CITY OF DES PLAINES

INVITATION TO BID ("ITB") AND CONTRACT

CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS ISSUED: JUNE 2016

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CITY OF DES PLAINES

CONTRACT FOR THE PROVISION OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

BID PACKAGE

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CITY OF DES PLAINES

BID FOR THE PROVISION

OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

INVITATION FOR BIDDERS' PROPOSALS

CITY:

City of Des Plaines
1420 Miner Street
Des Plaines, IL 60016
Attention: City Clerk, Gloria Ludwig

1. Invitation to Bid

The City invites sealed Bidders' Proposals for the Work described in detail in the Contract and generally described as follows:

The City of Des Plaines is requesting bids for a custom triple combination pumper apparatus that complies with the requirements of, and is equipped in compliance with, the provisions of this Bid Package and the Specifications described in Attachment B to the Contract included in this Bid Package ("***Apparatus***").

The City of Des Plaines currently has two apparatus which are offered for trade as part of this Bid Package (***"Trade In").*** Specifications for the Trade In are described in Attachment C to the Contract included in this Bid Package.

2. Defined Terms

All initial-capitalized terms in this Invitation for Bidders' Proposals and in the other documents included in the Bid Package are defined in the documents included in the Bid Package, as hereinafter defined, and shall have such defined meanings wherever used.

3. The Bid Package

The Bid Package consists of the following documents, all of which are by this reference made a part of this Invitation for Bidders' Proposals as though fully set forth herein:

(1) Invitation for Bidders' Proposals;

(2) General Instructions to Bidders;

(3) Addenda, if issued;

(4) Bidder's Proposal;

(5) Bidder's Sworn Acknowledgement;

(6) Bidder's Sworn Work History Statement;

(7) Other Information Submitted by Bidder, if requested;

(8) Notice of Award; and

(9) Contract, including all of its Attachments and Appendices, if any.

4. **Inspection and Examination**

The Bid Package may be examined at the office of City as listed above and on the City website at www.desplaines.org. In making copies of the Bid Package available to prospective Bidders, City does so only for the purpose of obtaining Bidder's Proposals and such provision does not confer a license or grant for any other use.

Each prospective Bidder shall, before submitting its Bidder's Proposal, carefully examine the Bid Package. Each prospective Bidder shall familiarize itself with all conditions affecting the Contract and the Work. The Bidder whose Bidder's Proposal is accepted will be responsible for all errors in its Bidder's Proposal including those resulting from its failure or neglect to make a thorough examination and investigation of the Bid Package.

5. **Bid Opening**

City will receive sealed Bidder's Proposals for the Work until **10:00 a.m., local time, July 11th , 2016**. After receipt, all Bidder's Proposals will be opened at 10:00 a.m.

6. **Bid Security, Bonds, and Insurance**

A. Bid Security. Each Bidder's Proposal shall be accompanied by a security deposit of at least five percent of the Bidder's Price Proposal in the form of (1) a Cashier's Check or Certified Check drawn on a solvent bank insured by the Federal Deposit Insurance Corporation and payable without condition to City or (2) a Bid Bond in a form satisfactory to City from a surety company licensed to do business in the State

of Illinois with a general rating of A minus and a financial size category of Class X or better in Best's Insurance Guide.

B. Performance and Payment Bonds. The successful Bidder will be required to furnish a Performance Bond and a Warranty Bond upon award of the Contract, each in the penal sum of the full amount of the Contract Price, on forms provided by, or otherwise acceptable to, City, from a surety company meeting the requirements set forth in 6. A, above. Each Bidder's Proposal must be accompanied by a letter from such surety company stating that it will execute Bonds on forms provided by, or otherwise acceptable to, City, upon award of the Contract to Bidder.

C. Insurance. The successful Bidder will be required to furnish certificates and policies of insurance as required by Section 4.2 of the Contract upon award of the Contract. Each Bidder's Proposal must be accompanied by a letter from Bidder's insurance carrier or its agent certifying that said insurer has read the requirements set forth in the Contract and will issue the required certificates and policies of insurance upon award of the Contract to Bidder.

DATED this 1st day of June, 2016.

CITY OF DES PLAINES

By: Alan A. Wax

CITY OF DES PLAINES

CONTRACT FOR THE PROVISION

OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

GENERAL INSTRUCTIONS TO BIDDERS

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CITY OF DES PLAINES

CONTRACT FOR THE PROVISION
OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

GENERAL INSTRUCTIONS TO BIDDERS

1. Interpretation of Documents Included in Bid Package

A. Defined Terms. All terms capitalized in these General Instructions to Bidders and in the other documents included in the Bid Package are defined in the documents included in the Bid Package and shall have such defined meanings wherever used.

B. Implied Terms. If any personnel, equipment, materials, or supplies that are not directly or indirectly set forth in the Contract are nevertheless necessary to the proper provision, performance, and completion of the whole of the Work in accordance with the intent of the Contract, each prospective Bidder shall understand such personnel, equipment, materials, or supplies to be implied and shall provide for such personnel, equipment, materials, or supplies in its Bidder's Proposal as fully as if it were particularly described.

C. Information Provided by City. When information is distributed with the Bid Package by City, or information is otherwise made available to any prospective Bidder by City, such information is distributed or made available solely for the convenience of such prospective Bidder and is not part of the Bid Package. City assumes no responsibility whatever in respect to the sufficiency or accuracy of any such information.

D. Addenda. No interpretation of the documents included within the Bid Package will be made except by written addendum duly issued by City ("Addendum"). No interpretation not contained in an Addendum shall be valid or have any force or effect whatever, nor entitle any Bidder to assert any claim or demand against City on account thereof.

All Addenda issued prior to the opening of Bidder's Proposals shall become a part of the Bid Package. Each prospective Bidder shall be responsible for inquiring from time to time as to the availability of Addenda.

If any prospective Bidder is in doubt as to the true meaning of any part of the Bid Package, such prospective Bidder shall submit to City a written request for an interpretation thereof as far in advance of the scheduled opening of Bidder's Proposals as possible.

City shall use its best efforts to issue Addenda in response to all valid, appropriate, and timely inquiries, but accepts no responsibility for doing so. Inquiries not answered by Addenda shall be considered invalid, inappropriate, or untimely inquiries.

E. Manufacturer's Recommendations. All work must be performed according to manufacturer's stated recommendations, which are deemed to be incorporated into the Specifications by reference. If those recommendations conflict with any provision of the Specifications, the City shall determine, in its sole discretion, whether the recommendations or the Specifications control.

2. **[Reserved]**

3. **Equipment**

Each Bidder's Proposal shall be accompanied by a set of manufacturer's specifications consisting of a detailed description of the proposed Apparatus, construction methods, and equipment. The manufacturer's specifications shall indicate size, type, model and make of all component parts and equipment, providing proof of compliance with each and every item in the Specifications in this Bid Package. To facilitate comparison between manufacturer specifications and the Specifications in this Bid Package, all manufacturer's specifications shall be submitted in the same sequence as the Specifications in this Bid Package.

In accordance with the current edition of NFPA 1901 standards, each Bidder's Proposal shall specify whether City or Bidder shall provide required loose equipment.

4. **Taxes and Benefits**

City is exempt from state and local sales, use, and excise taxes. Bidder's Price Proposal shall not include any such taxes. A letter of exemption will be provided to the successful Bidder, if necessary. City will not reimburse, nor assist the successful Bidder in obtaining reimbursement for, any state or local sales, use or excise taxes paid by the successful Bidder.

Bidder's Price Proposal shall include all other applicable federal, state, and local taxes of every kind or nature applicable to the Work as well as all taxes, contributions, and premiums for unemployment insurance, old age or retirement benefits, pensions, annuities or other similar benefits.

5. Permits and Licenses

Except as otherwise expressly provided in Attachment A to the Contract, Bidder's Price Proposal shall include the cost of obtaining all permits, licenses, and other approvals and authorizations required by law for performance of the Work. It shall be the sole responsibility of each prospective Bidder to determine the applicable permits, licenses, and other approvals and authorizations. No extra compensation shall be paid by City for the successful Bidder's failure to include these costs in its Bidder's Proposal.

6. Preparation of Bidder's Proposal

Bidder's Proposals to enter into the Contract for the Work shall be made only on the blank Bidder's Proposal form furnished by City and included in the Bid Package. The Bidder's Proposal form included in the Bid Package may be removed from the Bid Package prior to preparation for submission.

Entries on the Bidder's Proposal form shall be typed or legibly written in ink. Price Proposals are to be written by words and by figures as provided on the Bidder's Proposal form. In case of any conflict, words shall prevail. In case of any error in adding or multiplying individual items, the prices listed for individual items shall control over any incorrect total of such items. A Bidder's Proposal may be rejected if it does not contain a requested price for each and every item named in the Bidder's Proposal form or may be interpreted as bidding “no charge” to City for any item left blank.

Prospective Bidders are warned against making alterations of any kind to the Bidder's Proposal form or to any entry thereon. Bidder's Proposals that contain omissions, conditions, alterations, or additions not called for may be rejected or interpreted so as to be most favorable to City.

Each Bidder shall securely staple into its Bidder's Proposal a copy of each Addendum issued and shall include in the place provided therefor in the Bidder's Proposal form a listing of all such Addenda.

Each Bidder shall complete and securely staple into its Bidder's Proposal the Bidder's Sworn Acknowledgement and the Bidder's Sworn Work History Statement included in the Bid Package, and shall staple into its Bidder's Proposal the Bid Security and the surety and insurance commitment letters as specified in the Invitation for Bidder's Proposals.

Every Bidder submitting a Bidder's Proposal shall be conclusively deemed to have evidenced an intention to be bound thereby whether or not the requirements for signing Bidder's Proposals found in Section 7 of these General Instructions to Bidders

are satisfied. However, any Bidder's Proposal that fails to comply with Section 7 of these General Instructions to Bidders may nevertheless be rejected.

Bidder's Proposals that are not submitted on the Bidder's Proposal form furnished by City or that are not prepared in accordance with these General Instructions to Bidders may be rejected. If a deficiently prepared Bidder's Proposal is not rejected, City may demand correction of any deficiency and award the Contract to Bidder upon satisfactory compliance with these General Instructions to Bidders.

Each Bidder must indicate whether its Bidder's Proposal complies with each item set forth in the Specifications by checking "yes" or "no" in the column adjacent to each item.

A complete set of Bidder's specifications with generic scale drawings showing the front, rear, left, right and top views of the proposed Apparatus must be submitted with each Bidder's Proposal.

Each Bidder shall provide a general history and description of their company – both manufacturer and dealership if applicable. City reserves the right to visit and inspect the premises and operation of any Bidder. Each Bidder shall state the location of the factory where the Apparatus will be constructed, the local dealership if applicable, and the closest authorized service center.

Each Bidder must identify at least one in-house customer service representative (salesperson) to handle all routine issues with regards to orders, deliveries, back-orders and invoices. The customer service representative shall provide an e-mail address and be accessible by phone during normal business hours Monday through Friday.

Upon request by City, each Bidder shall submit catalogues, descriptive literature and detailed drawings fully detailing features, designs, construction, appointments, finishes and the like not covered in the Specifications necessary to fully describe the Apparatus proposed to be furnished.

Whenever any equipment, materials or supplies are specified or described in this Bid Package by using the name or other identifying feature of a proprietary product or the name or other identifying feature of a particular manufacturer or vendor, the specific item mentioned shall be understood as establishing the type, function and quality desired. Other manufacturers' or vendors' products may be accepted, provided that the products proposed are equivalent in substance and function to those named, as determined by City in its sole and absolute discretion.

Bidders must identify all exceptions to the Specifications in the format required by the Bidder's Proposal. City may accept proposed exceptions if City determines, in its sole and absolute discretion, that a proposed exception is equal or

superior to the item in the Specifications to which the Bidder takes exception. Bidder's Proposals that take total exception to the Specifications shall not be accepted or considered.

7. **Signature Requirements**

A. Bidder's Proposals. The following requirements shall be observed in the signing of each Bidder's Proposal:

(i) Corporations. Each Bidder's Proposal submitted by a corporation shall be signed by the President or other authorized officer of the corporation and shall also bear the attesting signature of the Secretary or Assistant Secretary of the corporation.

(ii) Partnerships. Each Bidder's Proposal submitted by a partnership shall be signed by all of its general partners or by an attorney-in-fact.

(iii) Individuals. Each Bidder's Proposal submitted by an individual shall be signed by such individual or by an attorney-in-fact.

(iv) Joint Ventures. Each Bidder's Proposal submitted by a joint venture shall be signed by each signator of the joint venture agreement by which such joint venture was formed in accordance with the applicable provisions of (1), (2), and (3) above or by an attorney-in-fact.

When requested by City, satisfactory evidence of the authority of the person or persons signing on behalf of Bidder shall be furnished.

B. Other Documents. The signature requirements set forth in Subsection 7A shall apply to all other documents in the Bid Package required to be executed by Bidder, Bidder's sureties and Bidder's insurance representatives as well as to the Contract, the Contractor's Certification, and all other required documentation related to the Contract.

8. **Bid Security**

A. Required Bid Security. Every Bidder's Proposal shall be accompanied by bid security in the form of a Cashier's Check, Certified Check or Bid Bond as specified in the Invitation for Bidders' Proposals ("Bid Security"), which Bid Security shall stand as a guaranty that (i) Bidder will submit all additional information

requested by City; (ii) if such Bidder's Proposal is accepted, Bidder will timely file the Bonds and the certificates and policies of insurance required by the Contract; and (iii) if such Bidder's Proposal is accepted, Bidder will timely execute the Contract, the Contractor's Certification, and all other required documentation related to the Contract.

B. Return of Bid Security. Bid Security submitted in the form of Cashier's Checks or Certified Checks will be returned within five days after execution of the Contract by City. Bid Bonds will not be returned unless otherwise requested by Bidder.

C. Liquidated Damages. If a Bidder fails to timely submit all additional information requested by City, or if the successful Bidder fails to timely and properly submit all required Bonds, certificates and policies of insurance, or if the successful Bidder fails to timely and properly execute the Contract, the Contractor's Certification, and all other required documentation related to the Contract, it will be difficult and impracticable to ascertain and determine the amount of damage that City will sustain by reason of any such failure. For such reason, every Bidder shall, by submitting its Bidder's Proposal, be deemed to agree that City shall have the right, at its option in the event of any such default, to retain or recover as reasonably estimated liquidated damages, and not as a penalty, the entire amount of the Bid Security or five percent of the Bidder's Price Proposal, whichever is greater, or to exercise any and all equitable remedies it may have against the defaulting Bidder.

9. Submission of Bidder's Proposal

One hard copy and one electronic copy (in PDF format, submitted on a CD, DVD, or USB Flash Drive) of each Bidder's Proposal, properly signed, together with all other required documents, shall be enclosed in a sealed envelope or package and shall be addressed and delivered before the time, and in the manner designated in the Invitation for Bidder's Proposals to the City Clerk's Office at the address shown for the City on the firstpage of the invitations for Bidder's Proposals. All Bidder's Proposals received after the deadline for the opening of bids specified in the Invitation for Bidder's Proposals will be returned unopened.

Each sealed envelope or package containing a Bidder's Proposal shall be identified as such and shall be marked with the title of the Contract and Bidder's full legal name. All Addenda will be considered part of each Bidders' Proposal whether attached or not.

10. Withdrawal of Bidder's Proposal

Any Bidder's Proposal may be withdrawn at any time prior to the opening of any Bidder's Proposal, provided that a request for the withdrawal in writing, executed by Bidder in the manner specified in Section 7 of these General Instructions to Bidders, is filed with City prior to the opening of any Bidder's Proposal. The withdrawal of a

Bidder's Proposal prior to opening of any Bidder's Proposal will not prejudice the right of Bidder to file a new Bidder's Proposal.

No Bidder's Proposal shall be withdrawn without the consent of City for a period of 90 days after the opening of any Bidder's Proposal. Any Bidder's Proposal may be withdrawn at any time following the expiration of said 90 day period, provided that a request for the withdrawal in writing, executed by Bidder in the manner specified in Section 7 of these General Instructions to Bidders, is filed with City after said 90 day period. If no such request is filed, the date for acceptance of such Bidder's Proposal shall be deemed to be extended until such a request is filed, or until City executes a Contract pursuant to the Invitation for Bidders' Proposals, or until City affirmatively and in writing rejects such Bidder's Proposal.

11. **Qualification of Bidders**

A. Factors. City intends to award the Contract only to a Bidder that furnishes satisfactory evidence that it has the requisite experience, ability, capital, facilities, plant, organization and staffing to enable it to perform the Work successfully and promptly and to complete the Work for the Contract Price and within the Contract Time.

B. Additional Information. City reserves the right to require from any Bidder, prior to award of the Contract, a detailed statement regarding the business, technical organizations, and plant of Bidder that is available for the Work. Information pertaining to financial resources, experience of personnel, contract defaults, litigation history, and pending construction projects may also be requested.

C. Final Determination. The final selection of the successful Bidder shall be made on the basis of the amount of the Bidder's Price Proposals, City's prior experience with the Bidders, City's knowledge of the Bidders' performances on other relevant projects, reference checks, the Bidder's financial and organizational capacity to complete the Work in accordance with the Contract, any additional information submitted by Bidders to satisfy City that Bidders are adequately prepared to fulfill the Contract, and all other relevant facts or matters mentioned in the Bid Package or that City may legally consider in making its determination.

12. **Disqualification of Bidders**

A. More Than One Bidder's Proposal. No more than one Bidder's Proposal for the Work described in the Contract shall be considered from any single corporation, partnership, individual or joint venture, whether under the same or different names and whether or not in conjunction with any other corporation, partnership, individual or joint venture. Reasonable grounds for believing that any corporation, partnership, individual or joint venture is interested in more than one Bidder's Proposal

for the Work may cause the rejection of all Bidder's Proposals in which such corporation, partnership, individual or joint venture is interested. Nothing contained in this Subsection 12A shall prohibit any single corporation, partnership, individual or joint venture, whether under the same or different names and whether or not in conjunction with any other corporation, partnership, individual or joint venture, from submitting a bid or quoting prices to more than one Bidder for equipment, materials and supplies or labor to be furnished as a subcontractor or supplier.

B. Collusion. If there are reasonable grounds for believing that collusion exists among any Bidders, all Bidder's Proposals of the participants in such collusion will not be considered.

C. Default. If a Bidder is or has been in default on a contract with City or in the payment of monies due City, its Bidder's Proposal will not be considered.

13. **Award of Contract**

A. Reservation of Rights. City reserves the right to accept the Bidder's Proposal that is, in its judgment, the best and most favorable to the interests of City and the public; to reject the low Price Proposal; to accept any item of any Bidder's Proposal; to reject any and all Bidder's Proposals; to accept and incorporate corrections, clarifications or modifications following the opening of the Bidders' Proposals when to do so would not, in City's opinion, prejudice the bidding process or create any improper advantage to any Bidder; and to waive irregularities and informalities in the bidding process or in any Bidder's Proposal submitted; provided, however, that the waiver of any prior defect or informality shall not be considered a waiver of any future or similar defects or informalities, and Bidders should not rely upon, or anticipate, such waivers in submitting their Bidder's Proposals.

B. Firm Offers. All Bidders' Proposals are firm offers to enter into the Contract and no Bidder's Proposal shall be deemed rejected, notwithstanding acceptance of any other Bidder's Proposal, until the Contract has been executed by both City and the successful Bidder or until City affirmatively and in writing rejects such Bidder's Proposal.

C. Time of Award. It is expected that the award of the Contract, if it is awarded, will be made within 90 days following the opening of the Bidders' Proposals. Should administrative difficulties be encountered after the opening of the Bidder's Proposals, including the annulment of any award, that may delay an award or subsequent award beyond such 90 day period, City may accept any Bidder's Proposal for which the date for acceptance has been extended as provided in Section 10 of these General Instructions to Bidders in order to avoid the need for readvertisement. No Bidder shall be under any obligation to extend the date for acceptance of its Bidder's Proposal. Failure of one or more of the Bidders or their sureties to extend the date for

acceptance of its Bidder's Proposal shall not prejudice the right of City to accept any Bidder's Proposal for which the date for acceptance has been extended.

14. **Notice of Award; Effective Date of Award**

If the Contract is awarded by City, such award shall be effective when a Notice of Award in the form included in the Bid Package has been delivered to the successful Bidder ("Effective Date of Award"). City will prepare five copies of the Contract based upon Bidder's Proposal and will submit them to the successful Bidder with the Notice of Award.

15. **Closing of Contract**

A. Closing Date. Unless otherwise stated in the Notice of Award, the successful Bidder shall satisfactorily complete all Conditions Precedent to Closing before, and the Contract and all related documents shall be executed, submitted and exchanged by City and Bidder ("Closing") on, the tenth day following the Effective Date of Award or within such extended period as City may, in the exercise of its sole discretion, authorize in writing after issuance of the Notice of Award ("Closing Date").

B. Conditions Precedent to Closing. On or before the Closing Date, the successful Bidder shall: (i) sign (in accordance with Section 7), date as of the Closing Date, and submit to City five copies of the Contract, the Contractor's Certification, and all other required documentation related to the Contract; and (ii) submit five executed copies of all required Bonds dated as of the Closing Date and all certificates and policies of insurance (see Contract, Article IV) ("Conditions Precedent to Closing").

Failure to timely execute or submit any of the aforesaid documents shall be grounds for the imposition of liquidated damages as more specifically set forth in Section 8 above. If the submitted documents or any of them fail to comply with these General Instructions to Bidders or the Contract or are not timely executed and submitted, City may, in its sole discretion, annul the award or allow the successful Bidder an opportunity to correct the deficiencies.

In no event will City execute the Contract until any and all such deficiencies have been cured or City has received adequate assurances, as determined by City, of complete and prompt performance.

C. Closing. At the Closing, and provided that all documents required to be submitted prior to or at the Closing have been reviewed and determined by City to be in compliance with these General Instructions to Bidders and the Contract, or assurances of complete and prompt performance satisfactory to City have been received, City shall execute all copies of the Contract, retain three copies of the completed Contract, and tender two copies to the successful Bidder at the Closing. The

successful Bidder shall tender one copy to its surety company or companies. The successful Bidder or its agent shall be present at the Closing.

16. **Failure to Close**

A. Annulment of Award; Liquidated Damages. The failure or refusal of a successful Bidder to comply with the Conditions Precedent to Closing or to Close shall be just cause for the annulment of the award and the imposition of liquidated damages or the exercise of equitable remedies, both as are more specifically set forth in Section 8 above.

B. Subsequent Awards. Upon annulment of an award, City may accept, and award a Contract based on, any other Bidder's Proposal as City, in its sole judgment, deems to be the best, or may invite new Proposals, or may abandon the bidding process or the Work.

CITY OF DES PLAINES

CONTRACT FOR THE PROVISION OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

BIDDER'S PROPOSAL

Full Name of Bidder _____("Bidder")

Principal Office Address _____

Local Office Address _____

Contact Person _____ Telephone _____

Contact Person e-mail address:_____

TO: City of Des Plaines ("City")
1420 Miner Street
Des Plaines, IL 60016
Attention: City Clerk, Gloria Ludwig

Bidder warrants and represents that Bidder has carefully reviewed and understood all documents included, referred to, or mentioned in this bound set of documents, including Addenda Nos. _____, which are securely stapled to the end of this Bidder's Proposal [if none, write "NONE"] ("Bid Package").

Bidder acknowledges and agrees that all terms capitalized in this Bidder's Proposal shall have the meaning given to them in the documents included in the Bid Package.

1. **Work Proposal**

A. Contract and Work. If this Bidder's Proposal is accepted, Bidder proposes, and agrees, that Bidder will contract with City, in the form of the Contract included in the Bid Package: (i) to provide, perform and complete in the manner described and specified in the Bid Package all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data and other means and items necessary for the construction and delivery of the Apparatus as specified in the Bid Package, including, without limitation, the Specifications attached to the Contract; (ii) to procure and furnish

all permits, licenses and other governmental approvals and authorizations necessary in connection therewith except as otherwise expressly provided in Attachment A to the Contract included in the Bid Package; (iii) to procure and furnish all Bonds and all certificates and policies of insurance specified in the Bid Package; (iv) to pay all applicable federal, state and local taxes; (v) to do all other things required of Contractor by the Contract; and (vi) to provide, perform and complete all of the foregoing in a proper and workmanlike manner and in full compliance with, and as required by or pursuant to, the Contract; all of which is herein referred to as the "Work."

B. Manner and Time of Performance. If this Bidder's Proposal is accepted, Bidder proposes, and agrees, that Bidder will perform the Work in the manner and time prescribed in the Bid Package and according to the requirements of City pursuant thereto.

C. General. If this Bidder's Proposal is accepted, Bidder proposes, and agrees, that Bidder will do all other things required of Bidder or Contractor, as the case may be, by the Bid Package.

2. **Contract Price Proposal**

A. Price. If this Bidder's Proposal is accepted, Bidder will, except as otherwise provided in Section 2.1 of the Contract, take in full payment for all Work and other matters set forth under Section 1 above, including overhead and profit; taxes, contributions, and premiums; and compensation to all subcontractors and suppliers, the compensation set forth on the following "Schedule of Prices" ("Price Proposal"), which Schedule of Prices Bidder understands and agrees will be made a part of the Contract:

SCHEDULE OF PRICES

Make	Model	Price
		$
	SubTotal	$
	Less Trade In (if applicable)	($)
	TOTAL PRICE	$

B. Basis for Determining Prices. It is expressly understood and agreed that:

i. The approximate quantities set forth in this Schedule of Prices for each Unit Price Item are City's estimate only, that City reserves the right to increase or decrease such quantities, and that payment for each Unit Price Item shall be made only on the actual number of acceptable units of such Unit Price Item installed complete in place, measured on the basis defined in the Contract;

ii. City is not subject to state or local sales, use and excise taxes and no such taxes are included in this Schedule of Prices;

iii. All other applicable federal, state, and local taxes of every kind and nature applicable to the Work as well as all taxes, contributions, and premiums for unemployment insurance, old age or retirement benefits, pensions, annuities, or other similar benefits are included in this Schedule of Prices; and

iv. All costs, royalties, and fees arising from the use on, or the incorporation into, the Work of patented equipment, materials, supplies, tools, appliances, devices, processes, or inventions are included in this Schedule of Prices.

All claim to any additional compensation by reason of the payment of any such tax, contribution, or premium or any such cost, royalty or fee is hereby waived and released.

3. **Contract Time Proposal**

If this Bidder's Proposal is accepted, Bidder will commence the Work not later than the "Commencement Date" set forth in Attachment A to the Contract, will perform the Work diligently and continuously, and will complete the Work not later than the "Completion Date" set forth in Attachment A to the Contract.

4. **Firm Proposal**

All prices and other terms stated in this Bidder's Proposal are firm and shall not be subject to withdrawal, escalation, or change for a period of 60 days after the date on which any Bidder's Proposal is opened or such extended acceptance date for Bidders' Proposals as may be established pursuant to Sections 10 and 13 of the General Instructions to Bidders.

5. **Bidder Representations**

A. No Collusion. Bidder warrants and represents that the only persons, firms, or corporations interested in this Bidder's Proposal as principals are those named in Bidder's Sworn Acknowledgment attached hereto and that this Bidder's Proposal is made without collusion with any other person, firm or corporation.

