover color shall be red. The end covers of the crosslays shall be incorporated with the top cover.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

THE (2) 1-1/2" PRE-CONNECT

A 1-1/2" pre-connect with 2" plumbing shall be provided. The pre-connect shall terminate out a swivel male NH thread. The 1-1/2" crosslay pre-connect shall have a capacity of 200' of 1-3/4" double jacket fire hose stored in a single stack. The discharge shall be foam capable. An Akron Brass, model 8820, 2" Swing-Out valve or one which is a substantially adequate or equivalent shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass, model R1, or one which is a substantially adequate or equivalent manual actuator installed on the valve. The manual actuator shall be controlled by a push/pull T-handle. The discharge shall have a 2-1/2" brass case gauge with bezel and a display range from 0 to 400 PSI. The gauge shall have a black dial graphic and an orange tip on the pointer. The discharge shall be designated as a pre-connect so no cap and chain shall be required.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

2-1/2" PRE-CONNECT

A 2-1/2" pre-connect with 2-1/2" plumbing shall be provided. The pre-connect shall terminate out a swivel NH. The 2-1/2" crosslay pre-connect shall have a capacity of 200' of 2-1/2" double jacket fire hose stored in a single stack. The discharge shall be foam capable. An Akron Brass 2-1/2" valve or one which is a substantially adequate or equivalent shall be provided. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats. The valve shall be capable of dual directional flow while incorporating a specially designed flow optimizing stainless steel ball. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of six bolts. The valve shall be manufactured and assembled in the United States. The valve shall carry a ten (10) year warranty by the valve manufacturer. The valve shall be actuated by an Akron Brass, model R1, or one which is a substantially adequate or equivalent manual actuator installed on the valve. The manual actuator shall be controlled by a push/pull T-handle. The discharge shall have a 2-1/2" brass case gauge with bezel and a display range from 0

to 400 PSI. The gauge shall have a black dial graphic and an orange tip on the pointer. The discharge shall be designated as a pre-connect so no cap and chain shall be required.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AERIAL WATERWAY DISCHARGE

A discharge shall be plumbed to the aerial waterway with 4" plumbing. The plumbing shall be constructed from schedule 10 stainless steel components. An Akron Brass, model 8940, 4" Swing-Out valve or one which is a substantially adequate or equivalent shall be provided. The valve shall have an all brass body with flow optimizing Fusion CF composite ball with Hydromax technology or one which is a substantially adequate or equivalent. The valve shall not require lubrication of seats or any other internal waterway parts and must be capable of swinging out of the waterway for maintenance by the removal of four bolts. The valve shall carry a ten (10) year warranty by the valve manufacturer.

The valve shall be actuated by an Akron Brass electric actuator installed on the valve or one which is a substantially adequate or equivalent. The electric actuator shall have a 25:1 gear ratio, which actuates from fully open to fully close in eight (8) seconds, a clutchless motor, and utilize an electric controller with current limiting design. The electric actuator shall be controlled by an Akron Brass, model 9325, NavigatorPro valve controller or one which is a substantially adequate or equivalent. The electric controls shall be of true position feedback design, requiring no clutches in the motor or current limiting. The unit shall be completely sealed with momentary open, close as well as an optional one (1) touch full open feature to operate the actuator. Three (3) additional buttons shall be available to be used for preset selection, preset activation, CAFS activation and menu navigation. The unit shall be capable of being connected to a Pressure Sensor and provide an LCD display showing pressure as well as valve position indication. Valve position indication shall be determined from true position feedback and indicate the exact position of the valve. The unit shall be capable of being used in conjunction with at least two (2) additional displays to control one (1) valve. The unit shall be able to be programmed to Bar, PSI or kPa for pressure. The unit shall have programmed pipe sizes and be capable of custom calibration to high and low flow ranges. The unit shall also be capable of turning on and off a solenoid used in a CAFS system. The only calibration required is to set the unit to the valve during initial set up. No other calibration shall be required. The display shall be a full color LCD display with a backlight. It shall have manual adjustment of the brightness as well as an auto dimming option. Unit shall carry a five (5) year warranty.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRICAL SYSTEM

Wiring harnesses shall be the automotive type, engineered specifically for the builder's apparatus, and shall meet the following criteria. Under no circumstances shall diodes, resistors, or fusible links be located within the wiring harness. All such components shall be located in an easy to access wiring junction box or the main circuit breaker area. All wire shall meet white book, baseline advanced design transit coach specification and Society of Automotive Engineers recommended practices. It shall be stranded copper wire core with cross-linked polyethylene

insulation complying with SAE specification J1128. Each wire shall be hot stamp function coded every three inches starting one inch from the end and continuing throughout the entire harness. In addition to function coding, each wire shall be numbered, colored, and gauge coded.