B. Not Barred. Bidder warrants, represents and certifies that it is not barred by law from contracting with City or with any unit of state or local government.

C. Qualified. Bidder warrants and represents that it has the requisite experience, ability, capital, facilities, plant, organization and staff to enable Bidder to perform the Work successfully and promptly and to commence and complete the Work within the Contract Price and Contract Time Proposals set forth above. In support thereof, Bidder submits the attached Sworn Work History Statement. In the event Bidder is preliminarily deemed to be one of the most favorable to the interests of City, Bidder hereby agrees to furnish upon request, within two business days or such longer period as may be set forth in the request, such additional information as may be necessary to satisfy City that Bidder is adequately prepared to fulfill the Contract.

D. City's Reliance. Bidder acknowledges that City is relying on all warranties, representations and statements made by Bidder in this Bidder's Proposal.

6. **Surety and Insurance**

Bidder herewith tenders surety and insurance commitment letters as specified in Section 6 of the Invitation for Bidders' Proposals.

7. **Bid Security**

Bidder herewith tenders a Cashier's Check, Certified Check, or Bid Bond as specified in Section 6 of the Invitation for Bidder's Proposals for the sum of _____ dollars ($_____), which is equal to at least five percent of Bidder's Price Proposal ("Bid Security").

8. **City's Remedies**

Bidder acknowledges and agrees that should Bidder fail to timely submit all additional information that is requested of it; or should Bidder, if City awards Bidder the Contract, fail to timely submit all the Bonds and all the certificates and policies of insurance required of it; or should Bidder, if City awards Bidder the Contract, fail to timely execute the Contract, Contractor's Certification and all other required documentation related to the Contract, it will be difficult and impracticable to ascertain and determine the amount of damage that City will sustain by reason of any such failure and, for such reason, City shall have the right, at its option in the event of any such default by Bidder, to retain or recover as reasonably estimated liquidated damages, and not as a penalty, the entire amount of the Bid Security or five percent of Bidder's Price Proposal, whichever is greater, or to exercise any and all equitable remedies it may have against Bidder.

9. **City's Rights**

Bidder acknowledges and agrees that City reserves the right to reject any and all Bidder's Proposals, reserves the right to accept or reject any item of any Bidder's Proposal and reserves such other rights as are set forth in Section 13 of the General Instructions to Bidders.

10. **Bidder's Obligations**

In submitting this Bidder's Proposal, Bidder understands and agrees that it shall be bound by each and every term, condition or provision contained in the Bid Package, which are by this reference incorporated herein and made a part hereof.

If Bidder proposes any exceptions or alterations to the Specifications, Bidder must list each proposed exception in writing on separate sheets, on Bidder's company letterhead, and in the following format:

SUMMARY OF PROPOSED EXCEPTIONS

Page	Section Title	Explanation

DATED this _____ day of _____, 2016.

Attest/Witness: _____
Bidder

By: _____ By: _____

Title: _____ Title: _____

SEE GENERAL INSTRUCTIONS TO BIDDERS, SECTION 7, FOR SIGNATURE REQUIREMENTS

CITY OF DES PLAINES

CONTRACT FOR THE PROVISION
OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

BIDDER'S SWORN ACKNOWLEDGEMENT

_____ ("Deponent"), being first duly sworn on oath, deposes and states that the undersigned Bidder is organized as indicated below and that all statements herein made are made on behalf of such Bidder in support of its Bidder's Proposal for the above Contract and that Deponent is authorized to make them.

Deponent also deposes and states that Bidder has carefully prepared, reviewed and checked its Bidder's Proposal and that the statements contained in its Bidder's Proposal and in this Acknowledgement are true and correct.

COMPLETE APPLICABLE SECTION ONLY

1. **Corporation (if applicable)**

Bidder is a corporation that is organized and existing under the laws of the State of _____, that is qualified to do business in the State of Illinois, and that is operating under the legal name of _____.

The officers of the corporation are as follows:

TITLE	NAME	ADDRESS
President	_____	_____
Vice President	_____	_____
Secretary	_____	_____
Treasurer	_____	_____

2. **Partnership (if applicable)**

Bidder is a partnership that is organized, existing and registered under the laws of the State of _____ pursuant to that certain Partnership Agreement dated as of _____, that is qualified to do business in the State of Illinois, and that is operating under the legal name of _____.

ACKNOWLEDGEMENT

The general partners of the partnership are as follows:

NAME	**ADDRESS**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. **Individual (if applicable)**

Bidder is an individual whose full name is _____, whose residence address is _____ and whose business address is _____. If operating under a trade or assumed name, said trade or assumed name is as follows: _____.

4. **Joint Venture (If applicable)**

Bidder is a joint venture that is organized and existing under the laws of the State of _____ pursuant to that certain Joint Venture Agreement dated as of _____, that is qualified to do business in the State of Illinois, and that is operating under the legal name of _____.

The signatories to the aforesaid Joint Venture Agreement are as follows:

NAME (and ENTITY TYPE)	**ADDRESS**
_____(___)	_____
_____(___)	_____
_____(___)	_____

[For each signatory, indicate type of entity (Corporation = "C"; Partnership = "P"; and Individual = "I") and provide, on separate sheets, the information required in Paragraph 1, 2, or 3 above, as applicable]

ACKNOWLEDGEMENT

DATED this _____ day of _____, 2016.

Attest/Witness: _____
Bidder

By: _____ By: _____

Title: _____ Title: _____

Subscribed and Sworn to
before me this ____ day
of _____, 2016.

My Commission Expires: _____

_____ [SEAL]
Notary Public

**SEE GENERAL INSTRUCTIONS TO BIDDERS, SECTION 7,
FOR SIGNATURE REQUIREMENTS**

CITY OF DES PLAINES

CONTRACT FOR THE PROVISION
OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

BIDDER'S SWORN WORK HISTORY STATEMENT

_____ ("Deponent"), being first duly sworn on oath, deposes and states that all statements made in this Sworn Work History Statement are made on behalf of the undersigned Bidder in support of its Bidder's Proposal for the above Contract and that Deponent is authorized to make them.

Deponent also deposes and states that Bidder has carefully prepared, reviewed and checked this Sworn Work History Statement and that the statements contained in this Sworn Work History Statement are true and correct.

IF NECESSARY FOR FULL DISCLOSURE, ADD SEPARATE SHEETS

JOINT VENTURES MUST SUBMIT SEPARATE
SWORN WORK HISTORY STATEMENTS FOR THE JOINT VENTURE
AND FOR EACH SIGNATORY TO THE JOINT VENTURE AGREEMENT

1. **Nature of Business**

State the nature of Bidder's business: _____
_____

2. **Composition of Work**

During the past three years, Bidder's work has consisted of:

____% Federal	____% As Contractor	____% Bidder's Forces
____% Other Public	____% As Subcontractor	____% Subcontractors
____% Private		____% Materials

3. **Years in Business**

State the number of years that Bidder, under its current name and organization, has been continuously engaged in the aforesaid business: _____ years

WORK HISTORY STATEMENT

4. **Predecessor Organizations**

If Bidder has been in business under its current name and organization for less than five years, list any predecessor organizations:

NAME	ADDRESS	YEARS
_____	_____	_____
_____	_____	_____

5. **Business Licenses**

List all business licenses currently held by Bidder:

ISSUING AGENCY	TYPE	NUMBER	EXPIRATION
_____	_____	_____	_____
_____	_____	_____	_____

6. **Related Experience**

A. List at least then full-time or combination urban or suburban fire departments that have purchased a similar apparatus to the Apparatus from Bidder within the 12 months prior to the bid opening date.

I. _____
II. _____
III. _____
IV. _____
V. _____
VI. _____
VII. _____
VIII. _____
IX. _____
X. _____

B. List an additional ten full-time or combination urban or suburban fire departments that have purchased a similar apparatus to the Apparatus from Bidder between five and ten years prior to the bid opening date.

i. _____
ii. _____
iii. _____

iv. _____
v. _____
vi. _____
vii. _____
viii. _____
ix. _____
x. _____

7. **Customer Service Representative**

Identify the customer service representative or representatives who will be designated to handle all City inquiries regarding the Apparatus if the Contract is awarded to Bidder.

_____

DATED this _____ day of _____, 2016.

Attest/Witness: _____
Bidder

By: _____ By: _____

Title: _____ Title: _____

Subscribed and Sworn to before me this ____ day of _____, 2016.

My Commission Expires: _____

_____
Notary Public

[SEAL]

SEE GENERAL INSTRUCTIONS TO BIDDERS, SECTION 7, FOR SIGNATURE REQUIREMENTS

CITY OF DES PLAINES

CONTRACT FOR THE PROVISION OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

NOTICE OF AWARD

CERTIFIED MAIL/RETURN RECEIPT REQUESTED OR PERSONAL DELIVERY

TO: ***[SUCCESSFUL BIDDER]*** ("Contractor")

[ADDRESS OF SUCCESSFUL BIDDER]

FROM: City of Des Plaines
1420 Miner Street
Des Plaines, IL 60016
Sixth Floor, City Clerk's Office

("City")

On the __ day of _____, 2016 City found to be most favorable to the interests of City the Bidder's Proposal submitted by Contractor and dated on the ___ day of _____ 2016 in which Contractor proposes to contract with City, in the form of the Contract included in the Bid Package to perform the following Work: (1) to provide, perform and complete in the manner described and specified in the Bid Package all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data and other means and items necessary for the construction and delivery of the Apparatus as specified in the Bid Package; (2) to procure and furnish all permits, licenses and other governmental approvals and authorizations necessary in connection therewith except as otherwise expressly provided in Attachment A to the Contract included in the Bid Package; (3) to procure and furnish all Bonds and all certificates and policies of insurance specified in the Bid Package; (4) to pay all applicable federal, state and local taxes; (5) to do all other things required of the Contractor by the Contract; and (6) to provide, perform and complete all of the foregoing in a proper and workmanlike manner and in full compliance with, and as required by or pursuant to, the Contract.

CITY ACCORDINGLY AWARDS CONTRACTOR, EFFECTIVE AS OF THE DATE OF DELIVERY OF THIS NOTICE OF AWARD, THE CONTRACT FOR SAID WORK FOR THE LUMP SUM AND/OR UNIT PRICES, AS THE CASE MAY BE, SET FORTH IN THE BIDDER'S PROPOSAL.

A Closing will be held at _____ on the ___ day of _____, 2016, at the above listed office of City at which time the Contract will be executed by City provided that all Conditions Precedent to Closing have been satisfied. Contractor must

have complied with all Conditions Precedent to Closing set forth in Section 15 of the General Instructions to Bidders included in the Bid Package, on or before the Closing Date.

The failure or refusal to comply with the Conditions Precedent to Closing on or before the Closing Date or to Close on the Closing Date shall result, at City's option, in the imposition of liquidated damages and the annulment of this award, or in City's exercise of any or all equitable remedies City may have, all are more specifically set forth in Sections 8, 15, and 16 of the General Instructions to Bidders.

DATED this ___ day of _____, 2016.

CITY OF DES PLAINES

By: /s/_____

CONTRACT BETWEEN

CITY OF DES PLAINES

AND

[NAME OF SUCCESSFUL BIDDER]

FOR THE PROVISION
OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

Contract Number: ***[ ]***

CONTRACT BETWEEN

CITY OF DES PLAINES

AND

[NAME OF SUCCESSFUL BIDDER]

FOR THE PROVISION
OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

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CONTRACT BETWEEN

CITY OF DES PLAINES

AND

[NAME OF SUCCESSFUL BIDDER]

FOR THE PROVISION

OF A CUSTOM TRIPLE COMBINATION PUMPER FIRE APPARATUS

Contract Number: ***[ ]***

In consideration of the mutual promises set forth below, the City of Des Plaines, an Illinois home rule Municipal Corporation ("City"), and ***[NAME OF SUCCESSFUL BIDDER]***, a ***[FORM OF ORGANIZATION]*** ("Contractor"), make this Contract as of the ____ day of _____, 2016, and hereby agree as follows:

ARTICLE I
THE WORK

1.1 Performance of the Work

Contractor shall, at its sole cost and expense, provide, perform, and complete all of the following, all of which is herein referred to as the "Work":

1. Labor, Equipment, Materials, and Supplies. Provide, perform, and complete, in the manner described and specified in this Contract, all necessary work, labor, services, transportation, equipment, materials, apparatus, machinery, tools, fuels, gas, electric, water, waste disposal, information, data, and other means and items necessary to construct and deliver the custom fire triple combination pumper apparatus ("Apparatus"), all as further defined in Attachment A, in accordance with the specifications attached hereto as Attachment B ("Specifications").

2. Permits. Except as otherwise provided in Attachment A, procure and furnish all permits, licenses, and other governmental approvals and authorizations necessary in connection therewith.

3. Bonds and Insurance. Procure and furnish all Bonds and all certificates and policies of insurance specified in this Contract.

4. Taxes. Pay all applicable federal, state, and local taxes.

5. Miscellaneous. Do all other things required of Contractor by this Contract, including, without limitation, arranging for all services needed for the Work and for testing of the Apparatus prior to delivery to City.

6. Quality. Provide, perform and complete all of the foregoing in a proper and workmanlike manner, consistent with the highest standards of professional, manufacturing, and fabrication practices and in full compliance with, and as required by or pursuant to, this Contract, and with the greatest economy, efficiency, and expedition consistent therewith, with only new, undamaged and first quality equipment, materials, and supplies.

1.2 Commencement and Completion Dates

Contractor shall commence the Work not later than the "Commencement Date" set forth on Attachment A and shall diligently and continuously prosecute the Work at such a rate as will allow the Work to be fully provided, performed, and completed in full compliance with this Contract not later than the "Completion Date" set forth in Attachment A (collectively, the "Contract Time").

1.3 Required Submittals

A. Submittals Required. Contractor shall submit to City all documents, data, and information specifically required to be submitted by Contractor under this Contract and shall, in addition, submit to City all such drawings, specifications, descriptive information, and engineering documents, data, and information as may be required, or as may be requested by City, to show the details of the Work, including a complete description of all equipment, materials, and supplies to be provided under this Contract ("Required Submittals"). Such details shall include, but shall not be limited to, design data, structural and operating features, principal dimensions, and all similar matters, for all components of the Work.

B. Number and Format. Except as otherwise provided in Attachment B, Contractor shall provide three complete sets for each Required Submittal. All Required Submittals, except drawings, shall be prepared on white 8-1/2 inch by 11 inch paper. All prints of drawings shall be folded to 8-1/2 inches by 11 inches, or less. All drawings shall be clearly marked in the lower right-hand corner with the names of City and Contractor.

C. Time of Submission and City's Review. All Required Submittals shall be provided to City no later than the time, if any, specified in this Contract for their submission or, if no time for submission is specified, in sufficient time, in City's sole opinion, to permit City to review the same prior to the commencement of the part of the Work to which they relate and prior to the purchase of any equipment, materials, or supplies that they describe. City shall have the right to require such corrections as may

be necessary to make such submittals conform to this Contract. All such submittals shall, after final processing and review with no exception (or its equivalent) noted by City, become a part of this Contract. No Work related to any submittal shall be performed by Contractor until City has completed review of such submittal with no exception (or its equivalent) noted. City's review and stamping of any Required Submittal shall be for the sole purpose of examining the general management, design, and details of the proposed Work, shall not relieve Contractor of the entire responsibility for the performance of the Work in full compliance with, and as required by or pursuant to this Contract, and shall not be regarded as any assumption of risk or liability by City.

D. Responsibility for Delay. Contractor shall be responsible for any delay in the Work due to delay in providing Required Submittals conforming to this Contract.

1.4 Review and Interpretation of Contract Provisions

Contractor represents and warrants that it has carefully reviewed this Contract, including all of its Attachments and Appendices, all of which are by this reference incorporated into and made a part of this Contract. Contractor shall, at no increase in the Contract Price, provide workmanship, equipment, materials, and supplies that fully conform to this Contract. Whenever any equipment, materials or supplies are specified or described in this Contract by using the name or other identifying feature of a proprietary product or the name or other identifying feature of a particular manufacturer or vendor, the specific item mentioned shall be understood as establishing the type, function and quality desired. Other manufacturers' or vendors' products may be accepted, provided that the products proposed are equivalent in substance and function to those named as determined by City in its sole and absolute discretion.

Contractor shall promptly notify City of any discrepancy, error, omission, ambiguity, or conflict among any of the provisions of this Contract before proceeding with any Work affected thereby. If Contractor fails to give such notice to City, then the subsequent decision of City as to which provision of this Contract shall govern shall be final, and any corrective work required shall not entitle Contractor to any damages, to any compensation in excess of the Contract Price, or to any delay or extension of the Contract Time.

When the equipment, materials, or supplies furnished by Contractor cannot be installed as specified in this Contract, Contractor shall, without any increase in the Contract Price, make all modifications required to properly install the equipment, materials, or supplies. Any such modification shall be subject to the prior review and written consent of City.

1.5 Reserved

1.6 Technical Ability to Perform

Contractor represents and warrants that it is sufficiently experienced and competent, and has the necessary capital, facilities, plant, organization, and staff, to provide, perform and complete the Work in full compliance with, and as required by or pursuant to, this Contract.

1.7 Financial Ability to Perform

Contractor represents and warrants that it is financially solvent, and Contractor has the financial resources necessary to provide, perform and complete the Work in full compliance with, and as required by or pursuant to, this Contract.

1.8 Time

Contractor represents and warrants that it is ready, willing, able and prepared to begin the Work on the Commencement Date and that the Contract Time is sufficient time to permit completion of the Work in full compliance with, and as required by or pursuant to, this Contract for the Contract Price, all with due regard to all natural and man-made conditions that may affect the Work and all difficulties, hindrances, and delays that may be incident to the Work.

1.9 Reserved

1.10 Reserved

1.11 Damage to the Work and Other Property

The Work and everything pertaining thereto shall be provided, performed, completed, and maintained at the sole risk and cost of Contractor from the Commencement Date until Final Payment. Contractor shall have no claim against City because of any damage or loss to the Work or to Contractor's equipment, materials, or supplies from any cause whatsoever, including damage or loss due to simultaneous work by others. Contractor shall, promptly and without charge to City, repair or replace, to the satisfaction of City, any damage done to, and any loss suffered by, the Work or other property as a result of the Work. Notwithstanding any other provision of this Contract, Contractor's obligations under this Section shall exist without regard to, and shall not be construed to be waived by, the availability or unavailability of any insurance, either of City or Contractor, to indemnify, hold harmless, or reimburse Contractor for the cost of any repair or replacement work required by this Section.

1.12 Subcontractors and Suppliers

A. Approval and Use of Subcontractors and Suppliers. Contractor shall perform the Work with its own personnel and under the management, supervision, and control of its own organization unless otherwise approved by City in writing. All subcontractors, suppliers, and subcontracts used by Contractor shall be acceptable to, and approved in advance by, City. City's approval of any subcontractor, supplier, and subcontract shall not relieve Contractor of full responsibility and liability for the provision, performance, and completion of the Work in full compliance with, and as required by or pursuant to, this Contract. All Work performed under any subcontract shall be subject to all of the provisions of this Contract in the same manner as if performed by employees of Contractor. Every reference in this Contract to "Contractor" shall be deemed also to refer to all subcontractors and suppliers of Contractor. Every subcontract shall include a provision binding the subcontractor or supplier to all provisions of this Contract.

B. Removal of Subcontractors and Suppliers. If any subcontractor or supplier fails to perform the part of the Work undertaken by it in a manner satisfactory to City, Contractor shall immediately upon notice from City terminate such subcontractor or supplier. Contractor shall have no claim for damages, for compensation in excess of the Contract Price, or for a delay or extension of the Contract Time as a result of any such termination.

ARTICLE II
CHANGES AND DELAYS

2.1 Changes

City shall have the right, by written order executed by City, to make changes in the Contract, the Work, and the Contract Time ("Change Order"). If any Change Order causes an increase or decrease in the amount of the Work, an equitable adjustment in the Contract Price or Contract Time may be made. All claims by Contractor for an equitable adjustment in either the Contract Price or the Contract Time shall be made within two business days following receipt of such Change Order, and shall, if not made prior to such time, be conclusively deemed to have been waived. No decrease in the amount of the Work caused by any Change Order shall entitle Contractor to make any claim for damages, anticipated profits, or other compensation.

2.2 Delays

A. Extensions for Unavoidable Delays. For any delay that may result from causes that could not be avoided or controlled by Contractor, Contractor shall, upon timely written application, be entitled to issuance of a Change Order providing for an extension of the Contract Time for a period of time equal to the delay resulting from such unavoidable cause. No extension of the Contract Time shall be allowed for any other delay in completion of the Work.

B. No Compensation for Delays. No payment, compensation, damages, or adjustment of any kind, other than the extension of the Contract Time provided in Subsection 2.2A above, shall be made to, or claimed by, Contractor because of hindrances or delays from any cause in the commencement, prosecution, or completion of the Work, whether caused by City or any other party and whether avoidable or unavoidable.

ARTICLE III
CONTRACTOR'S RESPONSIBILITY FOR DEFECTIVE WORK

3.1 Inspection; Testing; Correction of Defects

A. Inspection. Until Final Payment, all parts of the Work shall be subject to inspection and testing by City or its designated representatives. Contractor shall furnish, at its own expense, all reasonable access, assistance, and facilities required by City for such inspection and testing.

B. Re-Inspection. Re-inspection and re-testing of any Work may be ordered by City at any time, and, if so ordered, any covered or closed Work shall be uncovered or opened by Contractor. If the Work is found to be in full compliance with this Contract, then City shall pay the cost of uncovering, opening, re-inspecting, or re-testing, as the case may be. If such Work is not in full compliance with this Contract, then Contractor shall pay such cost.

C. Correction. Until Final Payment, Contractor shall, promptly and without charge, repair, correct, or replace all or any part of the Work that is defective, damaged, flawed, or unsuitable or that in any way fails to conform strictly to the requirements of this Contract.

3.2 Warranty of Work

A. Scope of Warranty. Contractor warrants that the Work and all of its components shall be free from defects and flaws in design, workmanship, and materials; shall strictly conform to the requirements of this Contract; and shall be fit, sufficient and suitable for the purposes expressed in, or reasonably inferred from, this Contract. The warranty herein expressed shall be in addition to any other warranties expressed in this Contract, or expressed or implied by law, which are hereby reserved unto City. In addition to the provisions of this Paragraph, Contractor shall provide those warranties specified in Attachment A.

B. Repairs; Extension of Warranty. Contractor shall, promptly and without charge, correct any failure to fulfill the warranty described in Section 3.2.A of this Contract that may be discovered or develop at any time within two years after Final Payment or such longer period as may be prescribed in Attachment B or by law. The

above warranty shall be extended automatically to cover all repaired and replacement parts and labor provided or performed under such warranty and Contractor's obligation to correct Work shall be extended for a period of two years from the date of such repair or replacement. The time period established in this Subsection 3.2B relates only to the specific obligation of Contractor to correct Work and shall not be construed to establish a period of limitation with respect to other obligations that Contractor has under this Contract.

C. Subcontractor and Supplier Warranties. Whenever this Contract requires a subcontractor or supplier to provide a guaranty or warranty, Contractor shall be solely responsible for obtaining said guaranty or warranty in form satisfactory to City and assigning said warranty or guaranty to City. Acceptance of any assigned warranties or guaranties by City shall be a precondition to Final Payment and shall not relieve Contractor of any of its guaranty or warranty obligations under this Contract.

3.3 City's Right to Correct

If, within two business days after City gives Contractor notice of any defect, damage, flaw, unsuitability, nonconformity, or failure to meet warranty subject to correction by Contractor pursuant to Section 3.1 or Section 3.2 of this Contract, Contractor neglects to make, or undertake with due diligence to make, the necessary corrections, then City shall be entitled to make, either with its own forces or with contract forces, the corrections and to recover from Contractor all resulting costs, expenses, losses, or damages, including attorneys' fees and administrative expenses.

ARTICLE IV
FINANCIAL ASSURANCES

4.1 Bonds

Contemporaneous with Contractor's execution of this Contract, Contractor shall provide a Performance Bond and five-year Warranty Bond , on forms provided by, or otherwise acceptable to, City, from a surety company licensed to do business in the State of Illinois with a general rating of A minus and a financial size category of Class X or better in Best's Insurance Guide, each in the penal sum of the Contract Price (collectively, “Bonds”). Contractor shall, at all times while providing, performing, or completing the Work, including, without limitation, at all times while correcting any failure to meet warranty pursuant to Section 3.2 of this Contract, maintain and keep in force, at Contractor's expense, the Bonds required hereunder. Contractor shall be considered in all cases, the prime manufacturer and in any case the prime manufacturer shall coordinate, assist and ensure that all warranty claims are managed and brought to conclusion without deferral of responsibility. All equipment and components supplied with the apparatus shall have sole source warranty provided by the Contractor.

4.2 Insurance

Contemporaneous with Contractor's execution of this Contract, Contractor shall provide certificates and policies of insurance evidencing the minimum insurance coverages and limits set forth in Attachment A. For good cause shown, City may extend the time for submission of the required policies of insurance upon such terms, and with such assurances of complete and prompt performance, as City may impose in the exercise of its sole discretion. Such policies shall be in a form, and from companies, acceptable to City. Such insurance shall provide that no change, modification in, or cancellation of any insurance shall become effective until the expiration of 30 days after written notice thereof shall have been given by the insurance company to City. Contractor shall, at all times while providing, performing, or completing the Work, including, without limitation, at all times while correcting any failure to meet warranty pursuant to Section 3.2 of this Contract, maintain and keep in force, at Contractor's expense, the minimum insurance coverages and limits set forth in Attachment A.

4.3 Indemnification

Contractor shall indemnify, save harmless and defend City, its officers and employees from any and all liability, losses or damages, including attorney's fees and costs of defense, City may suffer as a result of claims, demands, suits, actions or proceedings of any kind or nature, including worker's compensation claims, in any way resulting from or arising out of or relating to any act, omissions or the operations of the manufacturer under the Contract, including operations of its employees and subcontractors, and Contractor shall, at its own expense, appear, defend, and pay all fees of attorneys and all costs and other expenses arising therefrom or incurred in connection therewith; and, if any judgments shall be rendered against City in any such action, Contractor shall, at its own expense, promptly satisfy and discharge same. Contractor expressly understands and agrees that any Bonds or insurance protection required by this Contract, or otherwise provided by Contractor, shall in no way limit Contractor's responsibility to indemnify, keep and save harmless, and defend City as herein provided. Contractor further agrees to indemnify, defend and save City harmless from any and all claims, actions, lawsuits, liabilities, losses, damages, costs and expenses (including attorney's fees) arising from or alleged to arise from any or all of the following:

a. Actual or alleged infringement of any patent, trademark, copyright or any similar right or any claim of unfair competition in connection with the product and shall promptly notify City thereof;

b. Actual or alleged death or injury to any person, damage to any property or any other damage or loss resulting or claimed to result in whole or in part from any actual or alleged defect in the product, whether latent or patent, including actual or alleged improper construction or design of the products or the failure of the Work to comply with specifications or any express or implied warranties of the manufacturer; and

c. Actual or alleged violation by the Work, or its manufacture, possession, use or sale, of any law, statute or ordinance or any governmental administrative order, rule or regulation.

The indemnification provisions of this Section 4.3 shall survive acceptance of the Apparatus and termination of the Contract.

ARTICLE V
PAYMENT

5.1 Contract Price

City shall pay to Contractor, in accordance with and subject to the terms and conditions set forth in this Article V and Attachment A, and Contractor shall accept in full satisfaction for providing, performing, and completing the Work, the amount or amounts identified and set forth in Attachment A (the "Contract Price"), subject to any additions, deductions, or withholdings provided for in this Contract.

5.2 Taxes and Benefits

City is exempt from and shall not be responsible to pay, or reimburse Contractor for, any state or local sales, use, or excise taxes. The Contract Price includes all other applicable federal, state, and local taxes of every kind and nature applicable to the Work as well as all taxes, contributions, and premiums for unemployment insurance, old age or retirement benefits, pensions, annuities, or other similar benefits. All claim or right to claim additional compensation by reason of the payment of any such tax, contribution, or premium is hereby waived and released by Contractor.

5.3 Payments

A. Payment Methods. The Contract Price shall be paid in accordance with one of the following methods selected by the City, and in the manner set forth, in Attachment A: (1) one lump sum payment paid before Contractor commences any Work ("Prepayment"); (2) in three installments in the manner set forth in Attachment A ("Progress Payments"); or (3) one lump sum payment paid after delivery of the completed Work by Contractor and Final Acceptance, as that term is defined in Section 5.4 B of this Contract, by City ("Payment Upon Completion").

B. Pay Requests.

1. Progress Payments. If City will make Progress Payments to Contractor, Contractor shall, as a condition precedent to its right to receive each Progress Payment, submit to Owner a pay request in the form provided by Owner ("Pay Request"). The first Pay Request shall be submitted not sooner than 30 days following

commencement of the Work. Owner may, by written notice to Contractor, designate a specific day on or before which Pay Requests must be submitted. Each Pay Request shall include (i) Contractor's certification of the value of, and partial or final waivers of lien covering, all Work for which payment is then requested; and (ii) Contractor's certification that all prior Progress Payments have been properly applied to the payment or reimbursement of the costs with respect to which they were paid. After Contractor submits each Pay Request to City, City shall have the right to inspect the Work included in the Pay Request as a condition precedent to making any Progress Payment. The Work included in each Pay Request shall be accepted by City when, and only when, the whole and all parts thereof shall have been completed to the satisfaction of City in full compliance with, and as required by or pursuant to, this Contract. If City is not satisfied that any part of the Work has been completed in compliance with, and as required by or pursuant to, this Contract, City shall notify Contractor of all corrections that must be made by Contractor prior to any Progress Payment. City shall have no obligation to make any Progress Payment unless and until City has accepted all Work included in a Pay Request.

2. Payment Upon Completion. If City will make Payment Upon Completion, Contractor shall, as a condition precedent to its right to receive Payment Upon Completion, submit a Pay Request that includes Contractor's certification of the value of, and partial or final waivers of lien covering, all Work for which payment is requested. City shall make Payment Upon Completion in Accordance with the provisions of Section 5.4 of this Contract.

C. Work Entire. This Contract and the Work are entire and the Work as a whole is of the essence of this Contract. Notwithstanding any other provision of this Contract, each and every part of this Contract and of the Work are interdependent and common to one another and to Owner's obligation to pay all or any part of the Contract Price or any other consideration for the Work. Any and all Progress Payments made pursuant to this Article are provided merely for the convenience of Contractor and for no other purpose.

5.4 Final Acceptance and Final Payment

A. Notice of Completion. When the Work has been completed and is ready in all respects for acceptance by City, Contractor shall notify City and request a final inspection ("Notice of Completion"). Contractor's Notice of Completion shall be given sufficiently in advance of the Completion Date to allow for scheduling of the final inspection and for completion or correction before the Completion Date of any items identified by such inspection as being defective, damaged, flawed, unsuitable, nonconforming, incomplete, or otherwise not in full compliance with, or as required by or pursuant to, this Contract ("Punch List Work").

B. Punch List and Final Acceptance. The Work shall be finally accepted when, and only when, the whole and all parts thereof shall have been

completed to the satisfaction of City in full compliance with, and as required by or pursuant to, this Contract. Upon receipt of Contractor's Notice of Completion, City shall make a review of the Work and notify Contractor in writing of all Punch List Work, if any, to be completed or corrected. Following Contractor's completion or correction of all Punch List Work, City shall make another review of the Work and prepare and deliver to Contractor either a written notice of additional Punch List Work to be completed or corrected or a written notice of final acceptance of the Work ("Final Acceptance").

C. Final Progress Payment or Payment Upon Completion. If City is making Progress Payments or Payment Upon Completion, Contractor shall, as soon as practicable after Final Acceptance, shall submit to City a properly completed final Pay Request in the form provided by City ("Final Pay Request"). City shall pay to Contractor the balance of the Contract Price, after deducting therefrom all charges against Contractor as provided for in this Contract ("Final Payment"). Final Payment shall be made not later than 60 days after City approves the Final Pay Request. The acceptance by Contractor of Final Payment shall operate as a full and complete release of City of and from any and all lawsuits, claims, demands, damages, liabilities, losses, and expenses of, by, or to Contractor for anything done, furnished for, arising out of, relating to, or in connection with the Work or for or on account of any act or neglect of City arising out of, relating to, or in connection with the Work.

5.5 Liens

A. Title. Nothing in this Contract shall be construed as vesting in Contractor any right of property in any equipment, materials, supplies, and other items provided under this Contract after they have been installed in, incorporated into, attached to, or affixed to, the Work. All such equipment, materials, supplies, and other items shall, upon being so installed, incorporated, attached or affixed, become the property of City, but such title shall not release Contractor from its duty to insure and protect the Work in accordance with the requirements of this Contract.

B. Waivers of Lien. Contractor shall, from time to time at City's request and in any event prior to Final Payment, furnish to City such receipts, releases, affidavits, certificates, and other evidence as may be necessary to establish, to the reasonable satisfaction of City, that no lien against the Work or the public funds held by City exists in favor of any person whatsoever for or by reason of any equipment, material, supplies, or other item furnished, labor performed, or other thing done in connection with the Work or this Contract ("Lien") and that no right to file any Lien exists in favor of any person whatsoever.

C. Removal of Liens. If at any time any notice of any Lien is filed, then Contractor shall, promptly and without charge, discharge, remove, or otherwise dispose of such Lien. Until such discharge, removal, or disposition, City shall have the right to retain from any money payable hereunder an amount that City, in its sole judgment,

deems necessary to satisfy such Lien and to pay the costs and expenses, including attorneys' fees and administrative expenses, of any actions brought in connection therewith or by reason thereof.

D. Protection of City Only. This Section shall not operate to relieve Contractor's surety or sureties from any of their obligations under the Bonds, nor shall it be deemed to vest any right, interest, or entitlement in any subcontractor or supplier. City's retention of funds pursuant to this Section shall be deemed solely for the protection of its own interests pending removal of such Liens by Contractor, and City shall have no obligation to apply such funds to such removal but may, nevertheless, do so where City's interests would thereby be served.

5.6 Charges and Deductions

A. City's Right to Withhold. Notwithstanding any other provision of this Contract and without prejudice to any of City's other rights or remedies, City shall have the right at any time or times, whether before or after approval of any Pay Request, to charge Contractor for, recover from Contractor, and deduct, and withhold from any Payment that may be or become due under this Contract, such amount as may reasonably appear necessary to compensate City for any actual or prospective loss due to: (1) Work that is defective, damaged, flawed, unsuitable, nonconforming, or incomplete; (2) damage for which Contractor is liable under this Contract; (3) state or local sales, use, or excise taxes; (4) Liens or claims of Lien regardless of merit; (5) claims of subcontractors, suppliers, or other persons regardless of merit; (6) delay in the progress or completion of the Work; (7) inability of Contractor to complete the Work; (8) failure of Contractor to properly complete or document any Pay Request; (9) any other failure of Contractor to perform any of its obligations under this Contract; (10) the cost to City, including attorneys' fees and administrative costs, of correcting any of the aforesaid matters or exercising any one or more of City's remedies set forth in Section 6.3 of this Contract; or (11) engineering and inspection charges imposed pursuant to this Contract.

B. Use of Recovered and Withheld Funds. City shall be entitled to retain any and all amounts recovered and withheld pursuant to Subsection 5.6A above until Contractor shall have either performed the obligations in question or furnished security for such performance satisfactory to City. City shall be entitled to apply any money recovered or withheld or any other money due Contractor under this Contract to reimburse itself for any and all costs, expenses, losses, damages, liabilities, suits, judgments, awards, attorneys' fees and administrative expenses incurred, suffered, or sustained by City and chargeable to Contractor under this Contract.

ARTICLE VI

DISPUTES AND REMEDIES

6.1 Dispute Resolution Procedure

A. Notice of Disputes and Objections. If Contractor disputes or objects to any requirement, direction, instruction, interpretation, determination, or decision of City, Contractor may notify City in writing of its dispute or objection and of the amount of any equitable adjustment to the Contract Price or Contract Time to which Contractor claims it will be entitled as a result thereof; provided, however, that Contractor shall, nevertheless, proceed without delay to perform the Work as required, directed, instructed, interpreted, determined, or decided by City, without regard to such dispute or objection. Unless Contractor so notifies City within two business days after receipt of such requirement, direction, instruction, interpretation, determination, or decision, Contractor shall be conclusively deemed to have waived all such disputes or objections and all claims based thereon.

B. Negotiation of Disputes and Objections. To avoid and settle without litigation any such dispute or objection, City and Contractor agree to engage in good faith negotiations. Within three business days after City's receipt of Contractor's written notice of dispute or objection, a conference between City and Contractor shall be held to resolve the dispute. Within three business days after the end of the conference, City shall render its final decision, in writing, to Contractor. If Contractor objects to the final decision of City, then it shall, within three business days, give City notice thereof and, in such notice, shall state its final demand for settlement of the dispute. Unless Contractor so notifies City, Contractor shall be conclusively deemed (1) to have agreed to and accepted City's final decision and (2) to have waived all claims based on such final decision.

6.2 Contractor's Remedies

If City fails or refuses to satisfy a final demand made by Contractor pursuant to Section 6.1 of this Contract, or to otherwise resolve the dispute which is the subject of such demand to the satisfaction of Contractor, within ten days following receipt of such demand, then Contractor shall be entitled to pursue such remedies, not inconsistent with the provisions of this Contract, as it may have in law or equity.

6.3 City's Remedies

If it should appear at any time prior to Final Payment that Contractor has failed or refused to prosecute, or has delayed in the prosecution of, the Work with diligence at a rate that assures completion of the Work in full compliance with the requirements of this Contract on or before the Completion Date, or has attempted to assign this Contract or Contractor's rights under this Contract, either in whole or in part, or has falsely made any representation or warranty in this Contract, or has otherwise

failed, refused, or delayed to perform or satisfy any other requirement of this Contract or has failed to pay its debts as they come due ("Event of Default"), and has failed to cure any such Event of Default within five business days after Contractor's receipt of written notice of such Event of Default, then City shall have the right, at its election and without prejudice to any other remedies provided by law or equity, to pursue any one or more of the following remedies:

1. City may require Contractor, within such reasonable time as may be fixed by City, to complete or correct all or any part of the Work that is defective, damaged, flawed, unsuitable, nonconforming, or incomplete;; to accelerate all or any part of the Work; and to take any or all other action necessary to bring Contractor and the Work into strict compliance with this Contract.

2. City may perform or have performed all Work necessary for the accomplishment of the results stated in Paragraph 1 above and withhold or recover from Contractor all the cost and expense, including attorneys' fees and administrative costs, incurred by City in connection therewith.

3. City may accept the defective, damaged, flawed, unsuitable, nonconforming, incomplete, or dilatory Work or part thereof and make an equitable reduction in the Contract Price.

4. City may terminate this Contract without liability for further payment of amounts due or to become due under this Contract.

5. City may, without terminating this Contract, terminate Contractor's rights under this Contract and, for the purpose of completing or correcting the Work, and either complete or correct the Work with its own forces or contracted forces, all at Contractor's expense.

6. Upon any termination of this Contract or of Contractor's rights under this Contract, and at City's option exercised in writing, any or all subcontracts and supplier contracts of Contractor shall be deemed to be assigned to City without any further action being required, but City shall not thereby assume any

obligation for payments due under such subcontracts and supplier contracts for any Work provided or performed prior to such assignment.

7. City may withhold from any Progress Payment or Final Payment, whether or not previously approved, or may recover from Contractor, any and all costs, including attorneys' fees and administrative expenses, incurred by City as the result of any Event of Default or as a result of actions taken by City in response to any Event of Default.

8. City may recover any damages suffered by City.

6.4 City's Special Remedy for Delay

If the Work is not completed by Contractor, in full compliance with, and as required by or pursuant to, this Contract, within the Contract Time as such time may be extended by Change Order, then City may invoke its remedies under Section 6.3 of this Contract or may, in the exercise of its sole and absolute discretion, permit Contractor to complete the Work but charge to Contractor, and deduct from any Progress or Final Payments, whether or not previously approved, administrative expenses and costs for each day completion of the Work is delayed beyond the Completion Date, computed on the basis of the "Per Diem Administrative Charge" set forth in Attachment A, as well as any additional damages caused by such delay.

ARTICLE VII
LEGAL RELATIONSHIPS AND REQUIREMENTS

7.1 Binding Effect

This Contract shall be binding upon City and Contractor and upon their respective heirs, executors, administrators, personal representatives, and permitted successors and assigns. Every reference in this Contract to a party shall also be deemed to be a reference to the authorized officers, employees, agents, and representatives of such party.

7.2 Relationship of the Parties

Contractor shall act as an independent contractor in providing and performing the Work. Nothing in, nor done pursuant to, this Contract shall be construed (1) to create the relationship of principal and agent, partners, or joint venturers between

City and Contractor or (2) except as provided in Paragraph 6.3(6) above, to create any relationship between City and any subcontractor or supplier of Contractor.

7.3 No Collusion/Prohibited Interests

Contractor hereby represents that the only persons, firms, or corporations interested in this Contract as principals are those disclosed to City prior to the execution of this Contract, and that this Contract is made without collusion with any other person, firm, or corporation. If at any time it shall be found that Contractor has, in procuring this Contract, colluded with any other person, firm, or corporation, then Contractor shall be liable to City for all loss or damage that City may suffer thereby, and this Contract shall, at City's option, be null and void.

Contractor hereby represents and warrants that neither Contractor nor any person affiliated with Contractor or that has an economic interest in Contractor or that has or will have an interest in the Work or will participate, in any manner whatsoever, in the Work is acting, directly or indirectly, for or on behalf of any person, group, entity or nation named by the United States Treasury Department as a Specially Designated National and Blocked Person, or for or on behalf of any person, group, entity or nation designated in Presidential Executive Order 13224 as a person who commits, threatens to commit, or supports terrorism, and neither Contractor nor any person affiliated with Contractor or that has an economic interest in Contractor or that has or will have an interest in the Work or will participate, in any manner whatsoever, in the Work is, directly or indirectly, engaged in, or facilitating, the Work on behalf of any such person, group, entity or nation.

7.4 Assignment

Contractor shall not (1) assign this Contract in whole or in part, (2) assign any of Contractor's rights or obligations under this Contract, or (3) assign any payment due or to become due under this Contract without the prior express written approval of City, which approval may be withheld in the sole and unfettered discretion of City; provided, however, that City's prior written approval shall not be required for assignments of accounts, as defined in the Illinois Commercial Code, if to do so would violate Section 9-318 of the Illinois Commercial Code, 810 ILCS 5/9-318. City may assign this Contract, in whole or in part, or any or all of its rights or obligations under this Contract, without the consent of Contractor.

7.5 Confidential Information

All information supplied by City to Contractor for or in connection with this Contract or the Work shall be held confidential by Contractor and shall not, without the prior express written consent of City, be used for any purpose other than performance of the Work.

7.6 No Waiver

No examination, inspection, investigation, test, measurement, review, determination, decision, certificate, or approval by City, nor any order by City for the payment of money, nor any payment for, or use, occupancy, possession, or acceptance of, the whole or any part of the Work by City, nor any extension of time granted by City, nor any delay by City in exercising any right under this Contract, nor any other act or omission of City shall constitute or be deemed to be an acceptance of any defective, damaged, flawed, unsuitable, nonconforming or incomplete Work, equipment, materials, or supplies, nor operate to waive or otherwise diminish the effect of any warranty or representation made by Contractor; or of any requirement or provision of this Contract; or of any remedy, power, or right of City.

7.7 No Third Party Beneficiaries

No claim as a third party beneficiary under this Contract by any person, firm, or corporation other than Contractor shall be made or be valid against City.

7.8 Notices

All notices required or permitted to be given under this Contract shall be in writing and shall be deemed received by the addressee thereof when delivered in person on a business day at the address set forth below or on the third business day after being deposited in any main or branch United States post office, for delivery at the address set forth below by properly addressed, postage prepaid, certified or registered mail, return receipt requested.

Notices and communications to City shall be addressed to, and delivered at, the following address:

City of Des Plaines
1420 Miner Street
Des Plaines, IL 60016

Attention: Fire Chief Alan Wax

Notices and communications to Contractor shall be addressed to, and delivered at, the following address:

[NAME OF SUCCESSFUL BIDDER]
[ADDRESS OF SUCCESSFUL BIDDER]

The foregoing shall not be deemed to preclude the use of other non-oral means of notification or to invalidate any notice properly given by any such other non-oral means.

By notice complying with the requirements of this Section, City and Contractor each shall have the right to change the address or addressee or both for all future notices to it, but no notice of a change of address shall be effective until actually received.

7.9 Governing Laws

This Contract and the rights of City and Contractor under this Contract shall be interpreted according to the internal laws, but not the conflict of laws rules, of the State of Illinois.

7.10 Changes in Laws

Unless otherwise explicitly provided in this Contract, any reference to laws shall include such laws as they may be amended or modified from time to time.

7.11 Compliance with Laws

Contractor shall give all notices, pay all fees, and take all other action that may be necessary to ensure that the Work is provided, performed, and completed in accordance with all required governmental permits, licenses or other approvals and authorizations that may be required in connection with providing, performing, and completing the Work, and with all applicable statutes, ordinances, rules, and regulations, including without limitation the Fair Labor Standards Act; any statutes regarding qualification to do business; any statutes requiring preference to laborers of specified classes; the Illinois Steel Products Procurement Act, 30 ILCS 565/1 et seq.; any statutes prohibiting discrimination because of, or requiring affirmative action based on, race, creed, color, national origin, age, sex, or other prohibited classification, including, without limitation, the Americans with Disabilities Act of 1990, 42 U.S.C. §§ 12101 et seq., the Illinois Human Rights Act, 775 ILCS 5/1-101 et seq., and the Public Works Discrimination Act, 775 ILCS 10/1 et seq.; and any statutes regarding safety or the performance of the Work, including the Illinois Structural Work Act, the Illinois Underground Utility Facilities Damage Prevention Act, and the Occupational Safety and Health Act.

Contractor shall be solely liable for any fines or civil penalties that are imposed by any governmental or quasi-governmental agency or body that may arise, or be alleged to have arisen, out of or in connection with Contractor's, or its subcontractors' or suppliers', performance of, or failure to perform, the Work or any part thereof.

Every provision of law required by law to be inserted into this Contract shall be deemed to be inserted herein.

7.12 Compliance with Patents

A. Assumption of Costs, Royalties, and Fees. Contractor shall pay or cause to be paid all costs, royalties, and fees arising from the use on, or the incorporation into, the Work, of patented equipment, materials, supplies, tools, appliances, devices, processes, or inventions.

B. Effect of Contractor Being Enjoined. Should Contractor be enjoined from furnishing or using any equipment, materials, supplies, tools, appliances, devices, processes, or inventions supplied or required to be supplied or used under this Contract, Contractor shall promptly offer substitute equipment, materials, supplies, tools, appliances, devices, processes, or inventions in lieu thereof, of equal efficiency, quality, suitability, and market value, for review by City. If City should disapprove the offered substitutes and should elect, in lieu of a substitution, to have supplied, and to retain and use, any such equipment, materials, supplies, tools, appliances, devices, processes, or inventions as may by this Contract be required to be supplied, Contractor shall pay such royalties and secure such valid licenses as may be requisite and necessary for City to use such equipment, materials, supplies, tools, appliances, devices, processes, or inventions without being disturbed or in any way interfered with by any proceeding in law or equity on account thereof. Should Contractor neglect or refuse to make any approved substitution promptly, or to pay such royalties and secure such licenses as may be necessary, then City shall have the right to make such substitution, or City may pay such royalties and secure such licenses and charge the cost thereof against any money due Contractor from City or recover the amount thereof from Contractor and its surety or sureties notwithstanding that Final Payment may have been made.

7.13 Time

The Contract Time is of the essence of this Contract. Except where otherwise stated, references in this Contract to days shall be construed to refer to calendar days.

7.14 Severability

The provisions of this Contract shall be interpreted when possible to sustain their legality and enforceability as a whole. In the event any provision of this Contract shall be held invalid, illegal, or unenforceable by a court of competent jurisdiction, in whole or in part, neither the validity of the remaining part of such provision, nor the validity of any other provisions of this Contract shall be in any way affected thereby.

7.15 Entire Agreement

This Contract sets forth the entire agreement of City and Contractor with respect to the accomplishment of the Work and the payment of the Contract Price therefor, and there are no other understandings or agreements, oral or written, between City and Contractor with respect to the Work and the compensation therefor.

7.16 Amendments

No modification, addition, deletion, revision, alteration or other change to this Contract shall be effective unless and until such change is reduced to writing and executed and delivered by City and Contractor.

7.17 Attachments

Attachments A and B attached to this Contract are incorporated into this Contract as if fully set forth herein.

IN WITNESS WHEREOF, City and Contractor have caused this Contract to be executed in five original counterparts as of the day and year first written above.

(SEAL)

Attest/Witness:	CITY OF DES PLAINES
By: _____	By: _____
Title: _____	Title:
Attest/Witness:	***[NAME OF SUCCESSFUL BIDDER]***
By: _____	By: _____ ***[NAME OF CONTRACTOR'S EXECUTING OFFICER]***
Title: _____	Title: ***[TITLE OF CONTRACTOR'S EXECUTING OFFICER]***

STATE OF ILLINOIS)
) SS
COUNTY OF _____)

CONTRACTOR'S CERTIFICATION

[CONTRACTOR'S EXECUTING OFFICER], being first duly sworn on oath, deposes and states that all statements herein made are made on behalf of Contractor, that this deponent is authorized to make them, and that the statements contained herein are true and correct.

Contractor deposes, states, and certifies that Contractor is not barred from contracting with a unit of state or local government as a result of (i) a violation of either Section 33E-3 or Section 33E-4 of Article 33E of the Criminal Code of 1961, 720 ILCS 5/33E-1 et seq.; or (ii) a violation of the USA Patriot Act of 2001, 107 Public Law 56 (October 26, 2001) (the "Patriot Act") or other statutes, orders, rules, and regulations of the United States government and its various executive departments, agencies and offices related to the subject matter of the Patriot Act, including, but not limited to, Executive Order 13224 effective September 24, 2001.

DATED this ____ day of _____, 2016.

Attest/Witness:

By: _____

Title: _____

[NAME OF SUCCESSFUL BIDDER]

By: _____
[NAME OF CONTRACTOR'S EXECUTING OFFICER]

Title: ***[TITLE OF CONTRACTOR'S EXECUTING OFFICER]***

Subscribed and Sworn to
before me this ____ day
of _____, 2016.

My Commission Expires: _____

_____
Notary Public

[SEAL]

ATTACHMENT A

SUPPLEMENTAL SCHEDULE OF CONTRACT TERMS

[Check applicable boxes and insert required information.]

1. **Project**:

Construction and delivery of custom pumper triple combination pumper apparatus that meets the requirements of and is equipped in compliance with the provisions of this Bid Package and the Specifications described in Attachment B to the Contract included in this Bid Package ("Apparatus").

2. **[Reserved]**

3. **Permits, Licenses, Approvals, and Authorizations**:

Contractor shall obtain all required governmental permits, licenses, approvals, and authorizations, except:

☐ **[IDENTIFY PERMITS, LICENSES, AND APPROVALS OBTAINED, OR TO BE OBTAINED, BY CITY, IF ANY]**

_____

_____

_____

_____

☐ No Exceptions

4. **Commencement Date**:

☐ the date of execution of the Contract by City

☐ _____ days following execution of the Contract by City

☐ _____, 20__

5. **Completion Date**:

☐ _____ days following the Commencement Date plus extensions, if any, authorized by a Change Order issued pursuant to Subsection 2.2A of the Contract

☐ _____, 20__, plus extensions, if any, authorized by a Change Order issued pursuant to Subsection 2.2A of the Contract

6. **Insurance Coverages**:

A. Required Coverages. Contractor shall provide insurance coverage in the amounts set forth in Attachment B.

B. City as Additional Insured. City shall be named as an Additional Insured on each policy. The Additional Insured endorsement shall identify City as follows:

> The City of Des Plaines and its boards, commissions, committees, authorities, employees, agencies, officers, voluntary associations, and other units operating under the jurisdiction and within the appointment of its budget.

The coverage afforded the Additional Insureds shall be primary and non-contributory insurance for the Additional Insureds with respect to claims arising out of operations performed by or on behalf of Contractor. If the Additional Insureds have other insurance which is applicable to the loss, such other insurance shall be on an excess or contingent basis. The amount of the insurance companies' liability under the insurance policies Contractor maintains shall not be reduced by the existence of such other insurance.

7. **Contract Price**:

A. Schedule of Prices

The City shall pay Contractor for performance of the Work in accordance with the payment method selected by the City below in the amount of the Contract Price corresponding to the selected payment method.

☐ ALTERNATE 1: PREPAYMENT

Make	Model	Contract Price
		$

☐ ALTERNATE 2: PROGRESS PAYMENTS

Make	Model	Payment No. 1 (After Completion of Chassis)	Payment 2 (Before Paint)	Payment 3 (After Final Acceptance)	Total Contract Price
					$

☐ ALTERNATE 3: PAYMENT UPON COMPLETION

Make	Model	Contract Price
		$

B. Basis for Determining Prices

It is expressly understood and agreed that:

1. The approximate quantities set forth in this Schedule of Prices for each Unit Price Item are The City's estimate only, that The City reserves the right to increase or decrease such quantities, and that payment for each Unit Price Item shall be made only on the actual number of acceptable units of such Unit Price Item installed complete in place, measured on the basis defined in the Contract;

2. The City is not subject to state or local sales, use and excise taxes and no such taxes are included in this Schedule of Prices;

3. All other applicable federal, state, and local taxes of every kind and nature applicable to the Work as well as all taxes, contributions, and premiums for unemployment insurance, old age or retirement

benefits, pensions, annuities, or other similar benefits are included in this Schedule of Prices; and

4. All costs, royalties, and fees arising from the use on, or the incorporation into, the Work of patented equipment, materials, supplies, tools, appliances, devices, processes, or inventions are included in this Schedule of Prices.

All claim to any additional compensation by reason of the payment of any such tax, contribution, or premium or any such cost, royalty or fee is hereby waived and released.

9. **Per Diem Administrative Charge**:

☐ _____ dollars ($_____)

☐ No Charge

10. **Warranties and Service.** Warranties and Service to be provided as set forth in Attachment B.