Wire harnesses shall be protected by 275-degree Fahrenheit minimum high temperature flame retardant loom. All nodes and sealed Deutsch connectors shall be waterproof.

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

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

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

All Deutsch connectors shall meet the following criteria:

- All connectors shall be rated for three feet submersion in water.
- Temperature range from -67°F to 257°F continuous at rated current.
- All contacts shall be soldered unless a crimping tool or machine is used that gives an even and precise pressure for the terminal being used.
- All contacts shall be pull tested to ensure their integrity.

WEATHERPROOF DOOR SWITCHES

Because of the harsh environment and susceptibility to moisture on the fire ground, the fire apparatus compartment doors shall utilize weatherproof switches. No Exceptions.

The switches shall be used for activation of the compartment lights and to provide a signal to the door open circuit in the cab.

V-MUX ELECTRICAL MANAGEMENT SYSTEM

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

Outputs:

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

- **Load Shedding:** The System shall have the capability to Load Shed with 8 levels any output. This means you can specify which outputs (barring NFPA restrictions) you would like Load Shed. Level 1 12.9v, Level 2 12.5V, Level 3 - 12.1V, Level 4 - 11.7V, Level 5 11.3V, Level 6 10.9V, Level 7 10.5, Level 8 10.1. Unlike conventional load shedding devices you can assign a level to any or all outputs. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- **Load Sequencing:** The System shall be able to sequence from 0 8 levels any output. With 0 being no delay and 1 being a 1-second delay, 2 being a 2-second delay and so on. Sequencing reduces the amount of voltage spikes and drops on your vehicle and can help limit damage to your charging system. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- **Output Device:** The System shall have solid-state output devices. Each solid-state output shall be a MOS-FET (Metal Oxide Semiconductor - Field Effect Transistors) ; MOS-FETs are solid-state devices with no moving parts to wear out. A typical relay, when loaded to spec, has a life of 100,000 cycles. The life of a FET is more than 100 times that of a relay. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- **Flashing Outputs:** The System shall be able to flash any output in either A or B phase, and logic is used to shut down needed outputs in park or any one of several combined interlocks. The flash rate can be selected at either 80, or 160 FPM. This means any light can be specified with a multiplex truck with no need to add flashers. Flashing outputs can also be used to warn of problems. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- **PWM:** The modules shall have the ability to PWM at some outputs so that a Headlight PWM module is not needed. No add-on modules shall be acceptable; the module with the outputs must perform this function.
- **Diagnostics:** An output shall be able to detect either a short or open circuit.

Inputs:

The inputs shall have the ability to be switched by a ground or battery signal.

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

System Network:

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

System Reliability:

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

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

TAIL LIGHTS

A Whelen M6 series LED taillight assembly, or one which is a substantially adequate equivalent, shall be installed on each side of the rear of the apparatus. Each assembly shall include the following:

- One (1) red LED stop/tail combination light
- One (1) amber LED turn light with arrow
- One (1) clear LED backup light

The lights shall be mounted in a four (4) light chrome plated composite housing. The remaining slot in the housing shall be populated with a warning light specified in the warning light section.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

REAR WORK LIGHT SWITCH

A switch shall be installed above the taillight bezel on the left side of the rear of the apparatus. The switch shall be wired to the backup lights to provide additional work lighting. The rear work light circuit shall be deactivated when the park brake is disengaged. In addition to the lights being activated by the above switch, the lights shall also come on when the transmission is placed in reverse.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

MIDSHIP TURN SIGNALS

Two (2) LED midship auxiliary/turn signal lights shall be installed in the rub rail, one (1) on each side of the body.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

PERIMETER GROUND LIGHTING

White 4" round LED lights shall be installed beneath the apparatus in areas where personnel may be expected to climb on and off the apparatus. The lights shall illuminate the ground within 30" of the apparatus to provide visibility of any obstructions or hazards. These areas shall include, but not be limited to, side running boards and the rear step area. The lights shall be activated

when the parking brake is engaged or when the transmission is placed in reverse.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

CLEARANCE LIGHTS

Red LED clearance lights shall be installed in the outside corners of the rear bumper and a bar cluster located in the lower middle portion of the rear of the apparatus. Clearance reflectors shall be placed on the apparatus to be in full compliance with applicable ICC and DOT codes and regulations.