11. **Exceptions.**

If City has, in its sole and absolute discretion, determined that it will accept any exceptions proposed by Contractor in the Bidder's Proposal, the approved exceptions are listed below.

ATTACHMENT A

SUMMARY OF APPROVED EXCEPTIONS

Page	Section Title	Explanation

[*INSERT ADDITIONAL ROWS AS NECESSARY*]

ATTACHMENT B

SPECIFICATIONS

	Bidder Complies	
	Yes	No

INTENT OF SPECIFICATIONS

It shall be the intent of these specifications to cover the furnishing and delivery of a complete fire apparatus. These detailed specifications cover the requirements as to the type of construction, finish, equipment and tests to which the fire apparatus shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor.

Images and illustrative material in this specification are as accurate as known at the time of publication, but are subject to change without notice. Images and illustrative material is for reference only, and may include optional equipment and accessories and may not include all standard equipment.

GENERAL DESIGN AND CONSTRUCTION

The cab, chassis, pump module, and body are to be entirely designed, assembled and painted by the prime vehicle manufacturer, which minimizes third party involvement on engineering, design, service and warranty issues.

All bidders shall provide a list of the company, manufacturing location, and engineering source for each individual major component, including but not limited to the welded cab assembly, the pumphouse module assembly, the chassis assembly, body and electrical system. Apparatus using any subcontracted cab, chassis, pump module, electrical system or body will not be acceptable.

The apparatus shall be designed with due consideration to distribution of load between the front and rear axles. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association.

The bidder shall make accurate statements as to the apparatus weight and dimensions.

QUALITY AND WORKMANSHIP

All steel welding shall follow American welding Society D1.1-2004 recommendations for structural steel welding. All aluminum welding shall follow American welding Society and ANSI D1.2-2003 requirements for structural welding of aluminum. All sheet metal welding shall follow American Welding Society B2.1-2000 requirements for structural welding of sheet metal. Flux core arc welding to use alloy rods, type 7000, American welding Society standards A5.20-E70T1. Employees classified as welders are tested and certified to meet the American Welding Society codes upon hire and every three (3) years thereafter. The manufacturer shall be required to have an American welding Society certified welding inspector in plant during working hours to monitor weld quality.

The manufacturer shall also be certified to operate a Quality Management System under the requirements of ISO 9001. These standards sponsored by the International organization for Standardization (ISO) specify the quality systems that shall be

	Bidder Complies	
	Yes	No

established by the manufacturer for design, manufacture, installation and service. A copy of the certificate of compliance shall be included with the bid.

To demonstrate the quality of the product and service, each bidder shall provide a list of at least five (5) fire departments/municipalities in the region that have bought a second time from the representing dealer. **An exception to this requirement shall not be acceptable.**

DELIVERY

Apparatus, to insure proper break in of all components while still under warranty, **shall be delivered under its own power** - rail or truck freight shall not be acceptable. A qualified delivery representative shall deliver the apparatus and remain for a sufficient length of time to instruct personnel in proper operation, care and maintenance of the equipment delivered.

MANUALS AND SERVICE INFORMATION

The manufacturer shall supply at time of delivery, complete operation and maintenance manuals covering the complete apparatus as delivered. A permanent plate shall be mounted in the drivers compartment which specifies the quantity and type of fluid required including engine oil, engine coolant, transmission, pump transmission lubrication, pump primer and drive axle.

SAFETY VIDEO

Since video is much more effective than written documentation and can be replayed for new personnel and as a refresher for existing personnel, an apparatus safety video, in DVD format shall be provided at time of delivery. This video shall address key safety considerations for personnel to follow when they are driving, operating, and maintaining the apparatus. Safety procedures for the following shall be included on the video: vehicle pre trip inspection, chassis operation, pump operation and maintenance.

PERFORMANCE TESTS AND REQUIREMENTS

A road test shall be conducted with the apparatus fully loaded and a continuous run of ten (10) miles or more shall be made under all driving conditions, during which time the apparatus shall show no loss of power or overheating. The transmission drive shaft or shafts, and rear axle shall run quietly and be free from abnormal vibration or noise throughout the operating range of the apparatus. Vehicle shall adhere to the following parameters:

A) The apparatus, when fully equipped and loaded, shall have not less than 25 percent nor more than 50 percent of the weight on the front axle, and not less than 50 percent nor more than 75 percent on the rear axle.

	Bidder Complies	
	Yes	No

B) The apparatus shall be capable of accelerating to 35 mph from a standing start within 25 seconds on a level concrete highway without exceeding the maximum governed rpm of the engine.

C) The service brakes shall be capable of stopping a fully loaded vehicle in 35 feet at 20 mph on a level concrete highway. The air brake system shall conform to Federal Motor vehicle Safety Standards (FMVSS) 121.

D) The apparatus, fully loaded, shall be capable of obtaining a speed of 50 mph on a level concrete highway with the engine not exceeding the governed rpm (full load).

FAILURE TO MEET TEST

In the event the apparatus fails to meet the test requirements of these specifications on the first trial, second trials may be made at the option of the bidder within 30 days of the date of the first trial. Such trials shall be final and conclusive and failure to comply with these requirements shall be cause for rejection. failure to comply with changes to conform to any clause of the specifications, within 30 days after notice is given to the bidder of such changes, shall also be cause for rejection of the apparatus. Permission to keep or store the apparatus in any building owned or occupied by the purchaser or its use by the purchaser during the above-specified period with the permission of the bidder shall not constitute acceptance.

SERVICE AND WARRANTY SUPPORT (DEALERSHIP)

TO INSURE FULL SERVICE AFTER DELIVERY, THE SELLING BIDDER/DEALERSHIP MUST BE CAPABLE OF PROVIDING SERVICE WHEN REQUIRED.

The bidder/dealership shall show that the company is in position to render prompt service and to furnish replacement parts.

Each bidder/dealership must be able to display that they are actively in the fire apparatus service business by operating a factory authorized service center and parts repository capable of satisfying the warranty service requirements and parts requirements of the vehicle(s) being purchased.

The bidder/dealership must state the location of this authorized service center. This service center must have a staff of factory-trained mechanics, well versed in all aspects of service for all major components of the apparatus. The service center must be within fifty (50) miles of the Fire Department.

SERVICE AND WARRANTY SUPPORT (MANUFACTURER)

To provide an additional layer of service support, the successful manufacturer must also own a least two separate service facilities, one located in the northern portion of the US to service both Canada and the northern US states and one in the south to service the southern states.

	Bidder Complies	
	Yes	No
The manufacturer shall stock 1 million parts equating to $5,000,000 of inventory dedicated to service and replacement parts to ensure quick response and minimize down time. Furthermore, the manufacturer shall house the inventory in a dedicated facility, with a dedicated shipping area that ensures service parts are given priority. The bidder shall provide detailed documentation of service and replacement part resources. Parts identification shall be provided to both the dealer and the Fire Department through an on line web based application for the specific truck reflected in this specification. Access will be granted using the specific VIN number of the vehicle. The online web application will provide the ability to view complete bills of materials, digital photographs, parts drawings, assembly drawings, and access to all current operation, maintenance and service publications. The manufacturer must also maintain a 24 hour/ 7 day a week, toll free emergency hot line. The manufacturer shall employ a staff of adequate size (a minimum of 30 personnel) specifically dedicated to providing customer support and parts for the fielded fleet of vehicles it has produced. The manufacturer must be capable of providing both in-house and on-site service for the apparatus. The manufacturer shall offer regional factory hands-on repair and maintenance training classes. The manufacturer shall employ a minimum of four certified EVT technicians on staff, not only providing technical expertise in the repair of fire apparatus, but also demonstrating the commitment to service after the sale. **COMMERCIAL GENERAL LIABILITY INSURANCE** The successful bidder shall, during the performance of the contract and for three (3) years following acceptance of the product, keep in force at least the following minimum limits of commercial general liability insurance: Each Occurrence $1,000,000 Products/Completed Operations Aggregate $1,000,000 Personal and Advertising Injury $1,000,000 General Aggregate $5,000,000 Coverage shall be written on a Commercial General Liability form. The policy shall be written on an occurrence form and shall include Contractual Liability coverage for bodily		

	Bidder Complies	
	Yes	No

injury and property damage subject to the terms and conditions of the policy. The policy shall include Owner as an additional insured when required by written contract.

COMMERCIAL AUTOMOBILE LIABILITY INSURANCE

The successful bidder shall, during the performance of the contract keep in force at least the following minimum limits of commercial automobile liability insurance:

Each Accident Combined Single Limit:$1,000,000

Coverage shall be written on a Commercial Automobile liability form.

UMBRELLA/EXCESS LIABILITY INSURANCE

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

Aggregate:$25,000,000

Each Occurrence: $25,000,000

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

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

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

All policies shall provide a 30 day notice of cancellation to the named insured. The Certificate of Insurance shall provide the following cancellation clause: Should any of the above described polices be cancelled before the expiration date thereof, notice shall be delivered in accordance with the policy provisions. Bidder agrees to furnish owner with a current Certificate of Insurance with the coverages listed above along with its bid. The certificate shall show the purchaser as certificate holder.

SINGLE SOURCE MANUFACTURER

Bids shall only be accepted from a single source apparatus manufacturer. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab weldment, cab, pumphouse (including the sheet metal enclosure, valve controls, piping and operators panel) and body being designed, fabricated and assembled on the bidder's premises. The electrical system (hardwire or multiplex) shall be both designed and integrated by the same apparatus manufacturer. The warranties relative to these major components (excluding component warranties such as engine, transmission, axles, pump, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body, pumphouse,

	Bidder Complies	
	Yes	No

cab weldment and chassis). The bidder shall provide evidence that they comply with this requirement.

The bidder shall state the location of the factory where the apparatus is to be built.

NFPA 2009 STANDARDS

This unit shall comply with the NFPA standards effective January 1, 2009, except for fire department specifications that differ from NFPA specifications. These exceptions shall be set forth in the Statement of Exceptions.

A plate that is highly visible to the driver while seated shall be provided. This plate shall show the overall height, length, and gross vehicle weight rating.

Certification of slip resistance of all stepping, standing and walking surfaces shall be supplied with delivery of the apparatus.

The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications.

An official of the company shall designate, in writing, who is qualified to witness and certify test results.

NFPA COMPLIANCY

Apparatus proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current edition at time of contract execution. Fire department's specifications that differ from NFPA specifications shall be indicated in the proposal as "non-NFPA".

VEHICLE INSPECTION PROGRAM CERTIFICATION

To assure the vehicle is built to current NFPA standards, the apparatus, in its entirety, shall be third-party, independent, audit-certified through Underwriters Laboratory (UL) that it is built and complies to all applicable standards in the current edition of NFPA 1901. The certification includes: all design, production, operational, and performance testing of not only the apparatus, but those components that are installed on the apparatus (no exception).

A placard shall be affixed in the driver's side area stating the third party agency, the date, the standard and the certificate number of the whole vehicle audit.

	Bidder Complies	
	Yes	No

PUMP TEST

The pump shall be tested, approved, and certified by Underwriter's Laboratory at the manufacturer's expense. The test results and the pump manufacturer's certification of hydrostatic test; the engine manufacturer's certified brake horsepower curve; and the manufacturer's record of pump construction details shall be forwarded to the Fire Department.

GENERATOR TEST

If the unit has a generator, the generator shall be tested, approved, and certified by Underwriters Laboratories at the manufacturer's expense. The test results shall be provided to the Fire Department at the time of delivery.

BREATHING AIR TEST

If the unit has breathing air, the apparatus manufacturer shall draw an air sample from the air system and certify that the air quality meets the requirements of NFPA 1989, *Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection.*

INSPECTION TRIP(S)

The bidder shall provide two (2) factory inspection trip(s) for five customer representative(s). The inspection trip(s) shall be scheduled at times mutually agreed upon between the manufacturer's representative and the customer. All costs such as travel, lodging and meals shall be the responsibility of the bidder.

SERVICE CENTERS

The bidder shall list their address and location of the factory authorized service centers showing evidence of being able to render quick and reliable service.

AFTERMARKET SUPPORT WEBSITE

A Customer Service website shall provide authorized dealers access to comprehensive information pertaining to the maintenance and service of their customer's apparatus. This tool shall provide the authorized dealer the ability to service and support their customers to the best of their ability with factory support at their fingertips.

This website shall also be accessible to the end user through the guest login. Limited access is available and vehicle specific parts information accessible by entering a specific VIN number. All end users should see their local authorized dealer for additional support and service.

The website shall provide the following to the designated individuals:

- Authorized dealer only - ability to access truck detail information on the major components of the vehicle, warranty information, available vehicle photographs, vehicle drawings, sales options, applicable vehicle software downloads, etc.

	Bidder Complies	
	Yes	No

- Authorized dealer and customer - parts look-up capability, with the aid of digital photographs, part drawings, and assembly drawings.

- Authorized dealer only - ability to electronically submit warranty claims directly to the factory for reimbursement.

- Authorized dealer only - accessibility to multiple dealer reports that allow the dealership to maintain communication with the customer on the status of orders, claims, and phone contacts.

- Authorized dealer and customer - access to all currently published Operation and Maintenance and Service publications.

- Authorized dealer only - access to manufacturer Service Bulletins and Work Instructions containing information on current service topics and recommendations provided.

- Authorized dealer and customer - access to upcoming training classes offered by the manufacturer.

- Authorized dealer only - access to interactive electronic learning modules (Operators Guides) covering the operation of major vehicle components.

- Authorized dealer only - access to customer service articles, corporate news, quarterly newsletters, and key contacts.

APPROVAL DRAWING

A drawing of the proposed apparatus shall be provided for approval before construction begins. The sales representative shall also have a copy of the same drawing. The finalized and approved drawing shall become part of the contract documents. This drawing shall indicate the chassis make and model, location of the lights, siren, horns, compartments, major components, etc.

A "revised" approval drawing of the apparatus shall be prepared and submitted by the manufacturer to the purchaser showing any changes made to the approval drawing.

DRAWING, PRELIMINARY LAYOUT, PUMP OPERATOR'S PANEL

A detailed drawing, to scale, of the pump operator's panel shall be provided for the purpose of illustrating the drawing of configuration that was done previously. However, some variation may be necessary due to changes in our manufacturing processes or our product offerings. Revisions to NFPA guidelines and/or regulations may also affect our ability to match the previous unit.

The pump panel drawing provided shall match the old configuration of Pierce job #22543 as closely as possible.

	Bidder Complies	
	Yes	No
DRAWING, PASSENGER SIDE PUMP PANEL A detailed drawing to scale of the passenger side pump panel shall be provided for approval prior to construction. This drawing shall include all of the gauges and controls located on the passenger side pump panel. **ELECTRICAL WIRING DIAGRAMS** There shall be three (3) compact discs containing "As-Built" electrical wiring diagrams specifically prepared for the apparatus provided. The diagrams shall consist of information pertaining to the 12 volt DC systems only. Due to the complexity of each custom unit built and possible changes that may occur, the design of the "As Built" electrical wiring diagrams shall begin after the apparatus is shipped from the manufacturer's facility. The CD's shall be shipped to the customer no more that 75 days after the apparatus is shipped from the manufacturer's facility. There shall be two (2) CD's shipped to the customer and one (1) CD stored at the apparatus manufacturer's facility for future reference. Each CD shall include the following capabilities: The capability of viewing each separate diagram. The capability of zooming in on any section of each separate diagram. The capability of printing each separate diagram. The capability of printing each zoomed in area of each separate diagram. Each CD shall include the following items: Title page, identifying the job number and chassis model. Table of contents. Truck specific electrical compartment and instrument layouts for the chassis. Truck specific electrical compartment layouts for the body. Applicable drawings from the appropriate standard wiring diagrams. All truck specific wiring diagrams (special drawings). Harness drawings for all wiring harnesses used on the chassis. Harness drawings for all wiring harnesses used on the body. All truck input and output programming sheets (multiplexed trucks only). There shall be two (2) hard copies of these diagrams required for this unit.		

	Bidder Complies	
	Yes	No

The spiral bound, clear plastic covered hard copies shall included everything from the CD's printed on 11" x 17" white paper.

CHASSIS

Chassis provided shall be a new, tilt-type custom fire apparatus. The chassis shall be manufactured in the apparatus body builder's facility eliminating any split responsibility. The chassis shall be designed and manufactured for heavy-duty service, with adequate strength, capacity for the intended load to be sustained, and the type of service required. The chassis shall be the manufacturer's heavy-duty line tilt cab.

WHEELBASE

The wheelbase of the vehicle shall be no greater than 181.50".

GVW RATING

The gross vehicle weight rating shall be a minimum of 46,800 pounds.

FRAME

The chassis frame shall be built with two (2) steel channels bolted to five (5) cross members or more, depending on other options of the apparatus.

The side rails shall have a 13.38" tall web over the front and mid sections of the chassis, with a continuous smooth taper to 10.75" over the rear axle.

Each rail shall have a section modulus of 25.992 cubic inches and a resisting bending moment (rbm) of 3,119,040 in-lb over the critical regions of the frame assembly, with a section modulus of 18.96 cubic inches with an rbm of 2,275,200 in-lb over the rear axle.

The frame rails shall be constructed of 120,000 psi yield strength heat-treated 0.38" thick steel with 3.50" wide flanges.

FRAME REINFORCEMENT

In addition, a mainframe inverted "L" liner shall be provided. It shall be heat-treated steel measuring 12.00" x 3.00" x 0.25". Each liner shall have a section modulus of 7.795 cubic inches, yield strength of 110,000 psi, and rbm of 857,462 in-lb. Total rbm at wheelbase center shall be 3,976,502 lb in-lb.

The frame liner shall be mounted inside of the chassis frame rail, beginning at the front edge of the mainframe rail and extending to the rear cab cross member.

FRONT NON DRIVE AXLE

The front axle shall be of the independent suspension design with a ground rating of 22,800 lb.

Upper and lower control arms shall be used on each side of the axle. Upper control arm castings shall be made of 100,000 psi yield strength 8630 steel and the lower control arm casting shall be made of 55,000 psi yield ductile iron.

	Bidder Complies	
	Yes	No
The center cross members and side plates shall be constructed out of 80,000 psi yield strength steel. Each control arm shall be mounted to the center section using elastomer bushings. These rubber bushings shall rotate on low friction plain bearings and be lubricated for life. Each bushing shall also have a flange end to absorb longitudinal impact loads, reducing noise and vibrations. There shall be nine (9) grease fittings supplied, one (1) on each control arm pivot and one (1) on the steering gear extension. The upper control arm shall be shorter than the lower arm so that wheel end geometry provides positive camber when deflected below rated load and negative camber above rated load. Camber at load shall be 0 degrees for optimum tire life. The ball joint bearing shall be of low friction design and be maintenance free. Toe links that are adjustable for alignment of the wheel to the center of the chassis shall be provided. The wheel ends must have little to no bump steer when the chassis encounters a hole or obstacle. The steering linkage shall provide proper steering angles for the inside and outside wheel, based on the vehicle wheelbase. The axle shall have a third party certified turning angle of 45 degrees. Front discharge, front suction, or aluminum wheels shall not infringe on this cramp angle. **FRONT SUSPENSION** Front independent suspension shall be provided with a minimum ground rating of 22,800 lb. The independent suspension system shall be designed to provide maximum ride comfort. The design shall allow the vehicle to travel at highway speeds over improved road surfaces and at moderate speeds over rough terrain with minimal transfer of road shock and vibration to the vehicle's crew compartment. Each wheel shall have torsion bar type spring. In addition, each front wheel end shall also have energy absorbing jounce bumpers to prevent bottoming of the suspension. The suspension design shall be such that there is at least 10.00" of total wheel travel and a minimum of 3.75" before suspension bottoms.		

	Bidder Complies	
	Yes	No
The torsion bar anchor lock system allows for simple lean adjustments, without the use of shims. One can adjust for a lean within 15 minutes per side. Anchor adjustment design is such that it allows for ride height adjustment on each side. The independent suspension shall be put through a durability test that has simulated a minimum of 140,000 miles of inner city driving. **FRONT SHOCK ABSORBERS** KONI heavy-duty telescoping shock absorbers shall be provided on the front suspension. **FRONT OIL SEALS** Oil seals with viewing window shall be provided on the front axle. **FRONT TIRES** Front tires shall be Michelin 425/65R22.50 radials, 20 ply all-position XZY3 wide base tread, rated for 22,800 lb maximum axle load and 65 mph maximum speed. The tires shall be mounted on Alcoa 22.50" x 12.25" polished aluminum disc type wheels with a ten (10)stud, 11.25" bolt circle. **REAR AXLE** The rear axle shall be Meritor™, Model RS-24-160, with a capacity of 24,000 lb. **TOP SPEED OF VEHICLE** A rear axle ratio shall be furnished to allow the vehicle to reach a top speed of 60 mph. **REAR SUSPENSION** The rear springs shall be Standens semi-elliptical, 3.00" x 52.00", ten (10) leaves with a ground rating of 24,000 lb. Spring hangers shall be castings with provisions for lubrication. The grease fittings shall be 90 degree type and shall be accessible without removing the wheels or cutting any sheet metal. Two (2) top leaves shall wrap the forward spring hanger pin and the top leaf shall wrap the rear spring hanger pin on both the front and rear suspensions. Kaiser spring pins shall be provided, with double "figure-eight" grease grooves and a layer of electroless nickel plating, 1.0 mil thick, around the entire pin. The bushing that holds the spring pin in place shall also have a grease groove. **REAR OIL SEALS** Oil seals shall be provided on the rear axle.		

	Bidder Complies	
	Yes	No

REAR TIRES
Rear tires shall be four (4) Michelin 11R22.50 radials, 16 ply all season XDN2 tread, rated for 24,020 lb maximum axle load and 75 mph maximum speed.

The tires shall be mounted on Alcoa 22.50" x 8.25" polished aluminum disc wheels with a ten (10) stud 11.25" bolt circle.

TIRE BALANCE
All tires shall be balanced with Counteract balancing beads. The beads shall be inserted into the tire and eliminate the need for wheel weights.

TIRE PRESSURE MANAGEMENT
There shall be a RealWheels LED AirSecure™ tire alert pressure management system provided, that shall monitor each tire's pressure. A sensor shall be provided on the valve stem of each tire for a total of six (6) tires.

The sensor shall calibrate to the tire pressure when installed on the valve stem for pressures between 10 and 200 psi. The sensor shall activate an integral battery operated LED when the pressure of that tire drops 5 to 8 psi.

Removing the cap from the sensor shall indicate the functionality of the sensor and battery. If the sensor and battery are in working condition, the LED shall immediately start to flash.

FRONT HUB COVERS
Stainless steel hub covers shall be provided on the front axle. An oil level viewing window shall be provided.

REAR HUB COVERS
A pair of stainless steel high hat hub covers shall be provided on rear axle hubs.

CHROME LUG NUT COVERS
Chrome lug nut covers shall be supplied on front and rear wheels.

MUD FLAPS
Mud flaps shall be installed behind the front and rear wheels of the apparatus.

WHEEL CHOCKS
There shall be one (1) pair of folding Ziamatic, Model SAC-44-E, aluminum alloy, Quick-Choc wheel blocks with easy-grip handle provided.

WHEEL CHOCK BRACKETS
There shall be one (1) pair of Zico, Model SQCH-44-H, horizontal mounting wheel chock brackets provided for the Ziamatic, Model SAC-44-E, folding wheel chocks. The brackets shall be made of aluminum and consist of a quick release spring loaded rod to

	Bidder Complies	
	Yes	No

hold the wheel chocks in place. The brackets shall be mounted below the left side rear compartment and rearward of the left side rear tire.

ANTI-LOCK BRAKE SYSTEM

The vehicle shall be equipped with a Wabco 4S4M, anti-lock braking system. The ABS shall provide a four (4) channel anti-lock braking control on both the front and rear wheels. A digitally controlled system that utilizes microprocessor technology shall control the anti-lock braking system. Each wheel shall be monitored by the system. When any particular wheel begins to lockup, a signal is shall be sent to the control unit. This control unit then shall reduce the braking of that wheel for a fraction of a second and then reapply the brake. This anti-lock brake system shall eliminate the lockup of any wheel thus helping to prevent the apparatus from skidding out of control.

AUTOMATIC TRACTION CONTROL

An anti-slip feature shall be included with the ABS. The Automatic Traction Control shall be used for traction in poor road and weather conditions. The Automatic Traction Control shall act as an electronic differential lock that shall not allow a driving wheel to spin, thereby supplying traction at all times. The ABS electronic control unit (ECU) shall work with the engine ECU, sharing information concerning wheel slip. Engine ECU shall use information to control engine speed, allowing only as much throttle application as required for the available traction, regardless of how much the driver is asking for. A "mud/snow" switch shall be provided on the instrument panel. Activation of the switch shall allow additional tire slip to let the truck climb out and get on top of deep snow or mud.

BRAKES

The service brake system shall be full air type.

The front brakes shall be Knorr/Bendix disc type with a 17.00" ventilated rotor for improved stopping distance.

The brake system shall be certified, third party inspected, for improved stopping distance.

The rear brakes shall be Meritor™, Disc Plus, Model EX225, disc operated with automatic slack adjusters and a 17.00" ventilated rotor for improved stopping distance.

AIR COMPRESSOR, BRAKE SYSTEM

The air compressor shall be a Bendix®, Model BA-921, with 15.80 cubic feet per minute output at 1,250 rpm.

BRAKE SYSTEM

The brake system shall include:

- Bendix® dual brake treadle valve with vinyl covered foot surface

	Bidder Complies	
	Yes	No

- Heated automatic moisture ejector on air dryer
- Total air system capacity of 4,362 cubic inches
- Two (2) air pressure gauges with a red warning light and an audible alarm, that activates when air pressure falls below 60 psi
- Spring set parking brake system
- Parking brake operated by a push-pull style control valve
- A parking "brake on" indicator light on instrument panel
- Park brake relay/inversion and anti-compounding valve, in conjunction with a double check valve system, with an automatic spring brake application at 40 psi
- A pressure protection valve to prevent all air operated accessories from drawing air from the air system when the system pressure drops below 80 psi (550 kPa)

The air tank shall be primed and painted to meet a minimum 750 hour salt spray test.

To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).

BRAKE SYSTEM AIR DRYER

The air dryer shall be WABCO System Saver 1200 with spin-on coalescing filter cartridge and 100 watt heater.

BRAKE LINES

Color-coded nylon brake lines shall be provided. The lines shall be wrapped in a heat protective loom in the chassis areas that are subject to excessive heat.

High pressure, wire braid reinforced air lines shall be provided from the frame to each brake chamber.

The brake lines shall not be painted.

AIR INLET

One (1) air inlet with male coupling shall be provided. It shall allow station air to be supplied to the apparatus brake system through a shoreline hose. The inlet shall be located in the driver side lower step well of cab. A check valve shall be provided to prevent reverse flow of air. The inlet shall discharge into the "wet" tank of the brake system. A mating female coupling shall also be provided with the loose equipment.

ADDITIONAL AIR TANK

An additional air tank with 1,454 cubic inch displacement shall be provided to increase the capacity of the air system. This tank shall be dedicated for air horn use.

The air tank shall be primed and painted to meet a minimum 750 hour salt spray test. To reduce the effects of corrosion, the air tank shall be mounted with stainless steel brackets (no exception).

	Bidder Complies	
	Yes	No

The output flow of the engine air compressor varies with engine rpm. Full compressor output is only achieved at governed engine speed. Engine speed may be limited by generators, pumps and other PTO driven options.

U-BOLT GUARD OVER PARKING BRAKE KNOB

There shall be one (1) U-bolt type protective guard(s) installed over the "Parking Brake" knob to prevent accidental activation of the brake. The guard shall be located on the passenger's side.

ISOLATED BRAKE RELEASE

An additional air tank with 1454 cubic inch displacement shall be provided for an isolated emergency brake release. The control shall be located inside the cab within easy reach of the driver.

AUTOMATIC MOISTURE EJECTOR(S)

Four (4) automatic moisture ejectors, Bendix®, Model DV-2, shall be installed in the brake system.

Each moisture ejector shall be equipped with a 12-volt heater, controlled by thermostat and ignition switch.

The moisture ejector(s) shall be provided on the wet tank reservoirs(s).

PARK BRAKE CONTROL (ADDITIONAL)

A second park brake control valve shall be installed on the officer side of the instrument panel. This valve shall only activate the brakes if manually pulled out; low air pressure shall not activate this valve.

ENGINE

The chassis shall be powered by an electronically controlled engine as described below:

Make:	Detroit™
Model:	DD13®
Power:	450 hp at 1800 rpm
Torque:	1550 lb-ft at 1200 rpm
Governed Speed:	2080 rpm
Emissions Level:	EPA 2013
Fuel:	Diesel
Cylinders:	Six (6)
Displacement:	781 cubic inches (12.8L)
Starter:	Delco Remy 39MT™

		Bidder Complies	
		Yes	No
Fuel Filters:	Dual cartridge style with check valve, water separator, and water in fuel sensor		
Coolant Filter:	Cartridge style with shut off valves on the supply and return line		

The engine shall include On-board diagnostics (OBD), which provides self diagnostic and reporting. The system shall give the owner or repair technician access to state of health information for various vehicle sub systems. The system shall monitor vehicle systems, engine and after treatment. The system shall illuminate a malfunction indicator light on the dash console if a problem is detected.

HIGH IDLE

A high idle switch shall be provided, inside the cab, on the instrument panel, that shall automatically maintain a preset engine rpm. A switch shall be installed, at the cab instrument panel, for activation/deactivation.

The high idle shall be operational only when the parking brake is on and the truck transmission is in neutral. A green indicator light shall be provided, adjacent to the switch. The light shall illuminate when the above conditions are met. The light shall be labeled "OK to Engage High Idle."

ENGINE BRAKE

A Jacobs® engine brake is to be installed with the controls located on the instrument panel within easy reach of the driver.

The driver shall be able to turn the engine brake system on/off and have a high, medium and low setting.

The engine brake shall be installed in such a manner that when the engine brake is slowing the vehicle the brake lights are activated.

The ABS system shall automatically disengage the auxiliary braking device when required.

CLUTCH FAN

A Horton® fan clutch shall be provided. The fan clutch shall be automatic when the pump transmission is in "Road" position, and fully engaged in "Pump" position.

ENGINE AIR INTAKE

The air intake with an ember separator shall be mounted high on the passenger side of the cab, to the front of the crew cab door. The ember separator is designed to prevent road dirt and recirculating hot air from entering the engine.

	Bidder Complies	
	Yes	No

The ember separator shall be easily accessible through a hinged stainless steel grille, with one (1) flush quarter turn latch.

EXHAUST SYSTEM

The exhaust system shall include a diesel particulate filter (DPF) and a selective catalytic reduction (SCR) device to meet current EPA standards. The exhaust system shall be stainless steel from the turbo to the inlet of the SCR device and shall be 5.00" in diameter. An insulation wrap shall be provided on all exhaust pipes between the turbo and SCR to minimize the transfer of heat to the cab. The exhaust shall terminate horizontally ahead of the passenger side rear wheels. A tailpipe diffuser shall be provided to reduce the temperature of the exhaust as it exits. Heat deflector shields shall be provided to isolate chassis and body components from the heat of the tailpipe diffuser.

EXHAUST MODIFICATION

The exhaust pipe shall be brought out from under the body at a 90 degree angle from the truck. The tail pipe shall extend a minimum of 2.00" past the body, adaptable for the Plymovent system. The diameter of the pipe shall be 7.00". There shall be a clearance of 4.00" completely around the pipe once past the side of the body. A stop shall be provided on the tail pipe that shall prevent the nozzle from sliding too far on.

RADIATOR

The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.

For maximum cooling performance, the radiator core shall be made of copper fins having a serpentine design, soldered to brass tubes.

The tubes shall be welded to brass headers using the patented Beta-Weld process for increased strength, longer road life and solder-bloom corrosion protection. The radiator core shall have a minimum frontal area of 1,396 square inches. Steel supply and return tanks shall be bolted to the core headers and steel side channels to complete the radiator assembly. The radiator shall be compatible with commercial antifreeze solutions.

The radiator shall be mounted in such a manner as to prevent the development of leaks caused by twisting or straining when the apparatus operates over uneven ground. The radiator assembly shall be isolated from the chassis frame rails with rubber isolators.

The radiator shall include an integral de-aeration tank, with a remote-mounted overflow tank. For visual coolant level inspection, the radiator shall have a built-in sight glass. The radiator shall be equipped with a 15 psi pressure relief cap.

A drain port shall be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.

	Bidder Complies	
	Yes	No
A heavy-duty fan shall draw in fresh, cool air through the radiator. Shields or baffles shall be provided to prevent recirculation of hot air to the inlet side of the radiator.		
COOLANT LINES Gates® silicone hoses shall be used for all engine/heater coolant lines installed by the chassis manufacturer.		
The chassis manufacturer shall also use Gates brand hose on other heater, defroster and auxiliary coolant circuits. There shall be some areas in which an appropriate Gates product is not available. In those instances a comparable silicone hose from another manufacturer shall be used.		
Hose clamps shall be stainless steel constant torque type to prevent coolant leakage. They shall react to temperature changes in the cooling system and expand or contract accordingly while maintaining a constant clamping pressure on the hose.		
FUEL TANK A 75 gallon fuel tank shall be provided and mounted at rear of chassis. The tank shall be constructed of 12-gauge, hot rolled steel. It shall be equipped with swash partitions and a vent. To eliminate the effects of corrosion, the fuel tank shall be mounted with stainless steel straps. (no exception).		
A .75" drain plug shall be provided in a low point of the tank for drainage.		
A fill inlet shall be located on the left hand side of the body and be covered with a hinged, spring loaded, stainless steel door that is marked "Ultra Low Sulfur - Diesel Fuel Only."		
A .50" diameter vent shall be provided running from top of tank to just below fuel fill inlet.		
The tank shall meet all FHWA 393.67 requirements including a fill capacity of 95 percent of tank volume.		
All fuel lines shall be provided as recommended by the engine manufacturer.		
DIESEL EXHAUST FLUID TANK A 4.5 gallon diesel exhaust fluid (DEF) tank shall be provided and mounted in the driver's side body rearward of the rear axle.		
A 0.50" drain plug shall be provided in a low point of the tank for drainage.		
A fill inlet shall be provided and marked "Diesel Exhaust Fluid Only". The fill inlet shall be located adjacent to the engine fuel inlet behind a common hinged, spring loaded, polished stainless steel door on the driver side of the vehicle.		

	Bidder Complies	
	Yes	No

The tank shall meet the engine manufacturers requirement for 10 percent expansion space in the event of tank freezing.

The tank shall include an integrated heater unit that utilizes engine coolant to thaw the DEF in the event of freezing.

The stainless steel flip door for selecting between DEF fill and the diesel fill shall be spring loaded to default to covering the DEF fill.

AUXILIARY FUEL PUMP

An auxiliary electric fuel pump shall be added to the fuel line for priming the engine. A switch located on the cab instrument panel shall be provided to operate the pump.

FUEL SHUTOFF

A shutoff valve shall be installed in the fuel line, at the fuel tank.

FUEL COOLER

An air to fuel cooler shall be installed in the engine fuel return line.

FUEL HEATER

An inline fuel heater shall be provided. Fuel shall be heated by routing the engine coolant through the fuel heater.

TRANSMISSION

An Allison 5th generation, Model EVS 4000P, electronic, torque converting, automatic transmission shall be provided.

The transmission shall be equipped with prognostics to monitor oil life, filter life, and transmission health. A wrench icon on the shift selector's digital display shall indicate when service is due.

Two (2) PTO openings shall be located on left side and top of converter housing (positions 8 o'clock and 1 o'clock).

A transmission temperature gauge with red light and buzzer shall be installed on the cab instrument panel.

TRANSMISSION SHIFTER

A six (6)-speed push button shift module shall be mounted to right of driver on console. Shift position indicator shall be indirectly lit for after dark operation.

The transmission ratio shall be:

1st	3.51 to 1.00

	Bidder Complies	
	Yes	No

2nd	1.91 to 1.00
3rd	1.43 to 1.00
4th	1.00 to 1.00
5th	0.75 to 1.00
6th	0.64 to 1.00
R	4.80 to 1.00

TRANSMISSION COOLER

A transmission oil cooler shall be provided that is integral to the radiator and located at the bottom of the radiator. The cooler shall use engine coolant to control the transmission oil temperature.

TRANSMISSION FLUID

The transmission shall be provided with TranSynd, or other Allison approved TES-295 heavy duty synthetic transmission fluid.

DRIVELINE

Drivelines shall be a heavy-duty metal tube and be equipped with Spicer® 1810 universal joints.

The shafts shall be dynamically balanced before installation.

A splined slip joint shall be provided in each driveshaft. The slip joint shall be coated with Glidecoat® or equivalent.

STEERING

Dual Sheppard, Model M110, steering gears, with integral heavy-duty power steering, shall be provided. For reduced system temperatures, the power steering shall incorporate an air to oil cooler and an Eaton, Model VN20, hydraulic pump with integral pressure and flow control. All power steering lines shall have wire braded lines with crimped fittings.

	Bidder Complies	
	Yes	No
A tilt and telescopic steering column shall be provided to improve fit for a broader range of driver configurations. **STEERING WHEEL** The steering wheel shall be 18.00" in diameter, have tilting and telescoping capabilities, and a 4-spoke design. **LOGO AND CUSTOMER DESIGNATION ON DASH** The dash panel shall have an emblem containing the fire apparatus manufacturer's logo and customer name. The emblem shall have three (3) rows of text for the customer's department name. There shall be a maximum of eight (8) characters in the first row, 11 characters in the second row and 11 characters in the third row. The first row of text shall be: Des Plaines The second row of text shall be: Fire The third row of text shall be: Department **STEERING GEAR SYNTHETIC OIL** Synthetic oil shall be provided for the steering gear. **AUTOMATIC CHASSIS LUBRICATION** A Vogel Automatic Lubrication System shall be provided. The lubrication shall be supplied while the vehicle ignition switch is active to allow a uniform application of grease to the locations listed. The electronic control unit that forms part of the system shall activate the pump after an adjustable interval time. The unit shall control and monitor pump operation and report any faults via an indicator light on the driver's dashboard of the cab. The lubrication system reservoir, which requires a 15.00" wide x 14.50" high x 6.25" deep mounting area, shall be located behind a hinged door on the passenger side pump panel on the apparatus. - Independent suspension control Arm Pivot Points - Rear Axle Slack Adjusters - Rear Axle Brake Cam Screws - Rear Suspension Spring Pins - Rear Suspension Shackle Pins - Walking Beam Pins Tandem axle, if applicable		

	Bidder Complies	
	Yes	No
BUMPER A one (1) piece, ten (10) gauge, 304-2B type polished stainless steel bumper, a minimum of 10.00" high, shall be attached to a bolted modular extension frame constructed of 50,000 psi tensile steel "C" channel mounted directly behind it to provide adequate support strength. The bumper shall be extended 26.00" from front face of cab. Documentation shall be provided, upon request to show that the options selected have been engineered for fit-up and approval for this modular bumper extension. A chart shall be provided to indicate the option locations and shall include but not be limited to the following options: air horns, mechanical sirens, speakers, hose trays (with hose capacities), winches, lights, discharge, and suction connections. **GRAVEL PAN** A gravel pan, constructed of bright aluminum treadplate, shall be furnished between the bumper and cab face. The gravel pan shall be properly supported from the underside to prevent flexing and vibration of the aluminum treadplate. **HOSE TRAY** A hose tray, constructed of aluminum, shall be placed in the center of the bumper extension. The tray shall have a capacity of 175' of 1.75" double jacket cotton-polyester hose. Black rubber grating shall be provided at the bottom of the tray. Drain holes are also provided. **LIFT AND TOW MOUNTS** Mounted to the frame extension shall be lift and tow mounts. The lift and tow mounts shall be designed and positioned to adapt to certain tow truck lift systems. The lift and tow mounts with eyes shall be painted the same color as the frame. **TOW HOOKS** No tow hooks are to be provided. This truck shall be equipped with a lift and tow package with integral tow eyes. **HINGED CENTER SECTION** The center section of the bumper shall be hinged at the bottom. Two (2) pawl latches shall hold the section in the closed position. **DROP DOWN BUMPER SECTION WITH COVER** A center section of the front bumper shall be hinged to drop down, providing access to the hose tray.		

	Bidder Complies	
	Yes	No
A bright aluminum treadplate cover shall be provided. The cover shall tuck under the top flange of the drop down section of the bumper and shall be secured by the drop down section of the bumper. Two (2) flush lift and turn latches shall be provided in the drop down section of the bumper. **CAB** The cab shall be designed specifically for the fire service and shall be manufactured by the chassis builder. The cab shall be built by the apparatus manufacturer in a facility located on the manufacturer's premises (no exception). For reasons of structural integrity and enhanced occupant protection, the cab shall be of heavy duty design, constructed to the following minimal standards. The cab shall have 12 main vertical structural members located in the A-pillar (front cab corner posts), B-pillar (side center posts), C-pillar (rear corner posts) and rear wall areas. The A-pillar shall be constructed of solid A356-T5 aluminum. The B-pillar and C-pillar shall be constructed from 0.25" heavy wall extrusions. The rear wall shall be constructed of two (2) 4.00" x 2.00" outer aluminum extrusions and two (2) 3.00" x 2.00" inner aluminum extrusions. All main vertical structural members shall run from the floor to 6.50" x 4.875" x 0.1875" thick roof extrusions to provide a cage-like structure with the A-pillar and roof extrusions being welded into a 0.36" thick corner casting at each of the front corners of the roof assembly. The front of the cab shall be constructed of a 0.25" thick gusset plate, covered with a 0.090" front skin (for a total thickness of 0.34"), and reinforced with a 95.00" wide x 11.13" deep x 0.50" thick cross-cab support located just below the windshield. The cross-cab support shall run the full width of the cab and weld to each A-pillar, the 0.25" thick gusset plate and the front skin. The cab floors shall be constructed of 0.1875" thick aluminum plate and reinforced at the firewall with an additional 0.50" thick cross-floor support providing a total thickness of 0.6875" of structural material at the front floor area. The front floor area shall also be supported with one (1) 0.50" plate bolted to one (1) 0.78" plate that also provides the mounting point for the cab lift. This tubing shall run from the front of the cab to the 0.187" thick engine tunnel, creating the structure to support the forces created when lifting the cab. The cab shall be 94.75" wide (outside door skin to outside door skin) to maintain maximum maneuverability (no exception).		

	Bidder Complies	
	Yes	No
The forward cab section shall have an overall height (from the cab roof to the ground) of approximately 103.00". The crew cab section shall have a 16.00" raised roof, with an overall cab height of approximately 119.00". The overall height listed shall be calculated based on a truck configuration with the lowest suspension weight ratings, the smallest diameter tires for the suspension, no water weight, no loose equipment weight, and no personnel weight. Larger tires, wheels, and suspension shall increase the overall height listed.		
The floor to ceiling height inside the crew cab shall be 70.00" in the center and 75.25" in the outboard positions.		
The crew cab floor shall measure 40.12" from rear wall to the back side of engine tunnel.		
The engine tunnel, at the rearward highest point (knee level), shall measure 47.75" to the back wall.		
The crew cab shall be of the totally enclosed design with access doors constructed in the same manner as the driver and passenger doors.		
The cab shall be a full tilt cab style.		
A 3-point cab mount system with rubber isolators shall improve ride quality by isolating chassis vibrations from the cab.		
INTERIOR CAB INSULATION The cab shall include 1.50" insulation in the ceiling and side walls, and 2.00" insulation in the rear wall to maximize acoustic absorption and thermal insulation.		
FENDER LINERS Full circular inner fender liners in the wheel wells shall be provided.		
WINDSHIELD A curved safety glass windshield shall be provided with over 2,754 square inches of clear viewing area. The cab windshield shall have bright trim inserts in the rubber molding holding the glass in place. Economical windshield replacement glass shall be readily available from local auto glass suppliers.		
All cab glass shall be tinted.		
WINDSHIELD WIPERS Two (2) electric windshield wipers with washer shall be provided that meet FMVSS and SAE requirements.		
The washer reservoir shall be able to be filled without raising the cab.		

	Bidder Complies	
	Yes	No

GLOVE BOX

A glove box with a drop-down door shall be installed in the front dash panel in front of the officer's position.

ENGINE TUNNEL

Engine hood side walls shall be constructed of 0.50" aluminum. The top shall be constructed of 0.19" aluminum and shall be tapered at the top to allow for more driver and passenger elbow room.

The engine hood shall be insulated for protection from heat and sound. The noise insulation keeps the dBA level within the limits stated in the current NFPA 1901 standards.

CAB REAR WALL EXTERIOR COVERING

The exterior surface of the rear wall of the cab shall be overlaid with bright aluminum treadplate except for areas that are not typically visible when the cab is lowered.

CAB LIFT

A hydraulic cab lift system shall be provided consisting of an electric powered hydraulic pump, dual lift cylinders, and necessary hoses and valves.

The hydraulic pump shall have a manual override for backup in the event of electrical failure.

Lift controls shall be on a panel located on the pump panel or front area of the body in a convenient location.

The engine shall be easily accessible and capable of being removed with the cab tilted. The cab shall be capable of tilting 45 degrees and 90 degrees with crane assist.

Cab shall be locked down by a 2-point automatic spring-loaded hook mechanism that actuates after the cab has been lowered.

The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the control is located in the tilt position.

For increased safety, a redundant mechanical stay arm shall be provided that must be manually put in place on the driver side between the chassis and cab frame when the cab is in the raised position. This device shall be manually stowed to its original position before the cab can be lowered.

Cab Lift Interlock

The cab lift system shall be interlocked to the parking brake. The cab tilt mechanism shall be active only when the parking brake is set and the ignition switch is in the on position. If the parking brake is released, the cab tilt mechanism shall be disabled.

	Bidder Complies	
	Yes	No

GRILLE

A bright finished aluminum mesh grille screen, inserted behind a bright finished grille surround, shall be provided on the front center of the cab.

DOOR JAMB SCUFFPLATES

All cab door jambs shall be furnished with a polished stainless steel scuffplate, mounted on the striker side of the jamb.

MIRRORS

Ramco, Model 6001FFHR-750H, polished aluminum 9.25" wide x 13.50" high mirrors, with full flat glass section, shall be mounted on each side of the front cab corner. A convex section shall be bolted to the top of each mirror.

The flat glass in each mirror shall be heated and adjustable with remote controls that are convenient to the driver.

The convex section in each mirror shall be heated and adjusted manually.

DOORS

To enhance entry and egress to the cab, the forward cab doors shall be a minimum of 37.50" wide x 74.25" high. The crew cab doors shall be located on the sides of the cab and shall be constructed in the same manner as the forward cab doors. The crew cab doors shall measure a minimum of 34.88" wide x 88.25" high.

The forward cab and crew cab doors shall be constructed of extruded aluminum with a nominal material thickness of 0.125". The exterior door skins shall be constructed from .090" aluminum.

A flush mounted, chrome plated paddle type door handle shall be provided on the exterior of each cab door. Each door shall also be provided with an interior flush paddle handle.

The cab doors shall be provided with both interior (rotary knob) and exterior (keyed) locks as required by FMVSS 206. The locks shall be capable of activating when the doors are open or closed. The doors shall remain locked if locks are activated when the doors are opened, then closed.

A heavy duty, stainless steel, piano-type hinge with a 0.38" pin and 11 gauge leaf shall be provided on all cab doors. There shall be double automotive-type rubber seals around the perimeter of the door framing and door edges to ensure a weather-tight fit.

A chrome grab handle shall be provided on the inside of each cab and crew cab door.

The cab steps at each cab door location shall be located inside the cab doors to protect the steps from weather elements.

	Bidder Complies	
	Yes	No

DOOR PANELS

There shall be a full height brushed stainless steel door panel installed on the inside of all cab doors. The cab door panels shall be removable without disconnecting door and window mechanisms.

ELECTRIC OPERATED CAB DOOR WINDOWS

All four (4) cab doors shall be equipped with electric operated windows with flush mounted automotive style switches.

In addition to the electric door switches mounted on each cab and crew cab door, the drivers side lower instrument panel shall also include a controls for the passenger side front cab door window.

CAB STEPS

The forward cab and crew cab access steps shall be a full size two (2) step design to provide largest possible stepping surfaces for safe ingress and egress. The bottom steps shall be designed with a grip pattern punched into bright aluminum treadplate material to provide support, slip resistance, and drainage. The bottom steps shall be a bolt-in design to minimize repair costs should they need to be replaced. The forward cab steps shall be a minimum 24.75" wide, and the crew cab steps shall be 21.25" wide with an 8.00" minimum depth. The inside cab steps shall not exceed 18.00" in height and be limited to two (2) steps. Three (3) step entrance designs shall not be acceptable due to safety concerns. A slip-resistant handrail shall be provided adjacent to each cab door opening to assist during cab ingress and egress.

STIRRUP STEPS

Stirrup steps with handrail type rung shall be provided below each cab and crew cab door.

The stirrup step shall be lit by a white 12 volt DC LED light provided on the step.

The step light shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body step lights.

STEP LIGHTS

For reduced overall maintenance costs compared to incandescent lighting, there shall be four (4) white LED step lights provided. The lights shall be installed at each cab and crew cab door, one (1) per step. The lights shall be located in the driver side front doorstep, driver side crew cab doorstep, passenger side front doorstep and passenger side crew cab doorstep.

In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light.

	Bidder Complies	
	Yes	No

The lights shall be activated when the adjacent door is opened.

FENDER CROWNS

Stainless steel fender crowns shall be installed at the cab wheel openings. The fender crowns shall have a radius outside corner that allows the fender crown to extend beyond the side wall of the front tires and also allow the crew cab doors to open fully.

CREW CAB WINDOWS

One (1) fixed window with tinted glass shall be provided on each side of the cab, to the rear of the front cab door. The windows shall be sized to enhance light penetration into the cab interior. The windows shall measure 17.50" wide x 21.00" high.

The rear wall of the crew cab shall have two (2) windows, each being 11.29" wide x 17.95" high.

CUP HOLDER

There shall be four (4) cup holder(s) provided. Each cup holder shall have self-adjusting fingers that automatically grip beverage containers of various sizes. A recess in the cup holder shall allow it to hold beverage containers with handles.

The cup holder(s) shall be located at customer pick-up.

CAB INTERIOR

The left and right side dash and center console shall be a flat faced design to provide easy maintenance and shall be constructed out of painted aluminum.

The engine tunnel shall be padded and covered with 46 ounce leather grain vinyl resistant to oil, grease and mildew.

The headliner shall be installed in both forward and rear cab sections. Headliner material shall be vinyl. A sound barrier shall be part of its composition. Material shall be installed on aluminum sheet and securely fastened to interior cab ceiling.

Forward portion of cab headliner shall provide easy access for servicing electrical wiring or for other maintenance needs without removing the entire unit.

CAB INTERIOR UPHOLSTERY

The cab interior upholstery shall be red.

CAB INTERIOR PAINT

The cab interior metal surfaces shall be painted red, vinyl texture paint.

CAB FLOOR

The cab and crew cab flooring shall be constructed with bright aluminum treadplate.

	Bidder Complies	
	Yes	No

CAB DEFROSTER

There shall be a 41,000 BTU defroster in the cab located under the engine tunnel.

The defroster ventilation shall be built into the design of the cab dash instrument panel and shall be easily removable for maintenance.

The defroster shall have a 3-speed blower and temperature controls accessible to the driver and officer.

The defroster ducts shall be designed to provide maximum defrosting capabilities for the front cab windows.

CAB/CREW CAB HEATER

Two (2) auxiliary heaters with 32,000 BTU each shall be provided in the cab. The heaters shall have a 3-speed blower and temperature controls accessible to the driver and officer. There shall also be louvers located below the rear facing seat riser and below the driver and officer positions for airflow.

The heaters shall be mounted, one (1) within each rear facing seat riser.

AIR CONDITIONING

A high-performance, customized air conditioning system shall be furnished inside the cab and crew cab. A 19.10 cubic inch compressor shall be installed on the engine.

The air conditioning system shall be capable of cooling the average cab temperature from 100 degrees Fahrenheit to 72 degrees Fahrenheit at 50 percent relative humidity within 30 minutes. The cooling performance test shall be run only after the cab has been heat soaked at 100 degrees Fahrenheit for a minimum of 4 hours.

A roof-mounted condenser that meets and exceeds the performance specification shall be installed on the cab roof. Mounting the condenser below the cab or body would reduce the performance of the system and shall not be acceptable.

An evaporator unit that meets and exceeds the performance specification shall be installed in the cab, located in the center of the cab ceiling over the engine tunnel. The evaporator shall include two (2) high performance cores and plenums with multiple outlets, one (1) plenum directed to the front and one (1) plenum directed to the rear of the cab.

The evaporator unit shall be provided with adjustable air outlets strategically located to direct air flow to the driver, officer and crew cab area.

All hose used shall be class 1 type to reduce moisture ingression into the air conditioning system.

	Bidder Complies	
	Yes	No
The air conditioner refrigerant shall be R-134A and shall be installed by a certified technician. The air conditioner shall be controlled by a single electronic control panel. For ease of operation, the control panel shall include variable adjustment for temperature and fan control and be conveniently located on the dash in clear view of the driver. The control panel shall include robust knobs for both fan speed and temperature adjustment. **GRAVITY DRAIN TUBES** Two (2) condensate drain tubes shall be provided for the air conditioning evaporator. The drip pan shall have two (2) drain tubes plumbed separately to allow for the condensate to exit the drip pan. The standard evaporator pumps shall be disabled. **WINDOW DEFROST FANS** Two (2) window defrost fans shall be mounted on the ceiling of the cab, one (1) on each side of the cab. **SUN VISORS** Two (2) smoked Lexan™ sun visors provided. The sun visors shall be located above the windshield with one (1) mounted on each side of the cab. There shall be a polished stainless steel bracket provided to help secure each sun visor in the stowed position. **GRAB HANDLE** A black rubber covered grab handle shall be mounted on the lower portion of the driver's side cab entrance to assist in entering the cab. The grab handle shall be securely mounted to the post area between the door and steering wheel column. A long rubber grab handle shall be mounted on the dash board in front of the officer. **ENGINE COMPARTMENT LIGHTS** There shall be two (2) Whelen, Model 3SC0CDCR, 12 volt DC, 3.00" white LED light(s) with Whelen, Model 3FLANGEC, chrome flange kit(s) installed under the cab to be used as engine compartment illumination. These light(s) shall be activated automatically when the cab is raised. **ACCESS TO ENGINE DIPSTICKS** For access to the engine oil and transmission fluid dipsticks, there shall be a door on the engine tunnel, inside the crew cab. The door shall be on the rear wall of the engine tunnel, on the vertical surface. The door shall be 17.75" wide x 12.75" high and be flush with the wall of the engine tunnel.		