Two (2) extension marker lights (rubber arm style) shall be installed at the rear portion of the body. The lights shall be attached to the back wall of the rear flex joint area. These lights shall aid the driver as to the location of the rear of the body during driving operations. The lights shall have forward facing amber bulbs and rearward facing red bulbs.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

WARNING LIGHTS AND SURFACE-MOUNTED SCENE LIGHTING

Warning Lights shall be configured with this apparatus. Whelen warning lights are preferred. All warning lights and location will be reviewed upon bid submission. All warning lights and scene lighting shall comply with NFPA compliancy under the current provision. The apparatus shall be equipped with scene lighting capable of working of a 12V system. There shall be a traffic advisor light installed on the rear of the apparatus. The control head for the traffic advisor light shall be located within reach of the driver. All light shall be controlled via a switch or button.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AIR HORN ACTIVATION

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

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

GENERATOR

A Harrison hydraulic driven generator, or one which is a substantially adequate equivalent shall be installed on the apparatus. The continuous duty rating of the generator shall be 10,000 watts, 42/83 amps, 120/240VAC volts. Current frequency shall be stable at 60 hertz. There shall be a display provided with the generator. The generator shall be PTO driven with the controls located in the cab within reach of the driver. The generator shall be located above the pump panel.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

12 CIRCUIT NON-GFI LOAD CENTER

A 120/240-volt load center shall be incorporated into the 120/240-volt wiring system. The load center shall include adequate circuit breakers to protect the loads specified on the apparatus. The entire 120/240-volt electrical system shall be installed in accordance with NFPA 1901, current edition. This shall include all testing, labeling, wiring methodology, and dimensional requirements. Certification of compliance shall accompany the apparatus at the time of delivery. All 120/240-volt A.C. wiring shall be done in accordance with NFPA 1901, current edition as well as nationally accepted electrical codes.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

BRANCH CIRCUIT OVERCURRENT PROTECTION

Over current protection devices shall be provided for circuits in accordance with NFPA 1901, current edition. The load center shall be equipped with a non-GFI two pole main breaker when the six or more individual branch circuits are present. Over current protection devices shall be marked with labels to identify the function of the circuit they protect. The generator load center shall be located on the back wall of the L1 compartment.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

ELECTRICAL CORD REEL

An Akron Brass electric rewind cord reel shall be installed on the apparatus. The cord reel shall be equipped with a universal frame that will allow the 12-volt motor to be mounted in four (4) different positions. All metal parts, except for the electric motor and sprocket teeth, shall be powder-coated red. All hardware shall be stainless steel. The cord reel disks shall have rolled edges to prevent sharp edges. The cord reel shall include the solenoid, switch and circuit breaker. The reel shall be covered by an Akron Brass five (5) year warranty. Rollers shall be supplied to prevent damage to the electrical cable if pulled in any direction. The cord reel shall be equipped with 200' of yellow STW Seoprene 10/3 wire installed with a cable stop to prevent damage to cable fittings.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

JUNCTION BOX

There shall be an Akron Brass Extenda-Lite, model EJBX or one which is a substantially adequate or equivalent, back lighted electrical junction box equipped with four (4) electrical receptacles, two (2) per side. Each receptacle shall be equipped with a spring-loaded snap cover. The cord reel shall be hardwired to the cast aluminum junction box to supply power to the receptacles. An extension cord shall be connected to the junction box through a heavy-duty water-resistant strain relief and flexible extender. Each side of the junction box shall be fitted with polypropylene faceplates, which are backlighted so that plug orientation to the receptacles is quick and easy to align. The junction box shall be equipped with an Akron Brass, model CS,

cord stop.