	Bidder Complies	
	Yes	No
The engine oil dipstick shall allow for checking only. The transmission dipstick shall allow for both checking and filling. An additional port shall be provided for filling the engine oil. The door shall have a rubber seal for thermal and acoustic insulation. One (1) flush latch shall be provided on the access door. **MAP BOX** A map box open from top, shall be installed per the customer instructions during pickup. The map box shall measure Outside to outside 12.25" x 9.25" x 8.125" tall. Inside to inside big compt 5.875" x 12.00", inside to inside little compt 3.00" x 12.00". Compt is rectangular with two bins facing up. There are pictures in the file. . The map box shall be constructed of .125" aluminum and shall be painted to match the cab interior. **VELCRO STRAP(S) FOR MAP BOX** There shall be two (2) Velcro® strap(s) installed on the map box. **FRONTAL IMPACT PROTECTION** The cab shall be provided with a frontal impact protection system and shall include the following: • A supplemental restraint system (SRS) sensor shall be installed on a structural cab member behind the instrument panel. The SRS sensor shall perform real time diagnostics of all critical subsystems and shall record sensory inputs immediately before and during a frontal impact event. • A fault-indicating light shall be provided on the vehicle's instrument panel allowing the driver to monitor the operational status of the SRS system. • A driver side front air bag shall be mounted in the steering wheel and shall be designed to protect the head and upper torso of the occupant, when used in combination with the three (3)-point seat belt. • A passenger side knee bolster air bag shall be mounted in the modesty panel below the dash panel and shall be designed to protect the legs of the occupant, when used in combination with the three (3)-point seat belt. • Driver and front passenger suspension seats shall be provided with devices to retract them to the lowest travel position during a frontal impact event. • Driver and front passenger seat belts shall be provided with pre-tensioners to remove slack from the seat belt during frontal impact event. The SRS system shall provide protection during a frontal or oblique impact event. The system shall activate when the vehicle decelerates at a predetermined G force known to cause injury to the occupants. The cab and chassis shall have been subjected, via third party test facility, to a crash impact during frontal and oblique impact testing. Testing included all major chassis and cab components such as mounting straps for fuel and air tanks, suspension mounts, front suspension components, rear suspensions		

	Bidder Complies	
	Yes	No

components, frame rail cross members, engine and transmission and their mounts, pump house and mounts, frame extensions and body mounts. The testing provided configuration specific information used to optimize the timing for firing the safety restraint system. The sensor shall activate the pyrotechnic devices when the correct crash algorithm, wave form, is detected. (no exception).

The SRS system shall deploy the following components in the event of a frontal or oblique impact event:

- Driver side front air bag.
- Passenger side knee bolster air bag.
- Driver and front passenger suspension seats shall be retracted to the lowest travel position.
- Driver and front passenger seat belts shall be pre-tensioned to firmly hold the occupant in place.

SEATING CAPACITY

The seating capacity in the cab shall be six (6).

DRIVER SEAT

A seat shall be provided in the cab for the driver. The seat design shall be a cam action type, with air suspension. For increased convenience, the seat shall include a manual control to adjust the horizontal position (6.00" travel). The manual horizontal control shall be a towel-bar style located below the forward part of the seat cushion. To provide flexibility for multiple driver configurations, the seat shall have an adjustable reclining back. The seat back shall be a high back style with side bolster pads for maximum support. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control).

The seat shall include the following features incorporated into the frontal impact protection system:

- A suspension seat safety system shall be included. When activated in the event of a frontal impact, this system shall pretension the seat belt and retract the seat to its lowest travel position.

The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

	Bidder Complies	
	Yes	No

OFFICER SEAT

A seat shall be provided in the cab for the passenger. The seat shall be a cam action type, with air suspension. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.

The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat shall include the following features incorporated into the frontal impact protection system:

- A suspension seat safety system shall be included. When activated, this system shall pretension the seat belt and then retract the seat to its lowest travel position.

The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

REAR FACING DRIVER SIDE OUTBOARD SEAT

There shall be one (1) rear facing seat provided at the driver side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.

The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

	Bidder Complies	
	Yes	No

REAR FACING PASSENGER SIDE OUTBOARD SEAT

There shall be one (1) rear facing seat provided at the passenger side outboard position in the crew cab. For optimal comfort, the seat shall be provided with 15.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle that shall activate an alarm indicating a seat is occupied but not buckled.

The seat back shall be an SCBA back style with 5 degree fixed recline angle. The SCBA cavity shall be adjustable from front to rear in 1.00" increments, to accommodate different sized SCBA cylinders. Moving the SCBA cavity shall be accomplished by unbolting, relocating, and re-bolting it in the desired location.

The seat shall be furnished with a 3-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

FORWARD FACING DRIVER SIDE OUTBOARD SEAT

There shall be one (1) forward facing, foldup seat provided at the driver side outboard position in the crew cab. The seat back shall be a high back style with 9 degree fixed recline angle. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle, that shall activate an alarm indicating a seat is occupied but not buckled.

The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

EMS COMPARTMENT

A forward facing EMS compartment shall be provided in the crew cab at the center position.

The compartment shall be 38.00" wide x 56.00" high x 22.63" deep with one (1) Amdor roll up door, locking with anodized finish. The clear door opening of the compartment shall be 27.50" wide x 46.00" high.

A TriMark 500-1200 eAsk key pad entry system shall be provided to unlock the door. The door shall lock automatically when the door is closed. An override button shall be provided in a hidden location within the cab.

	Bidder Complies	
	Yes	No

The compartment shall be constructed of smooth aluminum, and painted to match the cab interior.

COMPARTMENT LIGHT

There shall betwo (2) white LED strip lights, one (1) each side of the compartment opening. The lights shall be controlled by an automatic door switch.

FORWARD FACING PASSENGER SIDE OUTBOARD SEAT

There shall be one (1) forward facing foldup seat provided at the passenger side outboard position in the crew cab. The seat back shall be a high back style with 9 degree fixed recline angle. For optimal comfort, the seat shall be provided with 17.00" deep foam cushions designed with EVC (elastomeric vibration control). To ensure safe operation, the seat shall be equipped with seat belt sensors in the seat cushion and belt receptacle, that shall activate an alarm indicating a seat is occupied but not buckled.

The seat shall be furnished with a three (3)-point, shoulder type seat belt. The seat belt tongue shall be stored at waist position for quick application by the seat occupant. The seat belt receptacle shall be provided on a cable conveniently nested next to the seat cushion, providing easy accessibility. The seat belt shall be furnished with dual automatic retractors that shall provide ease of operation in the normal seating position.

SHELVING

There shall be three (3) shelves provided. Each shelf shall be constructed of 0.090" aluminum with a 1.25" up-turned lip. Shelving shall be infinitely adjustable by means of a threaded tightener sliding in a track.

The location shall be one (1) shelf in the center forward facing EMS cabinet and two (2) shelves in the center forward facing EMS cabinet.

SEAT UPHOLSTERY

All seat upholstery shall be red and black speckled Tuff-Tex material. The cab shall have six (6) seating positions.

AIR BOTTLE HOLDERS

All SCBA type seats in the cab shall have a "Hands-Free" auto clamp style bracket in its backrest. For efficiency and convenience, the bracket shall include an automatic spring clamp that allows the occupant to store the SCBA bottle by simply pushing it into the seat back. For protection of all occupants in the cab, in the event of an accident, the inertial components within the clamp shall constrain the SCBA bottle in the seat and shall exceed the NFPA standard of 9G. Bracket designs with manual restraints (belts, straps, buckles) that could be inadvertently left unlocked and allow the SCBA to move freely within the cab during an accident, shall not be acceptable.

There shall be a quantity of three (3) SCBA brackets.

	Bidder Complies	
	Yes	No

CREW CAB FORWARD FACING SEAT RISER

A seat riser. 38.00" wide x 22.63" deep x 12.00" high, shall be provided in the center forward facing position, without a seat mounted on top. The riser shall be used to store equipment.

There shall be a louvered access door provided in the front edge of the forward facing seat riser. Door shall be hinged with two (2) quarter turn flush latches.

SEAT BELTS

All seating positions in the cab and crew cab shall have red seat belts.

The belts shall also include the Ready Reach® D-loop assembly to the shoulder belt system. The Ready Reach feature adds an extender arm to the D-loop location placing the D-loop in a closer, easier to reach location.

SHOULDER HARNESS HEIGHT ADJUSTMENT

All seating positions furnished with 3-point shoulder type seat belts shall include a height adjustment. This adjustment shall optimize the belts effectiveness and comfort for the seated firefighter.

SEAT BELT MONITORING SYSTEM

A seat belt monitoring system (SBMS) shall be provided. The SBMS shall be capable of monitoring up to ten (10) seat positions indicating the status of each seat position with a green or red LED indicator as follows:

- Seat Occupied & Buckled = Green
- Seat Occupied & Unbuckled = Red
- No Occupant & Buckled = Red
- No Occupant & Unbuckled = Not Illuminated

Audible Alarm

The SBMS shall include an audible alarm that shall be activated when a red illumination condition exists and the parking brake is released, or a red illumination condition exists and the transmission is not in park.

HELMET STORAGE, PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, section 14.1.8.4.1 requires a location for helmet storage be provided.

There is no helmet storage on the apparatus as manufactured. The fire department shall provide a location for storage of helmets.

	Bidder Complies	
	Yes	No
CAB DOME LIGHTS There shall be four (4) dual LED dome lights with grey bezels provided. Two (2) lights shall be mounted above the inside shoulder of the driver and officer and two (2) lights shall be installed and located, one (1) on each side of the crew cab. The color of the LED's shall be red and white. The white LED's shall be controlled by the door switches and the lens switch. The color LED's shall be controlled by the lens switch. In order to ensure exceptional illumination, each white LED dome light shall provide a minimum of 10.1 foot-candles (fc) covering an entire 20.00" x 20.00" square seating position when mounted 40.00" above the seat. **HAND HELD SPOTLIGHT** There shall be two (2) Koehler BrightStar™ Lighthawk LED GEN II, Model 07670, hand lights and 12V DC chargers mounted per the customer instructions at print review and hard wire direct to battery's. The color shall be orange with a shoulder strap provided with each light. The hand lights shall be connected to the chassis battery system. **HAND HELD SPOTLIGHT** There shall be one (1) spotlight provided which shall be a Whelen, Model P36HHS LED hand held spot light(s) installed per the customer instruction during the print review. The light(s) shall be furnished with a coil cord and a stainless steel bracket mounting bracket. **HAND HELD SPOTLIGHT** There shall be one (1) Koehler BrightStar™ LED GEN II, Model 07670, hand light(s) and 12V DC charger(s) mounted per the customer instructions during the print review and hard wire direct to the battery's. The color shall be orange with a shoulder strap provided with each light. The hand light(s) shall be connected to the chassis battery system. **CAB INSTRUMENTATION** The cab instrument panel shall consist of gauges, an LCD display, telltale indicator lights, alarms, control switches, and a diagnostic panel. The function of instrument panel controls and switches shall be identified by a label adjacent to each item. Actuation of the headlight switch shall illuminate the labels in low light conditions. Telltale indicator lamps shall not be illuminated unless necessary.		

	Bidder Complies	
	Yes	No

The cab instruments and controls shall be conveniently located within the forward cab section directly forward of the driver. Gauge and switch panels shall be designed to be removable for ease of service and low cost of ownership.

CAB INTERIOR

The wrap-around style high impact ABS plastic cab dash fascia shall be designed to provide unobstructed visibility to instrumentation. The dash layout shall provide the driver with a quick reference to gauges that allows more time to focus on the road.

GAUGES

The gauge panel shall include the following ten (10) ivory gauges with chrome bezels to monitor vehicle performance:

- Voltmeter Gauge (Volts):
  - Low volts (11.8 VDC)
    - Amber indicator on gauge assembly with alarm
  - High volts (15 VDC)
    - Amber indicator on gauge assembly with alarm
  - Very low volts (11.3 VDC)
    - Amber indicator on gauge assembly with alarm
  - Very high volts (16 VDC)
    - Amber indicator on gauge assembly with alarm
- Tachometer (RPM)
- Speedometer (Primary (outside) MPH, Secondary (inside) Km/H)
- Fuel Level Gauge (Empty - Full in fractions):
  - Low fuel (1/8 full)
    - Amber indicator on gauge assembly with alarm
  - Very low fuel (1/32) fuel
    - Amber indicator on gauge assembly with alarm
- Engine Oil Pressure Gauge (PSI):
  - Low oil pressure to activate engine warning lights and alarms
    - Red indicator on gauge assembly with alarm
- Front Air Pressure Gauge (PSI):
  - Low air pressure to activate warning lights and alarm
    - Red indicator on gauge assembly with alarm
- Rear Air Pressure Gauge (PSI):
  - Low air pressure to activate warning lights and alarm.
    - Red indicator on gauge assembly with alarm
- Transmission Oil Temperature Gauge (Fahrenheit):
- High transmission oil temperature activates warning lights and alarm
  - Amber indicator on gauge assembly with alarm
- Engine Coolant Temperature Gauge (Fahrenheit):

	Bidder Complies	
	Yes	No

- High engine temperature activates an engine warning light and alarm
  - Red indicator on gauge assembly with alarm
- Diesel Exhaust Fluid Level Gauge (Empty - Full in fractions):
  - Low fluid (1/8 full)
    - Amber indicator on gauge assembly with alarm

All gauges and gauge indicators shall perform prove out at initial power-up to ensure proper performance.

INDICATOR LAMPS

To promote safety, the following telltale indicator lamps shall be integral to the gauge assembly and are located above and below the center gauges. The indicator lamps shall be "dead-front" design that is only visible when active. The colored indicator lights shall have descriptive text or symbols.

The following amber telltale lamps shall be present:

- Low coolant
- Trac cntl (traction control) (where applicable)
- Check engine
- Check trans (check transmission)
- Aux brake overheat (Auxiliary brake overheat)
- Air rest (air restriction)
- Caution (triangle symbol)
- Water in fuel
- DPF (engine diesel particulate filter regeneration)
- Trailer ABS (where applicable)
- Wait to start (where applicable)
- HET (engine high exhaust temperature) (where applicable)
- ABS (antilock brake system)
- MIL (engine emissions system malfunction indicator lamp) (where applicable)
- SRS (supplemental restraint system) fault (where applicable)
- DEF (low diesel exhaust fluid level)
- The following red telltale lamps shall be present:
- Warning (stop sign symbol)
- Seat belt
- Parking brake
- Stop engine
- Rack down

The following green telltale lamps shall be provided:

- Left turn

	Bidder Complies	
	Yes	No

- Right turn
- Battery on

The following blue telltale lamp shall be provided:

- High beam

ALARMS

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

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

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

INDICATOR LAMP AND ALARM PROVE-OUT

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

CONTROL SWITCHES

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

- Emergency master switch: A molded plastic push button switch with integral indicator lamp shall be provided. Pressing the switch shall activate emergency response lights and siren control. A green lamp on the switch provides indication that the emergency master mode is active. Pressing the switch again disables the emergency master mode.
- Headlight / Parking light switch: A three (3)-position maintained rocker switch shall be provided. The first switch position shall deactivate all parking lights and the headlights. The second switch position shall activate the parking lights. The third switch position shall activate the headlights.
- Panel back lighting intensity control switch: A three (3)-position momentary rocker switch shall be provided. The first switch position decreases the panel back lighting intensity to a minimum level as the switch is held. The second switch position is the default position that does not affect the back lighting

	Bidder Complies	
	Yes	No
intensity. The third switch position increases the panel back lighting intensity to a maximum level as the switch is held. The following standard controls shall be integral to the gauge assembly and are located below the right hand gauges. All switches have backlit labels for low light applications: • High idle engagement switch: A two (2)-position momentary rocker switch with integral indicator lamp shall be provided. The first switch position is the default switch position. The second switch position shall activate and deactivate the high idle function when pressed and released. The "Ok To Engage High Idle" indicator lamp must be active for the high idle function to engage. A green indicator lamp integral to the high idle engagement switch shall indicate when the high idle function is engaged. • "Ok To Engage High Idle" indicator lamp: A green indicator light shall be provided next to the high idle activation switch to indicate that the interlocks have been met to allow high idle engagement. • The following standard controls shall be provided adjacent to the cab gauge assembly within easy reach of the driver. All switches shall have backlit labels for low light applications. • Ignition switch: A three (3)-position maintained/momentary rocker switch shall be provided. The first switch position shall deactivate vehicle ignition. The second switch position shall activate vehicle ignition. The third momentary position shall disable the Command Zone audible alarm if held for three (3) to five (5) seconds. A green indicator lamp shall be activated with vehicle ignition. • Engine start switch: A two (2)-position momentary rocker switch shall be provided. The first switch position is the default switch position. The second switch position shall activate the vehicle's engine. The switch actuator is designed to prevent accidental activation. • 4-way hazard switch: A two (2)-position maintained rocker switch shall be provided. The first switch position shall deactivate the 4-way hazard switch function. The second switch position shall activate the 4-way hazard function. The switch actuator shall be red and includes the international 4-way hazard symbol. • Turn signal arm: A self-canceling turn signal with high beam headlight and windshield wiper/washer controls shall be provided. The windshield wiper control shall have high, low, and intermittent modes. • Parking brake control: An air actuated push/pull park brake control valve shall be provided. • Chassis horn control: Activation of the chassis horn control shall be provided through the center of the steering wheel.		

	Bidder Complies	
	Yes	No

CUSTOM SWITCH PANELS

The design of cab instrumentation shall allow for emergency lighting and other switches to be placed within easy reach of the operator thus improving safety. There shall be positions for up to three (3) switch panels in the overhead console on the driver's side, up to four (4) switch panels in the engine tunnel console facing the driver, up to three (3) switch panels in the overhead console on the officer's side and up to three (3) switch panels in the engine tunnel rear facing console accessible to both driver and officer. All switches shall have backlit labels for low light applications.

DIAGNOSTIC PANEL

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

- Engine diagnostic port
- Transmission diagnostic port
- ABS diagnostic port
- SRS diagnostic port (where applicable)
- Command Zone USB diagnostic port
- Engine diagnostic switch (blink codes flashed on check engine telltale indicator)
- ABS diagnostic switch (blink codes flashed on ABS telltale indicator)
- Diesel particulate filter regeneration switch (where applicable)
- Diesel particulate filter regeneration inhibit switch (where applicable)

CAB LCD DISPLAY

A digital four (4)-row by 20-character dot matrix display shall be integral to the gauge panel. The display shall be capable of showing simple graphical images as well as text. The display shall be split into three (3) sections. Each section shall have a dedicated function. The upper left section shall display the outside ambient temperature. The upper right section shall display odometer, trip mileage, PTO hours, fuel consumption, engine hours, and other configuration specific information. The bottom section shall display INFO, CAUTION, and WARNING messages. Text messages shall automatically activate to describe the cause of an audible caution or warning alarm. The LCD shall be capable of displaying multiple text messages should more than one caution or warning condition exist.

AIR RESTRICTION INDICATOR

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

	Bidder Complies	
	Yes	No

- Ammeter.

"DO NOT MOVE APPARATUS" INDICATOR

A Federal Signal, Model 360401-04 red flashing LED light, located in the driving compartment, shall be illuminated automatically per NFPA. The light shall be labeled "Do Not Move Apparatus If Light Is On".

The same circuit that activates the Do Not Move Apparatus indicator shall not activate any alarm when the parking brake is released.

DO NOT MOVE TRUCK MESSAGES

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

The following messages shall be displayed (where applicable):

- Do Not Move Truck
- DS Cab Door Open (Driver Side Cab Door Open)
- PS Cab Door Open (Passenger's Side Cab Door Open)
- DS Crew Cab Door Open (Driver Side Crew Cab Door Open)
- PS Crew Cab Door Open (Passenger's Side Crew Cab Door Open)
- DS Body Door Open (Driver Side Body Door Open)
- PS Body Door Open (Passenger's Side Body Door Open)
- Rear Body Door Open
- DS Ladder Rack Down (Driver Side Ladder Rack Down)
- PS Ladder Rack Down (Passenger Side Ladder Rack Down)
- Deck Gun Not Stowed
- Lt Tower Not Stowed (Light Tower Not Stowed)
- Hatch Door Open
- Fold Tank Not Stowed (Fold-A-Tank Not Stowed)
- Aerial Not Stowed (Aerial Device Not Stowed)
- Stabilizer Not Stowed
- Steps Not Stowed
- Handrail Not Stowed

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

	Bidder Complies	
	Yes	No

SWITCH PANELS

The emergency light switch panel shall have a master switch for ease of use plus individual switches for selective control. Each switch panel shall contain up to six (6) rocker-type switches each rated for two hundred thousand (200,000) cycles. Panels with less than six (6) switches shall include indicators or blanks. The switch panel(s) shall be located in the "overhead" position above the windshield on the driver side overhead to allow for easy access.

The switches shall be rocker-type and include an integral indicator light. For quick, visual indication the switch shall be illuminated whenever the switch is active. A 2-ply, scratch resistant laser engraved Gravoply label indicating the use of each switch shall be placed below the switches. The label shall allow light to pass through the letters for improved visibility in low light conditions. Switches and light source are integral to the switch panel assembly.

WIPER CONTROL

For simple operation and easy reach, the windshield wiper control shall be an integral part of the directional light lever located on the steering column. The wiper control shall include high and low wiper speed settings, a one (1)-speed intermittent wiper control and windshield washer switch. The control shall have a "return to park" provision, which allows the wipers to return to the stored position when the wipers are not in use.

SPARE CIRCUIT

There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires shall have the following features:

- The positive wire shall be connected directly to the battery power.
- The negative wire shall be connected to ground.
- Wires shall be protected to 10 amps at 12 volts DC.
- Power and ground shall terminate by the officer area in the dash with exact location shown on the instrument panel drawing.
- Termination shall be a Blue Sea Systems part number 1016 dual USB charger socket.
- Wires shall be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is applied.

SPARE CIRCUIT

There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus.

The above wires shall have the following features:

	Bidder Complies	
	Yes	No
• The positive wire shall be connected directly to the battery power • The negative wire shall be connected to ground • Wires shall be protected to 30 amps at 12 volts DC • Power and ground shall terminate in the center console • Termination shall be with 3/8" studs and plastic covers • Wires shall be sized to 125% of the protection This circuit(s) may be load managed when the parking brake is set. **SPARE CIRCUIT** There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus. The above wires shall have the following features: The positive wire shall be connected directly to the battery power. The negative wire shall be connected to ground. Wires shall be protected to 10 amps at 12 volts DC. Power and ground shall terminate in the electrical compartment above the engine doghouse with 18" pigtail and labeled. Termination shall be with 3/8" studs and plastic covers. Wires shall be sized to 125% of the protection. This circuit(s) may be load managed when the parking brake is set. **SPARE CIRCUIT** There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus. The above wires shall have the following features: • The positive wire shall be connected directly to the battery power. • The negative wire shall be connected to ground. • Wires shall be protected to 10 amps at 12 volts DC. • Power and ground shall terminate above the radio swival mount in the ceiling with a 18" pigtail labeled. • Termination shall be with 3/8" studs and plastic covers. Wires shall be sized to 125% of the protection. This circuit(s) may be load managed when the parking brake is set.		

	Bidder Complies	
	Yes	No
SPARE CIRCUIT There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus. The above wires shall have the following features: The positive wire shall be connected directly to the battery switched power. The negative wire shall be connected to ground. Wires shall be protected to 15 amps at 12 volts DC. Power and ground shall terminate above the swival in the cab ceiling ofr the customer radio with a 18" pigtail labed. Termination shall be with 3/8" studs and plastic covers. Wires shall be sized to 125% of the protection. This circuit(s) may be load managed when the parking brake is set. **SPARE CIRCUIT** There shall be two (2) pair of wires, including a positive and a negative, installed on the apparatus. The above wires shall have the following features: • The positive wire shall be connected directly to the battery power • The negative wire shall be connected to ground • Wires shall be protected to 15 amps at 12 volts DC • Power and ground shall terminate officer side dash area • Termination shall be with heat shrinkable butt splicing • Wires shall be sized to 125 percent of the protection The circuit(s) may be load managed when the parking brake is set. **SPARE CIRCUIT** There shall be one (1) pair of wires, including a positive and a negative, installed on the apparatus. The above wires shall have the following features: • The positive wire shall be connected directly to the battery power. • The negative wire shall be connected to ground. • Wires shall be protected to 5 amps at 12 volts DC.		

	Bidder Complies	
	Yes	No

- Power and ground shall terminate per the customer instructions at print review and this will be for the customer supplied "T.I.C." (Thermal Imaging camera).
- Termination shall be with heat shrinkable butt splicing.

Wires shall be sized to 125% of the protection.

This circuit(s) may be load managed when the parking brake is set.

RADIO WITH CD PLAYER

There shall be a Panasonic™, AM/FM/Weather Band stereo radio with compact disc player and auxiliary input jack installed.

The compact disc stereo radio shall be mounted within reach of the officer.

The quantity and location of the speakers shall be one (1) pair of 5.25" speakers in the cab and one (1) pair of 5.25" speakers in the crew cab.

The type and location of the antenna shall be a roof-mounted rubber antenna located in an open space, on the cab roof.

SWIVEL MOUNT

There shall be one (1) Johnny Ray, Model 203 swivel mount bracket(s) provided for the fire department's radio equipment. The swivel mount bracket(s) shall be located on the hinged cab forward center ceiling between the driver and officer in front of the windshield center post.

INFORMATION CENTER

An information center employing a 7.00" diagonal touch screen color LCD display shall be encased in an ABS plastic housing.

The information center shall have the following specifications:

- Operate in temperatures from -40 to 185 degrees Fahrenheit
- An Optical Gel shall be placed between the LCD and protective lens
- Five weather resistant user interface switches
- Grey with black accents
- Sunlight Readable
- Linux operating system
- Minimum of 1000nits rated display
- Display can be changed to an available foreign language
- A LCD display integral to the cab gauge panel shall be included as outlined in the cab instrumentation area.
- Programmed to read US Customary

	Bidder Complies	
	Yes	No

GENERAL SCREEN DESIGN

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

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

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

HOME/TRANSIT SCREEN

This screen shall display the following:

- Vehicle Mitigation (if equipped)
- Water Level (if equipped)
- Foam Level (if equipped)
- Seat Belt Monitoring Screen
- Tire Pressure Monitoring (if equipped)
- Digital Speedometer
- Active Alarms

ON SCENE SCREEN

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

- Battery Voltage
- Fuel
- Oil Pressure
- Coolant Temperature
- RPM
- Water Level (if equipped)
- Foam Level (if equipped)

	Bidder Complies	
	Yes	No

- Foam Concentration (if equipped)
- Water Flow Rate (if equipped)
- Water Used (if equipped)
- Active Alarms

VIRTUAL BUTTONS

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

PAGE SCREEN

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

- Diagnostics
  - Faults
    - Listed by order of occurrence
    - Allows to sort by system
  - Interlock
    - Throttle Interlocks
    - Pump Interlocks (if equipped)
    - Aerial Interlocks (if equipped)
    - PTO Interlocks (if equipped)
  - Load Manager
    - A list of items to be load managed shall be provided. The list shall provide a description of the load.
    - The lower the priority numbers the earlier the device shall be shed should a low voltage condition occur.
    - The screen shall indicate if a load has been shed (disabled) or not shed.
    - "At a glance" color features are utilized on this screen.
  - Systems
    - Command Zone
      - Module type and ID number
      - Module Version
      - Input or output number
      - Circuit number connected to that input or output
      - Status of the input or output
      - Power and Constant Current module diagnostic information
    - Foam (if equipped)
    - Pressure Controller (if equipped)
    - Generator Frequency (if equipped)

	Bidder Complies	
	Yes	No
o Live Data ▪ General Truck Data • Maintenance o Engine oil and filter o Transmission oil and filter o Pump oil (if equipped) o Foam (if equipped) o Aerial (if equipped) • Setup o Clock Setup o Date & Time ▪ 12 or 24 hour format ▪ Set time and date o Backlight ▪ Daytime ▪ Night time ▪ Sensitivity o Unit Selection o Home Screen o Virtual Button Setup o On Scene Screen Setup o Configure Video Mode ▪ Set Video Contrast ▪ Set Video Color ▪ Set Video Tint • Do Not Move o The screen shall indicate the approximate location and type of item that is open or is not stowed for travel. The actual status of the following devices shall be indicate ▪ Driver Side Cab Door ▪ Passenger's Side Cab Door ▪ Driver Side Crew Cab Door ▪ Passenger's Side Crew Cab Door ▪ Driver Side Body Doors ▪ Passenger's Side Body Doors ▪ Rear Body Door(s) ▪ Ladder Rack (if applicable) ▪ Deck Gun (if applicable)		

	Bidder Complies	
	Yes	No

- Light Tower (if applicable)
- Hatch Door (if applicable)
- Stabilizers (if applicable)
- Steps (if applicable)

- Notifications
  - View Active Alarms
    - Shows a list of all active alarms including date and time of the occurrence is shown with each alarm
    - Silence Alarms - All alarms are silenced
- Timer Screen
- HVAC (if equipped)
- Tire Information (if equipped)

Button functions and button labels may change with each screen.

VEHICLE DATA RECORDER

A vehicle data recorder (VDR) shall be provided. The VDR shall be capable of reading and storing vehicle information.

The information stored on the VDR can be downloaded through a USB port mounted in a convenient location determined by cab model. A CD provided with the apparatus shall include the programming to download the information from the VDR. A USB cable can be used to connect the VDR to a laptop to retrieve required information.

The vehicle data recorder shall be capable of recording the following data via hardwired and/or CAN inputs:

- Vehicle Speed - MPH
- Acceleration - MPH/sec
- Deceleration - MPH/sec
- Engine Speed - RPM
- Engine Throttle Position - % of Full Throttle
- ABS Event - On/Off
- Seat Occupied Status - Yes/No by Position (7-12 Seating Capacity)
- Seat Belt Buckled Status - Yes/No by Position (7-12 Seating Capacity)
- Master Optical Warning Device Switch - On/Off
- Time - 24 Hour Time
- Date - Year/Month/Day

	Bidder Complies	
	Yes	No
INTERCOM SYSTEM There shall be digital, single radio interface, intercom located in the cab. The front panel shall have master volume, and squelch controls with illuminated indicators, allowing for independent level setting of radio and auxiliary audio devices. There shall be one (1) radio listen only / transmit control with select, monitor, receive, and transmit indicators. There shall be one (1) auxiliary audio input with select, and receive indicators. Headset jacks shall be provided for the driver, officer, two (2) crew positions located at both rear facing seats , and the pump operator. The following Firecom components shall be provided: • One (1) 5100D Intercom • Four (4) HM-10 Interior headset jacks • One (1) PP-20 Exterior headset jack • All necessary power and station cabling **RADIO / INTERCOM INTERFACE CABLE** The apparatus manufacturer shall supply and install one (1) radio interface cable before delivery of the vehicle. The radio equipment to be used by the customer shall be: • Motorola High Power , Model number will be given at print review. **UNDER THE HELMET HEADSET, RADIO TRANSMIT** There shall be two (2) Firecom, Model UH-51S under helmet, radio transmit headset(s) with one (1) speaker and one (1) slotted dome without speaker provided driver's seat and officer seat. Each headset shall feature: • Coiled cord with rugged angled plug • Noise cancelling electric microphone • Flex boom rotates for left or right dress • Adjustable volume control • ComLeather ear seals • Red Radio Push To Transmit button **UNDER THE HELMET HEADSET, INTERCOM ONLY** There shall be two (2) Firecom™, Model UH-52, under helmet, intercom only headset(s) provided driver's side outboard rear facing seat and passenger's side outboard rear facing seat.		

	Bidder Complies	
	Yes	No

Each headset shall feature:

- Coiled cord with rugged angled plug
- Noise cancelling electric microphone
- Flex boom for left or right dress
- Adjustable volume control
- ComLeather ear seals with 24 dB noise reduction
- Intercom Push To Talk button

HEADSET HANGERS

There shall be four (4) headset hanger(s) installed driver's seat, officer's seat, driver's side inboard rear facing seat and passenger's side inboard rear facing seat. The hanger(s) shall meet NFPA 1901, Section 14.1.11, requirement for equipment mounting.

BRACKET ONLY INSTALLATION

There shall be one (1) customer supplied Thermal Imaging camera charging bracket(s) sent to the apparatus manufacturers preferred installer to be installed per the department instructions at print review.

Specific shipping requirements shall be followed.

GPS MULTIBAND ANTENNA

There shall be one (1) PCTel, Model GPSHPDLTEMIMO-SF, stud mount, low profile, multi-band antenna installed on the cab roof.

The antenna shall feature:

- Two (2) 4G LTE elements for 698-960MHz and 1710-2700MHz with 17.00' of Pro-Flex Plus 195 coaxial cable, each with SMA male connectors, routed to the mobile data terminal (MDT)
- Dual (MIMO 802.11n) broadband WiFi elements, 2.4-2.5GHz and 4.9-5.9GHz, with 17.00' of Pro-Flex Plus 195 coaxial cable, each with RP-SMA male connectors installed, routed to the WiFi device
- One (1) GPS element with 17.00' of RG-174/U coaxial cable with SMA male connector, routed to the mobile data terminal (MDT)

ELECTRICAL POWER CONTROL SYSTEM

The primary power distribution shall be located forward of the officer's seating position and be easily accessible while standing on the ground for simplified maintenance and troubleshooting. Additional electrical distribution centers shall be provided throughout the vehicle to house the vehicle's electrical power, circuit protection, and control components. The electrical distribution centers shall be located strategically throughout the vehicle to minimize wire length. For ease of maintenance, all electrical distribution

	Bidder Complies	
	Yes	No

centers shall be easily accessible. All distribution centers containing fuses, circuit breakers and/or relays shall be easily accessible.

Distribution centers located throughout the vehicle shall contain battery powered studs for supplying customer installed equipment thus providing a lower cost of ownership.

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

SOLID-STATE CONTROL SYSTEM

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

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

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

- Green LED indicator light for module power
- Red LED indicator light for network communication stability status
- Control system self test at activation and continually throughout vehicle operation
- No moving parts due to transistor logic
- Software logic control for NFPA mandated safety interlocks and indicators
- Integrated electrical system load management without additional components
- Integrated electrical load sequencing system without additional components
- Customized control software to the vehicle's configuration
- Factory and field re programmable to accommodate changes to the vehicle's operating parameters
- Complete operating and troubleshooting manuals
- USB connection to the main control module for advanced troubleshooting

	Bidder Complies	
	Yes	No

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

- Module circuit board shall meet SAE J771 specifications
- Operating temperature from -40C to +70C
- Storage temperature from -40C to +70C
- Vibration to 50g

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

Operating voltage from eight (8) volts to 16 volts DC

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

CIRCUIT PROTECTION AND CONTROL DIAGRAM

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

ON-BOARD ADVANCED/VISUAL ELECTRICAL SYSTEM DIAGNOSTICS

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

- Text description of active warning or caution alarms
- Simplified warning indicators
- Amber caution indication with intermittent alarm
- Red warning indication with steady tone alarm

All control system modules, with the exception of the main control module, shall contain on-board visual diagnostic LEDs that assist in troubleshooting. The LEDs shall be enclosed within the sealed, transparent module housing near the face of the module. One LED for each input or output shall be provided and shall illuminate whenever the respective input or output is active. Color-coded labels within the modules shall encompass the LEDs for ease of identification. The LED indicator lights shall provide point of use information for reduced troubleshooting time without the need for an additional computer.

TECH MODULE WITH WIFI

An in cab module will provide Wifi wireless interface and data logging capability. (No Exception) The Wifi interface will comply with IEEE 802.11 b/g/n capabilities while communicating at 2.4 Gigahertz. The module will provide an external antenna

	Bidder Complies	
	Yes	No
connection allowing a line of site communication range of up to 300 feet with a roof mounted antenna. The module will transmit a password protected web page to a wifi enabled device (i.e. most smart phones, tablets or laptops) allowing two levels of user interaction. The firefighter level will allow vehicle monitoring of the vehicle and firefighting systems on the apparatus. The technician level will allow diagnostic access to inputs and outputs installed on the Command Zone™, control and information system. The data logging capability will record faults from the engine, transmission, ABS and Command Zone™, control and information systems as they occur. No other data will be recorded at the time the fault occurs. The data logger will provide up to 2 Gigabytes of data storage. A USB connection will be provided on the Tech Module. It will provide a means to download data logger information and update software in the device. **PROGNOSTICS** A software based vehicle tool shall be provided to predict remaining life of the vehicles critical fluid and events (no exceptions). The system shall send automatic indications to the Command Zone, color display and/or wireless enabled device to proactively alert of upcoming service intervals. Prognostics shall include: • Engine oil and filter • Transmission oil and filter • Pump oil (if equipped) • Foam oil (if equipped) • Aerial oil and filter (if equipped) **ADVANCED DIAGNOSTICS** An advanced, Windows-based, diagnostic software program shall be provided for this control system. The software shall provide troubleshooting tools to service technicians equipped with a Windows-based computer or wireless enabled device. The service and maintenance software shall be easy to understand and use and have the ability to view system input/output (I/O) information. **INDICATOR LIGHT AND ALARM PROVE-OUT SYSTEM** A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.		

	Bidder Complies	
	Yes	No

VOLTAGE MONITOR SYSTEM

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

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

DEDICATED RADIO EQUIPMENT CONNECTION POINTS

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

- The studs shall consist of the following:
- 12-volt 40-amp battery switched power
- 12-volt 60-amp ignition switched power
- 12-volt 60-amp direct battery power

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

ENHANCED SOFTWARE

The solid-state control system shall include the following software enhancements:

All perimeter lights and scene lights (where applicable) shall be deactivated when the parking brake is released.

Cab and crew cab dome lights shall remain on for ten (10) seconds for improved visibility after the doors close. The dome lights shall dim after ten (10) seconds or immediately if the vehicle is put into gear.

Cab and crew cab perimeter lights shall remain on for ten (10) seconds for improved visibility after the doors close. The dome lights shall dim after ten (10) seconds or immediately if the vehicle is put into gear.

EMI/RFI PROTECTION

To prevent erroneous signals from crosstalk contamination and interference, the electrical system shall meet, at a minimum, SAE J551/2, thus reducing undesired electromagnetic and radio frequency emissions. An advanced electrical system shall be used to ensure radiated and conducted electromagnetic interference (EMI) or radio frequency interference (RFI) emissions are suppressed at their source.

	Bidder Complies	
	Yes	No
The apparatus shall have the ability to operate in the electromagnetic environment typically found in fire ground operations to ensure clean operations. The electrical system shall meet, without exceptions, electromagnetic susceptibility conforming to SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter. The vehicle OEM, upon request, shall provide EMC testing reports from testing conducted on an entire apparatus and shall certify that the vehicle meets SAE J551/2 and SAE J1113/25 Region 1, Class C EMR for 10KHz-1GHz to 100 Volts/Meter requirements. Component and partial (incomplete) vehicle testing is not adequate as overall vehicle design can impact test results and thus is not acceptable by itself. EMI/RFI susceptibility shall be controlled by applying appropriate circuit designs and shielding. The electrical system shall be designed for full compatibility with low-level control signals and high-powered two-way radio communication systems. Harness and cable routing shall be given careful attention to minimize the potential for conducting and radiated EMI/RFI susceptibility. **ELECTRICAL** All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All wiring shall be high temperature crosslink type. Wiring shall be run, in loom or conduit, where exposed and have grommets where wire passes through sheet metal. Automatic reset circuit breakers shall be provided which conform to SAE Standards. Wiring shall be color, function and number coded. Function and number codes shall be continuously imprinted on all wiring harness conductors at 2.00" intervals. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines: 1. All holes made in the roof shall be caulked with silicon, rope caulk is not acceptable. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof. 2. Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body. 3. Electrical components designed to be removed for maintenance shall not be fastened with nuts and bolts. Metal screws shall be used in mounting these devices. Also a coil of wire shall be provided behind the appliance to allow them to be pulled away from mounting area for inspection and service work. 4. Corrosion preventative compound shall be applied to all terminal plugs located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation (of the plug).		

	Bidder Complies	
	Yes	No

5. All lights that have their sockets in a weather exposed area shall have corrosion preventative compound added to the socket terminal area.
6. All electrical terminals in exposed areas shall have silicon (1890) applied completely over the metal portion of the terminal.

All lights and reflectors, required to comply with Federal Motor Vehicle Safety Standard #108, shall be furnished. Rear identification lights shall be recessed mounted for protection. Lights and wiring mounted in the rear bulkheads shall be protected from damage by installing a false bulkhead inside the rear compartments.

An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order.

The results of the tests shall be recorded and provided to the purchaser at time of delivery.

BATTERY SYSTEM

There shall be six (6) 12 volt Exide®, Model 31S950X3W, batteries that include the following features shall be provided:

- 950 CCA, cold cranking amps
- 190 amp reserve capacity
- High cycle
- Group 31
- Rating of 5700 CCA at 0 degrees Fahrenheit
- -140 minutes of reserve capacity
- Threaded stainless steel studs

Each battery case shall be a black polypropylene material with a vertically ribbed container for increased vibration resistance. The cover shall be manifold vented with a central venting location to allow a 45 degree tilt capacity.

The inside of each battery shall consist of a "maintenance free" grid construction with poly wrapped separators and a flooded epoxy bottom anchoring for maximum vibration resistance.

BATTERY SYSTEM

There shall be a single starting system with an ignition switch and starter button provided and located on the cab instrument panel.

MASTER BATTERY SWITCH

There shall be a master battery switch provided within the cab within easy reach of the driver to activate the battery system.

	Bidder Complies	
	Yes	No
An indicator light shall be provided on the instrument panel to notify the driver of the status of the battery system. **BATTERY COMPARTMENTS** Batteries shall be stored in well-ventilated compartments that are located under the cab and bolted directly to the chassis frame. The battery compartments shall be constructed of 0.188" steel plate and be designed to accommodate a maximum of three (3) group 31 batteries in each compartment. The battery hold-downs shall be of a non-corrosive material. All bolts and nuts shall be stainless steel. The compartments shall include formed fit heavy duty roto-molded polyethylene battery trays with drain tubes for the batteries to sit in. Heavy-duty battery cables shall be used to provide maximum power to the electrical system. Cables shall be color-coded. Battery terminal connections shall be coated with anti-corrosion compound. Battery solenoid terminal connections shall be encapsulated with semi-permanent rubberized compound. **JUMPER STUDS** One (1) set of battery jumper studs with plastic color-coded covers shall be installed on the bottom of the driver's side battery box. This shall provide for easy jumper cable access. **BATTERY CHARGER/ AIR COMPRESSOR** There shall be a Kussmaul Pump Plus 1000, Model 091-9-1000, 18 amp single output battery charger/air compressor system with internal battery saver shall be provided. There shall be a display bar graph indicating the state of charge included. The battery saver circuit shall be capable of supplying up to three (3) amps for external loads such as hand light or auxiliary radio batteries. The 12-volt air compressor shall be installed to maintain the air system pressure when the vehicle is not in use. The battery charger shall be wired to the AC shoreline inlet through an AC receptacle adjacent to this battery charger. Battery charger/compressor shall be under the EMS compartment. The battery charger indicator shall be located near the driver's seat riser with special bracketry.		

	Bidder Complies	
	Yes	No

KUSSMAUL AUTO EJECT FOR SHORELINE

There shall be one (1) Kussmaul Model 091-20WP-120, 20 amp 120 volt AC shoreline inlet(s) provided to operate the dedicated 120 volt AC circuits on the apparatus.

The shoreline inlet(s) shall include red weatherproof flip up cover(s).

There shall be a release solenoid wired to the vehicle's starter to eject the AC connector when the engine is starting.

The shoreline(s) shall be connected to the battery charger, cab electrical receptcales and air pump.

There shall be a mating connector body supplied with the loose equipment.

There shall be a label installed near the inlet(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency

The shoreline receptacle shall be located on the driver side of cab, above wheel.

SCUFFPLATE AROUND SHORELINE INLET

A 12.00" x 12.00" polished stainless steel plate shall be provided around the shoreline inlet, as practical.

SHORELINE INLET POWERED

A green indicator light, remote mounted next to the shoreline inlet shall be provided. The light shall indicate when the shoreline inlet has been powered with 120 VAC.

POWER DISCONNECT

A Kussmaul, Model 091-18-098 "Dynamic" power disconnect shall be supplied and installed within the auto-eject power line. It shall disconnect the load shortly before the auto-eject is ejected and shall also include a time delay, which connects the load after the auto-eject is plugged in.

ALTERNATOR

A C.E. Niehoff, model C680-1, alternator shall be provided. It shall have a rated output current of 430 amp as measured by SAE method J56. Also, it shall have a custom three (3)-set point voltage regulator, manufactured by C. E. Niehoff. The alternator shall be connected to the power and ground distribution system with heavy-duty cables sized to carry the full rated alternator output.

	Bidder Complies	
	Yes	No

POWER DISTRIBUTION LAYOUT

A power distribution panel layout shall be laminated and installed under the distribution area cover identifying power and signal protection and control systems to allow for immediate component identification

ELECTRONIC LOAD MANAGER

An electronic load management (ELM) system shall be provided that monitors the vehicles 12-volt electrical system, automatically reducing the electrical load in the event of a low voltage condition, and automatically restoring the shed electrical loads when a low voltage condition expires. This ensures the integrity of the electrical system.

For improved reliability and ease of use, the load manager system shall be an integral part of the vehicle's solid state control system requiring no additional components to perform load management tasks. Load management systems which require additional components shall not be allowed.

The system shall include the following features:

- System voltage monitoring.
- A shed load shall remain inactive for a minimum of five minutes to prevent the load from cycling on and off.
- Sixteen available electronic load shedding levels.
- Priority levels can be set for individual outputs.
- High Idle to activate before any electric loads are shed and deactivate with the service brake.
    - If enabled:
        - "Load Man Hi-Idle On" shall display on the information center.
        - Hi-Idle shall not activate until 30 seconds after engine start up.
- Individual switch "on" indicator to flash when the particular load has been shed.
- The information center indicates system voltage.

The information center, where applicable, includes a "Load Manager" screen indicating the following:

- Load managed items list, with priority levels and item condition.
- Individual load managed item condition:
    - ON = not shed
    - SHED = shed

SEQUENCER

A sequencer shall be provided that automatically activates and deactivates vehicle loads in a preset sequence thereby protecting the alternator from power surges. This sequencer operation shall allow a gradual increase or decrease in alternator output, rather than loading or dumping the entire 12 volt load to prolong the life of the alternator.

	Bidder Complies	
	Yes	No
For improved reliability and ease of use, the load sequencing system shall be an integral part of the vehicle's solid state control system requiring no additional components to perform load sequencing tasks. Load sequencing systems which require additional components shall not be allowed. Emergency light sequencing shall operate in conjunction with the emergency master light switch. When the emergency master switch is activated, the emergency lights shall be activated one by one at half-second intervals. Sequenced emergency light switch indicators shall flash while waiting for activation. When the emergency master switch is deactivated, the sequencer shall deactivate the warning light loads in the reverse order. Sequencing of the following items shall also occur, in conjunction with the ignition switch, at half-second intervals: • Cab Heater and Air Conditioning • Crew Cab Heater (if applicable) • Crew Cab Air Conditioning (if applicable) • Exhaust Fans (if applicable) • Third Evaporator (if applicable) **HEADLIGHTS** There shall be four (4) JW Speaker®, rectangular LED lights mounted in the front quad style, chrome housing on each side of the cab grille: • The outside light on each side shall contain a Model 8800-12V - DOT/ECE LB LED, low beam module. • The inside light on each side shall contain a Model 8800 -12V - DOT/ECE HB LED, high beam module. **DIRECTIONAL LIGHTS** There shall be two (2) Whelen® 600 series, LED combination directional/marker lights provided. The lights shall be located on the outside cab corners, next to the headlights. The color of the lenses shall be the same color as the LED's. **ADDITIONAL DIRECTIONAL LIGHTS** There shall be two (2) Whelen, Model 60A00TAR, amber LED populated arrow directional lights provided on the back of the cab, one (1) on each side. These lights shall be mounted low on the back wall of the crew cab in 15 degree recessed angle brackets.		

	Bidder Complies	
	Yes	No

INTERMEDIATE LIGHT

There shall be two (2) Truck-Lite®, Model 60115Y, amber LED lights furnished, one (1) each side, horizontally in the rear fender panel. The light shall double as a turn signal and marker light.

A stainless steel trim shall be included with this installation.

CAB CLEARANCE/MARKER/ID LIGHTS

There shall be five (5) Truck-Lite, Model 10006Y kits, amber LED beehive lights provided to indicate the presence and overall width of the vehicle in the following locations:

- Three (3) amber LED identification lights shall be installed on the center of the cab roof, above the windshield.
- Two (2) amber LED clearance/marker lights shall be installed, one (1) on each outboard side of the cab roof, above the windshield.

REAR CLEARANCE/MARKER/ID LIGHTING

There shall be three (3) Truck-Lite®, Model 35200R, LED lights used as identification lights located at the rear of the apparatus per the following:

- As close as practical to the vertical centerline
- Centers spaced not less than 6.00" or more than 12.00" apart
- Red in color
- All at the same height

There shall be two (2) Truck-Lite, Model 35200R, LED lights installed at the rear of the apparatus used as clearance lights located at the rear of the apparatus per the following:

- To indicate the overall width of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical
- Red in color
- To be visible from the rear
- All at the same height

There shall be two (2) Truck-Lite, Model 35200R, LED lights installed on the side of the apparatus as marker lights as close to the rear as practical per the following:

- To indicate the overall length of the vehicle
- One (1) each side of the vertical centerline
- As near the top as practical

	Bidder Complies	
	Yes	No

- Red in color
- To be visible from the side
- All at the same height

There shall be two (2) red reflectors located on the rear of the truck facing to the rear. One (1) each side, as far to the outside as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

There shall be two (2) red reflectors located on the side of the truck facing to the side. One (1) each side, as far to the rear as practical, at a minimum of 15.00", but no more than 60.00", above the ground.

Per FMVSS 108 and CMVSS 108 requirements.

REAR FMVSS LIGHTING

The rear stop/tail and directional lighting shall consist of the following:

- Two (2) Federal Signal, Model QL64Z-BBT, red LED stop/tail lights
- Two (2) Federal Signal, Model QL64Z-TURN, amber LED directional lights

These lights shall be provided with a flange.

BACKUP LIGHTS

There shall be two (2) Federal Signal, Model QL64Z-BACKUP LED lights provided.

The lights shall be provided with a flange.

LICENSE PLATE BRACKET

There shall be one (1) license plate bracket located below the tailboard on a removable bolt-on bracket located driver side.

A white LED light shall illuminate the license plate. A polished stainless steel light shield shall be provided over the light that shall direct illumination downward, preventing white light to the rear.

BACKUP ALARM

A Federal, Model 258, solid-state electronic audible backup alarm that actuates when the truck is shifted into reverse shall be provided. The device shall sound at 107 decibels at 10 feet.

SONAR SAFETY SYSTEM

The apparatus shall be equipped with a Hindsight 20/20 HS300U sonar back-up warning system. The system shall automatically activate when the vehicle is placed in reverse or

	Bidder Complies	
	Yes	No
when the turn signal is used. Electronic sensors installed on the vehicle shall emit ultrasonic pulses and listen for the returning sonic echo that bounces off an obstacle within the system's operating range. A detected object distance shall be transmitted to a display module located in the front of the cab in view of the driver. The sensors shall be mounted on each side of the apparatus and at the rear. **CAB PERIMETER SCENE LIGHTS** There shall be four (4) Truck-lite, Model 6060C, white LED lights with grommets provided, one (1) for each cab and crew cab door. These lights shall be activated automatically when the battery switch is on and the exit doors are opened or by the same means as the body perimeter scene lights. **PUMP HOUSE PERIMETER LIGHTS** There shall be two (2) Truck-Lite, Model 6060C, 6.00" oval LED 12 volt DC weatherproof lights with grommets provided under the pump panel running boards, one (1) each side. The lights shall be controlled by the same means as the body perimeter lights. **BODY PERIMETER SCENE LIGHTS** There shall be two (2) Truck-Lite, Model 6060C, 6.00" x 2.00" oval LED lights with Model 60700, grommets provided under at the rear step area of the body, one (1) each side shining to the rear. The perimeter scene lights shall be activated when the parking brake is applied. **STEP LIGHTS** Four (4) white LED step lights shall be provided. One (1) step light shall be provided on each side, on the front compartment face and two (2) step lights at the rear to illuminate the tailboard. In order to ensure exceptional illumination, each light shall provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light. These step lights shall be actuated with the pump panel light switch. All other steps on the apparatus shall be illuminated per the current edition of NFPA 1901.		

	Bidder Complies	
	Yes	No
12 VOLT LIGHTING There shall be two (2) Whelen Model PFP2P, 12 volt DC LED dual floodlight(s) installed on the apparatus. The painted parts of this light assembly to be white. The lights shall be installed at the pump panel in the over the pump compartment, one each side. The light(s) to be installed on a side body/surface mount pull-up pole(s). The length of the outside pole to be 20.00". The inside pole length to be 57.00" long or as long as practical to fit in the location selected. The light pole(s) to be installed without handle holder(s). The lights shall be controlled by the following: • a switch at the driver's side switch panel. • a switch at the passenger's side switch panel. • a switch at the pump operator's panel. • no additional switch location. These light(s) may be load managed when the parking brake is applied. **12 VOLT LIGHTING** There shall be one (1) Whelen® Pioneer™, Model PFP2*, 12 volt LED floodlight(s) provided on the front visor, centered. The painted parts of this light assembly to be black. The light shall be controlled by the following: • a switch at the driver's side switch panel • a switch at the passenger's side switch panel • a switch at the pump operator's panel • no additional switch location These light(s) may be load managed when the parking brake is set.		

	Bidder Complies	
	Yes	No

DECK LIGHTS

There shall be two (2) Unity, Model AG-S-P46SLC, LED light installed at the rear of the apparatus, one each side.