- One (1) NEMA L5-15R, 120 volt, single, 3-wire, twistlock receptacle shall be installed on the junction box.
- One (1) NEMA L5-20R, 120 volt, single, 3-wire, twistlock receptacle shall be installed on the junction box.
- One (1) NEMA L5-20R, 120 volt, single, 3-wire, twistlock receptacle shall be installed on the junction box.

The cord reel shall be located in the dunnage compartment.

A tread plate mounting bracket to hold the junction box shall be included.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

FIRE RESEARCH 120V TELESCOPING SCENE LIGHTS

Two (2) Fire Research Spectra LED series, model SPA510-K20, or one which is a substantially adequate or equivalent, top mount pull up telescopic lights, or one which is a substantially adequate equivalent, shall be installed on the apparatus. Each light pole shall be anodized aluminum and have a knurled twist lock mechanism to secure the extension pole in position. The extension poles shall extend 4' and rotate 360 degrees. A 3-1/2" round mounting flange shall be provided. Wiring shall extend from the pole bottom with a 4' retractile cord.

Each lamp head shall have sixty (60) ultra-bright white LEDs, 48 for flood lighting and 12 to provide a spotlight beam pattern. They shall operate at 120-volts AC, draw 2 amps, and generate 20,000 lumens of light. Each lamp head shall have a unique lens that directs flood lighting onto the work area and focuses the spotlight beam into the distance. Each lamp heads angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. Each lamp head shall be no more than 5-3/8" high by 14" wide by 3-3/4" deep and have a heat resistant handle. The lamp heads and mounting arms shall be powder coated. The LED scene lights shall be for fire service use.

The two (2) lights shall be located rearward on top of the pump module, one (1) on each side. Each light shall be controlled on the pimp panel with its own individual switch.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

AERIAL LADDER

The aerial device shall comply with all NFPA current standards. Third party testing shall be provided to ensure a safe aerial device is supplied. There shall be copies of all certifications submitted with the submission of the proposed bid. The aerial apparatus shall be equipped with 4 outriggers. The aerial ladder shall have a roof ladder attached to the outside of the base section as

well as room for a stokes basket. One (1) Alco Lite model DRK-16 16' with dual folding roof hooks (hooks each end of ladder) or one which is a substantially adequate or equivalent. One (1) pike pole mounting bracket shall be provided on the driver's side of the aerial fly section. A strap shall be provided to hold the pike pole in the bracket. One (1) Fire Hooks Unlimited, model NHF-6, 6' fiberglass (ash core) pike pole with a National Hook and butt-style end shall be provided or one which is a substantially adequate or equivalent. The aerial device shall have creeper controls for ease of use. There shall be a waterway feature supplied with the aerial device with a moveable nozzle. There shall be a smart screen system supplied with the aerial device showing the engine diagnostics, ladder load, elevation of aerial device, and other pertinent information. The aerial shall be supplied with collision protection limiting the ladder from hitting the body of the apparatus. There shall be an emergency pump with capabilities of providing adequate ladder functions to stow the aerial and stabilizers in the case of main hydraulic pump failure. The aerial shall provide rung lighting. Aerial communication system shall be available for two-way communication from the turntable to the tip. There shall be a side ladder to access the aerial device at the rear left side of apparatus. There shall be LED tip lights installed on the ladder. The ladder shall have two (2) load lifting eyes for rappelling or lifting. There shall be a positional waterway for rescue and water tower mode. The aerial ladder egress shall be red in color.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

RECHARGEABLE FLASHLIGHTS

Four (4) Stream light, model 90503, Survivor LED rechargeable flashlights, or ones which are substantially adequate equivalent shall be supplied and installed on the apparatus near each seating position. Each flashlight shall be orange in color, include one (1) Steady Charger, and be wired directly to the chassis batteries.

Four (4) Stream light, model 45861, LED E-Spot Firebox rechargeable hand lights including charger be installed near each seating position and be wired directly to the chassis batteries. Or one which is a substantially adequate or equivalent.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____

APPARATUS GRAPHICS

Apparatus Graphics and artwork shall be included in this bid. All apparatus graphics and artwork shall comply with current NFPA Standards. Gold Leaf lettering, Reflective Lettering, Reflective Striping and Chevron shall all be including in this package.

Bidder Compliance: YES _____ NO _____ Reference page number in bidders spec. _____