Individual switches shall be provided on each light for on/off.

HOSEBED LIGHT SWITCH

Switching shall be provided for the hose bed lights and shall be installed in the cab.

MASTER SWITCH FOR Q2B SIREN

There shall be a master switch provided for the Q2B, mechanical siren at the cab instrument panel.

SWITCH, MASTER FOR CREW CAB HEATER

An On/Off master switch shall be provided for the crew cab heater on the cab instrument panel.

SWITCH, MASTER FOR CREW CAB AIR CONDITIONER

An On/Off master switch shall be provided for the crew cab air conditioner on the cab instrument panel.

WATER TANK

Booster tank shall have a capacity of 750 gallons and be constructed of polypropylene plastic by United Plastic Fabricating, Incorporated.

The tank shall be stepped in design to allow for a low hosebed.

Tank joints and seams shall be nitrogen welded inside and out.

Tank shall be baffled in accordance with NFPA Bulletin 1901 requirements.

Baffles shall have vent openings at both the top and bottom to permit movement of air and water between compartments.

Longitudinal partitions shall be constructed of .38" polypropylene plastic and shall extend from the bottom of the tank through the top cover to allow for positive welding.

Transverse partitions shall extend from 4.00" off the bottom of the tank to the underside of the top cover.

All partitions shall interlock and shall be welded to the tank bottom and sides.

Tank top shall be constructed of .50" polypropylene. It shall be recessed .38" and shall be welded to the tank sides and the longitudinal partitions.

Tank top shall be sufficiently supported to keep it rigid during fast filling conditions.

	Bidder Complies	
	Yes	No
Construction shall include 2.00" polypropylene dowels spaced no more than 30.00" apart and welded to the transverse partitions. Two (2) of the dowels shall be drilled and tapped (.50" diameter, 13.00" deep) to accommodate lifting eyes. A sump that is 8.00" long x 8.00" wide x 6.00" deep shall be provided at the bottom of the water tank. Sump shall include a drain plug and the tank outlet. Tank shall be installed in a fabricated cradle assembly constructed of structural steel. Sufficient crossmembers shall be provided to properly support bottom of tank. Crossmembers shall be constructed of steel bar channel or rectangular tubing. Tank shall "float" in cradle to avoid torsional stress caused by chassis frame flexing. Rubber cushions, .50" thick x 3.00" wide, shall be placed on all horizontal surfaces that the tank rests on. Stops or other provision shall be provided to prevent an empty tank from bouncing excessively while moving vehicle. Mounting system shall be approved by the tank manufacturer. Fill tower shall be constructed of .50" polypropylene and shall be a minimum of 8.00" wide x 14.00" long. Fill tower shall be furnished with a .25" thick polypropylene screen and a hinged cover. An overflow pipe, constructed of 4.00" schedule 40 polypropylene, shall be installed approximately halfway down the fill tower and extend through the water tank and exit to the rear of the rear axle. One (1) sleeve shall be provided in the water tank for a 3.00" pipe to the rear. **WATER TANK RESTRAINT** A heavy-duty water tank restraint shall be provided. **HOSE BED (Attached Exhibit A, pg 186)** The hose bed shall be fabricated of .125"-5052 aluminum with a nominal 38,000 psi tensile strength. The hose bed shall be as low as practical. Standard hose bed width shall be 68.00" inside. Upper and rear edges of side panels shall have a double break for rigidity, a split tube finish shall not be acceptable.		

	Bidder Complies	
	Yes	No
The upper inside area of the beavertails shall be covered with polished stainless steel to prevent damage to painted surface when hose is removed. Flooring of the hose bed shall be removable aluminum grating with the top surface corrugated to aid in hose aeration. The grating slats shall be a minimum of 0.50" x 4.50" with spacing between slats for hose ventilation. The hose bed floor shall be 64"" from the ground when the truck is fully loaded. Hose bed shall accommodate in bid 1 will be 300' of 2.50", flat lay in 2 columns, bed 2 400' of 3" , flat lay in 3 columns and bed 3 1000' of 5", flat lays in 4 columns. **HOSE BED DIVIDER - (Attached Exhibit A, pg 186)** Two (2) adjustable hosebed dividers shall be furnished for separating hose. Each divider shall be constructed of a .25" brushed aluminum sheet. Flat surfaces shall be sanded for uniform appearance, or constructed of brushed aluminum. Divider shall be fully adjustable by sliding in tracks, located at the front and rear of the hose bed. Divider shall be held in place by tightening bolts, at each end. Acorn nuts shall be installed on all bolts in the hose bed which have exposed threads. **EQUIPMENT STORAGE** A full width equipment storage rack shall be provided in the hose bed for storage of removable poly trays. The equipment storage rack shall be divided into two areas that shall be 30" I.D. on the driver side and 36.75" I.D. on the passenger side in size. A cross-divider shall be provided just behind the fill tower. The divider shall be bolted to the side sheet. **REMOVABLE HOSE TRAY(S) IN HOSE BED** There shall be two (2) removable U-shaped hose tray(s) provided inside the hose bed. Tray shall be sized approximately 29.50" wide X 11" high X 72" deep on the driver side and 36" wide X 11" high X 72" deep on the passenger side. Tray shall be fabricated of poly with two (2) hand hold cutouts on each side. Tray shall slide on stainless steel angles. Bottom of angles shall be lined with Dura-surf anti friction poly slides for ease of removal. A stop shall be provided at the front of the tray to prevent the tray from moving forward and a strap shall be supplied at the rear. Tray shall be located on the driver side and then the passenger side.		

	Bidder Complies	
	Yes	No

HOSE BED COVER

A black hose bed cover shall be furnished with shock cord hold downs along the sides of the cover. Quarter turn fasteners shall be furnished across the front of the hose bed cover. A flap shall be provided at the rear of the hose bed cover. The rear flap shall have a chain weight and two shock cord hold downs. A velcro flap shall be provided over the water fill dome so that the hose bed cover does not need to be removed to access the fill dome.

RUNNING BOARDS

Running boards shall be fabricated of .125" bright aluminum treadplate.

Each running board shall be supported by a welded 2.00" square tubing and channel assembly, which shall be bolted to the pump compartment substructure.

Running boards shall be 12.75" deep and spaced .50" away from the pump panel.

A splash guard shall be provided above the running board treadplate.

TAILBOARD

The tailboard shall also be constructed of .125" bright aluminum treadplate and spaced .50" from the body, as well as supported by a structural steel assembly.

The tailboard area shall be 16.00" deep.

The exterior side shall be flanged down and in for increased rigidity of tailboard structure.

REAR WALL, SMOOTH ALUMINUM/BODY MATERIAL

The rear facing surfaces of the center rear wall shall be smooth aluminum.

The bulkheads, the surface to the rear of the side body compartments, shall be smooth and the same material as the body.

Any inboard facing surfaces below the height of the hosebed shall be dual action finished aluminum .

TOW BAR

A tow bar shall be installed under the tailboard at center of truck.

Tow bar shall be fabricated of 1.00" CRS bar rolled into a 3.00" radius.

Tow bar assembly shall be constructed of .38" structural angle. When force is applied to the bar, it shall be transmitted to the frame rail.

	Bidder Complies	
	Yes	No
Tow bar assembly shall be designed and positioned to allow up to a 30-degree upward angled pull of 17,000 lb, or a 20,000 lb straight horizontal pull in line with the centerline of the vehicle.		
Tow bar design shall have been fully tested and evaluated using strain gauge testing and finite element analysis techniques.		
COMPARTMENTATION Body and compartments shall be fabricated of .125", 5052-H32 aluminum.		
Side compartments shall be an integral assembly with the rear fenders.		
Circular fender liners shall be provided for prevention of rust pockets and ease of maintenance.		
Compartment flooring shall be of the sweep out design with the floor higher than the compartment door lip.		
The compartment door opening shall be framed by flanging the edges in 1.75" and bending out again .75" to form an angle.		
Drip protection shall be provided above the doors by means of bright aluminum extrusion, formed bright aluminum treadplate or polished stainless steel.		
The top of the compartment shall be covered with bright aluminum treadplate rolled over the edges on the front, rear and outward side. These covers shall have the corners welded.		
Side compartment covers shall be separate from the compartment tops.		
Front facing compartment walls shall be covered with bright aluminum treadplate.		
All screws and bolts which protrude into a compartment shall have acorn nuts on the ends to prevent injury.		
UNDERBODY SUPPORT SYSTEM Due to the severe loading requirements of this pumper a method of body and compartment support suitable for the intended load shall be provided.		
The backbone of the support system shall be the chassis frame rails which is the strongest component of the chassis and is designed for sustaining maximum loads.		
The support system shall include .375" thick steel vertical angle supports bolted to the chassis frame rails with .625" diameter bolts.		
Attached to the bottom of the steel vertical angles shall be horizontal angles, with gussets welded to the vertical members, which extend to the outside edge of the body.		

	Bidder Complies	
	Yes	No
A steel frame shall be mounted on the top of these supports to create a floating substructure which shall result in a 500 lb equipment support rating per lower compartment. The floating substructure shall be separated from the horizontal members with neoprene elastomer isolators. These isolators shall reduce the natural flex stress of the chassis from being transmitted to the body. Isolators shall have a broad load range, proven viability in vehicular applications, be of a fail safe design and allow for all necessary movement in three (3) transitional and rotational modes. The neoprene isolators shall be installed in a modified V three (3)-point mounting pattern to reduce the natural flex of the chassis being transmitted to the body. A design with body compartments hanging on the chassis in an unsupported fashion shall not be acceptable. **AGGRESSIVE WALKING SURFACE** All exterior surfaces designated as stepping, standing, and walking areas shall comply with the required average slip resistance of the current NFPA standards. **LOUVERS** Louvers shall be stamped into compartment walls to provide the proper airflow inside the body compartments and to prevent water from dripping into the compartment. Where these louvers are provided, they shall be formed into the metal and not added to the compartment as a separate plate. **TESTING OF BODY DESIGN** Body structural analysis shall be fully tested. Proven engineering and test techniques such as finite element analysis, stress coating and strain gauging shall be performed with special attention given to fatigue, life and structural integrity of the cab, body and substructure. Body shall be tested while loaded to its greatest in-service weight. The criteria used during the testing procedure shall include: • Raising opposite corners of the vehicle tires 9.00" to simulate the twisting a truck may experience when driving over a curb. • Making a 90 degree turn, while driving at 20 mph to simulate aggressive driving conditions. • Driving the vehicle at 35 mph on a washboard road. • Driving the vehicle at 55 mph on a smooth road.		

	Bidder Complies	
	Yes	No

- Accelerating the vehicle fully, until reaching the approximate speed of 45 mph on rough pavement.

Evidence of actual testing techniques shall be made available upon request.

COMPARTMENTATION, DRIVER'S SIDE

A full height, vertically hinged, single door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 34.50" wide x 66.63" high x 25.88" deep in the lower 25.00" of the compartment and 12.00" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 30.00" wide x 62.00" high.

A positive door holder shall be furnished with this compartment.

A horizontally hinged, single lift-up door compartment over the rear wheels shall be provided. The interior dimensions of this compartment shall be 66.50" wide x 32.88" high x 12.00" deep. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 59.50" wide x 28.25" high.

The lift-up door shall be furnished with two (2) gas-charged cylinders to assist in the opening of the door and to maintain the door in an open position. There shall be a field adjustable, three-position bracket mounted on the vertical side door opening that shall allow the door to be held open at 87°, 90°, or 93°.

Closing of the door shall not require releasing, unlocking, or unlatching any mechanism.

A full height, vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.50" wide x 67.63" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper portion. The depth of the compartment shall be calculated with the compartment door closed. The compartment interior shall be fully open from the compartment ceiling to the compartment floor and designed so that no permanent dividers are required between the upper and lower sections. The clear door opening of this compartment shall be 46.00" wide x 63.00" high.

Positive door holders shall be furnished with this compartment.

COMPARTMENTATION, PASSENGER'S SIDE

A vertically hinged, single door compartment ahead of the rear wheels shall be provided. The interior dimensions of this compartment shall be 34.50" wide x 33.63" high x 25.88" deep in the lower 26.00" of the compartment and 12.00" deep in the remaining upper

	Bidder Complies	
	Yes	No
portion. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 30.00" wide x 29.00" high. A positive door holder shall be furnished with this compartment. A vertically hinged, double door compartment behind the rear wheels shall be provided. The interior dimensions of this compartment shall be 47.50" wide x 33.63" high x 12.00" deep. A section of this compartment shall be 25.88" deep for the first 31.50" width x 26.00" height directly behind the rear wheels. The depth of the compartment shall be calculated with the compartment door closed. The clear door opening of this compartment shall be 46.00" wide x 30.00" high. A positive door holder shall be furnished with this compartment. **DOORS, SIDE COMPARTMENT** All hinged compartment doors shall be lap style with double panel construction and shall be a minimum of 1.50" thick. To provide additional door strength a "C" section reinforcement shall be installed between the outer and interior panels. Doors shall be provided with a closed cell rubber gasket around the surface that laps onto the body. A second heavy-duty automotive rubber molding with a hollow core shall be installed on the door framing that seals onto the interior panel, to ensure a weather resisting compartment. All compartment doors shall have polished stainless steel continuous hinge with a pin diameter of .25" that is bolted or screwed on with stainless steel fasteners. (Hinges which are welded on shall not be acceptable.) All door locking mechanisms shall be fully enclosed within the door panels to prevent fouling of the lock in the event equipment inside shifts into the lock area. Doors shall be latched with recessed, polished stainless steel "D" ring handles and FMVSS approved door locking mechanisms. To prevent corrosion caused by dissimilar metals, compartment door handles shall not be attached to outer door panel with screws. A rubber gasket shall be provided between the "D" ring handle and the door. **COMPARTMENTATION, REAR** A rollup door compartment above the rear tailboard shall be provided**.** Interior dimensions of this compartment shall be 40.00" wide x 33.63" high x 25.88" deep in the lower 26.00" of the compartment and 15.75" deep in the remaining upper portion. Depth of the compartment shall be calculated with the compartment door closed.		

	Bidder Complies	
	Yes	No
For a chassis with a rear mounted fuel tank, a louvered removable access panel shall be furnished on the back wall of the compartment. Rear compartment shall be open into the rear side compartments. Clear door opening of this compartment shall be 33.25" wide x 26.00" high. Closing of the door shall not require releasing, unlocking, or unlatching any mechanism and shall easily be accomplished with one hand. **ROLLUP DOOR, REAR COMPARTMENT** There shall be a rear rollup door. The door shall be double faced aluminum construction, an anodized satin finish and manufactured by A&A Manufacturing (Gortite). Lath sections shall be an interlocking rib design and shall be individually replaceable without complete disassembly of door. Between each slat at the pivoting joint shall be a PVC inner seal to prevent metal to metal contact and prevent dirt or moisture from entering the compartments. Seals shall allow door to operate in extreme temperatures ranging from plus 180 to minus 40 degrees Fahrenheit. Side, top and bottom seals shall be provided to resist ingress of dirt and weather and be made of Santoprene. All hinges, barrel clips and end pieces shall be nylon 66. All nylon components shall withstand temperatures from plus 300 to minus 40 degrees Fahrenheit. Hardened plastic shall not be acceptable. A polished stainless steel lift bar to be provided for each roll-up door. Lift bar shall be located at the bottom of door and have latches on the outer extrusion of the doors frame. A ledge shall be supplied over lift bar for additional area to aid in closing the door. Door shall be constructed from an aluminum box section. The exterior surface of each slat shall be flat. The interior surface shall be concave to provide strength and prevent loose equipment from jamming the door from inside. To conserve space in the compartments, the spring roller assembly shall not exceed 3.00" in diameter. A garage style roll door shall not be acceptable. The header for the rollup door assembly shall not exceed 4.00". A heavy-duty magnetic switch shall be used for control of open compartment door warning lights. **DOOR GUARD** There shall be one (1) compartment door that shall include a guard/drip pan designed to protect the rollup door from damage when in the retracted position and contain any		

	Bidder Complies	
	Yes	No
water spray. The guard shall be fabricated from stainless steel and installed rear compartment.		
REVERSE HINGED DOOR The one (1) compartment door, located on the driver side front compartment D3, shall have the hinge at the rear of the door.		
DOOR FRAME SCUFFPLATE The Five (5) scuffplates shall be provided for the lower door frame(s) of the side body compartment opening. Each scuffplate shall be brushed stainless steel with a .38" lip down.		
COMPARTMENT LIGHTING There shall be six (6) compartment(s) with two (2) white 12 volt DC LED compartment light strips. The dual light strips shall be centered vertically along each side of the door framing. There shall be two (2) light strips per compartment.The dual light strips shall be in D1, D2, D3, P1, P2 and R1 compartment(s).		
Any remaining compartments without light strips shall have a 6.00" diameter Truck-Lite, Model: 79384 light. Each light shall have a number 1076 one filament, two wire bulb.		
Opening the compartment door shall automatically turn the compartment lighting on.		
ACCESS PANEL The bright aluminum treadplate flooring on the driver's side of the cargo compartment shall be hinged with quarter turn latches for access to the pump and plumbing.		
MOUNTING TRACKS There shall be four (4) sets of tracks for mounting shelf(s) in D3, D1, P1 and P2. These tracks shall be installed vertically to support the adjustable shelf(s), and shall be full height of the compartment. The tracks shall be painted to match the compartment interior.		
ADJUSTABLE SHELVES There shall be four (4) shelves with a capacity of 500 lb provided. The shelf construction shall consist of .188" aluminum with 2.00" sides. Each shelf shall be painted to match the compartment interior. Each shelf shall be infinitely adjustable by means of a threaded fastener, which slides in a track.		
The shelves shall be held in place by .12" thick stamped plated brackets and bolts.		
The location shall be (1) in upper compartment D1 flush to the bottom of the transition point, the vertical partitions will attach to the bottom of this shelf, (1) in upper compartment D3 flush to the bottom of the transition point, one in P1 and P2, refer to pictures. .		

	Bidder Complies	
	Yes	No
ADDITIONAL COMPARTMENT LOUVERS A set of additional louvers shall be provided in One centered and as high as possible in compartment D2 over the driver side rear wheel compartment and one on the front bulkhead in compt D3 above the mic/speaker box. . The quantity of additional sets of louvers is two (2).		
ADDITIONAL COMPARTMENT LOUVERS A set of louvers shall be provided in the compartments ahead and behind the rear wheels as high as possible on the water tank wall instead of the rear wheel well area. The quantity of sets of louvers is four (4). The louvers shall be located as high as possible on each compartment rear wall. The rest of the body compartments shall not have louvers.		
MATTING, COMPARTMENT SHELVING Dri-Deck rubber compartment matting shall be provided in four (4) shelves. The locations are, each adjustable shelf. The Dri-Deck shall be red, and .562" thick with holes in the decking to allow air to flow.		
MATTING, COMPARTMENT FLOOR Dri-Deck rubber compartment matting shall be provided in six (6) compartments on the compartment floor. The locations are, each body compartment. The Dri-Deck shall be red, and .562" thick with holes in the decking to allow air to flow. The leading edge of the matting shall include the beveled edge. Pac Trac equipment mounting system shall be installed on the walls of three (3) compartment(s), on the upper water tank wall of compartments D1, D2 and D3.		
PARTITION, VERTICAL COMPARTMENT Two (2) partitions shall be bolted in the lower part of compartment D3 using .25" alum with the first partition 10.75" forward of the wheel well wall and second 9.75" forward of the first divider. Refer to pictures in the "S" drive under this job number. . Each partition shall be the full vertical height of the compartment.		
RUB RAIL Bottom edge of the side and rear of the body compartments shall be trimmed with a bright aluminum extruded rub rail. Trim shall be 2.12" high with 1.38" flanges turned outward for rigidity. The rub rails shall not be an integral part of the body construction, which allows replacement in the event of damage.		

	Bidder Complies	
	Yes	No

BODY FENDER CROWNS
Stainless steel fender crowns shall be provided around the rear wheel openings.

A rubber welting shall be provided between the body and the crown to seal the seam and restrict moisture from entering.

A dielectric barrier shall be provided between the fender crown fasteners (screws) and the fender sheet metal to prevent corrosion.

HARD SUCTION HOSE
Hard suction hose shall not be required.

HANDRAILS
The handrails shall be 1.25" diameter anodized aluminum extrusion, with a ribbed design, to provide a positive gripping surface.

Chrome plated end stanchions shall support the handrail. Plastic gaskets shall be used between end stanchions and any painted surfaces.

Drain holes shall be provided in the bottom of all vertically mounted handrails.

Handrails shall be provided to meet NFPA 1901 section 15.8 requirements. The handrails shall be installed as noted on the sales drawing.

HANDRAILS
One (1) vertical handrail, not less than 29.00" long, shall be located on each rear beavertail.

One (1) horizontal knurled handrail shall be provided above the hose bed at the rear of the apparatus under the aluminum enclosure for the arrow stick.

- Two (2) handrails, 10.00" long, shall be provided mounted on the rear trailing edge of the cab roof, one each side.

AIR BOTTLE STORAGE (SINGLE)
A quantity of three (3) air bottle compartments, 7.75" in diameter x 26.00" deep, shall be provided on the driver side rearward of the rear wheels, on the passenger side forward of the rear wheels and on the passenger side rearward of the rear wheels. A polished stainless steel door with a chrome plated flush lift & turn latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting shall be provided.

	Bidder Complies	
	Yes	No

AIR BOTTLE STORAGE (DOUBLE)

A quantity of one (1) air bottle compartment, 15.25" wide x 7.75" tall x 26.00" deep, shall be provided on the driver side forward of the rear wheels . A polished stainless steel door with a Southco non-locking C2 chrome lever latch shall be provided to contain the air bottle. A dielectric barrier shall be provided between the door hinge, hinge fasteners and the body sheet metal.

Inside the compartment, black rubber matting and "W" shaped insert formed of composite materials shall be provided.

EXTENSION LADDER

There shall be a 24', two-section, aluminum, Duo-Safety, Series 900-A extension ladder provided.

ROOF LADDER

There shall be a 14' aluminum, Duo-Safety, Series 775-A roof ladder provided.

LADDER STORAGE

A compartment shall be provided above the passenger's side body compartments 173.00" long x 14.00" wide for storage of one (1) extension ladder and one (1) roof ladder.

The compartment shall be full length of the body and extend past the front of the body to fully enclose the length of the ladders.

Sides of the compartment shall be constructed of the same material as the body and painted job color. Trim molding shall be provided to cover the seam between the top of the body panel and the bottom of the hatch compartment.

Top of the compartment shall be constructed of bright aluminum treadplate.

A stainless steel door, with lift and turn latch latches, shall be provided at the rear for access to the ladders.

A polished stainless steel door, with flush mounted latches, shall be provided at the front for service access.

FOLDING LADDER

One (1) 10.00' aluminum, Series 585-A, Duo-Safety folding ladder shall be installed in a U-shaped trough inside the ladder storage compartment.

6' PIKE POLE

One (1) pike pole, Fire Hooks Unlimited, Model RH6, 6' long roof hook, with a steel handle and chisel end shall be provided and located in the ladder compartment.

	Bidder Complies	
	Yes	No
PIKE POLE, 8' Two (2) pike poles, 8' long DUO Safety with a fiberglass handle, shall be provided and located in the ladder compartment. **PIKE POLE, 6'** One (1) pike pole, 6' long DUO Safety with a fiberglass handle, shall be provided and located in the ladder compartment. **PIKE POLE STORAGE** Aluminum tubing shall be used for the storage of four (4) pike poles and shall be located in ladder storage compartment. If the head of a pike pole can come in contact with a painted surface, a stainless steel scuffplate shall be provided. **BELL** A chrome plated, 12.00" bronze cast bell, complete with an eagle, shall be mounted on the driver's side of the front bumper extension. A rope pull, for the bell, shall be installed inside the cab. **REAR FOLDING STEPS** Bright finished, non-skid folding steps with a luminescent coating that is rechargeable from any light source and can hold a charge for up to 24 hours shall be provided at the rear. The steps can be used as a hand hold with two openings wide enough for a gloved hand. One (1) additional folding step shall be located on the driver's side exterior back wall of crew cab. The step(s) shall be bright finished, non-skid with a luminescent coating that is rechargeable from any light source and can hold a charge for up to 24 hours. The step(s) can be used as a hand hold with two openings wide enough for a gloved hand. Three (3) additional folding steps shall be located on the passenger side, exterior back wall of crew cab. The step(s) shall be bright finished, non-skid with a luminescent coating that is rechargeable from any light source and can hold a charge for up to 24 hours. The step(s) can be used as a hand hold with two openings wide enough for a gloved hand. **PUMP** Pump shall be a Waterous CSU, 2000 gpm single (1) stage midship mounted centrifugal type. Pump shall be the class "A" type. Pump shall deliver the percentage of rated discharge at pressures indicated below: - 100% of rated capacity at 150 psi net pump pressure. -70% of rated capacity at 200 psi net pump pressure.		

	Bidder Complies	
	Yes	No
-50% of rated capacity at 250 psi net pump pressure. Pump body shall be close-grained gray iron, bronze fitted, and horizontally split in two (2) sections for easy removal of the entire impeller shaft assembly (including wear rings). Pump shall be designed for complete servicing from the bottom of the truck, without disturbing the pump setting or apparatus piping. Pump case halves shall be bolted together on a single horizontal face to minimize a chance of leakage and facilitate ease of reassembly. No end flanges shall be used. Discharge manifold of the pump shall be cast as an integral part of the pump body assembly and shall provide a minimum of three (3) 3.50" openings for flexibility in providing various discharge outlets for maximum efficiency. The three (3) 3.50" openings shall be located as follows: one (1) outlet to the right of the pump, one (1) outlet to the left of the pump, and one (1) outlet directly on top of the discharge manifold. Impeller shaft shall be stainless steel, accurately ground to size. It shall be supported at each end by sealed, anti-friction ball bearings for rigid precise support. Impeller shall have flame plated hubs assuring maximum pump life and efficiency despite any presence of abrasive matter in the water supply. Bearings shall be protected from water and sediment by suitable stuffing boxes, flinger rings, and oil seals. No special or sleeve type bearings shall be used. Pump shall be equipped with a self-adjusting, maintenance-free, mechanical shaft seal. The mechanical seal shall consist of a flat, highly polished, spring fed carbon ring that rotates with the impeller shaft. The carbon ring shall press against a highly polished stainless steel stationary ring that is sealed within the pump body. In addition, a throttling ring shall be pressed into the steel chamber cover, providing a very small clearance around the rotating shaft in the event of a mechanical seal failure. The pump performance shall not deteriorate, nor shall the pump lose prime, while drafting if the seal fails during pump operation. Wear rings shall be bronze and easily replaceable to restore original pump efficiency and eliminate the need to replace the entire pump casing due to wear. **PUMP TRANSMISSION** Pump transmission shall be made of a three (3) piece, aluminum, horizontally split casing. Power transfer to pump shall be through a high strength Morse HY-VO silent drive chain.		

	Bidder Complies	
	Yes	No
Drive shafts shall be a minimum of 2.35" diameter hardened and ground alloy steel. All shafts shall be ball bearing supported. The case shall be designed as to eliminate the need for water cooling. **AIR PUMP SHIFT** Pump shift engagement shall be made by a two (2) position sliding collar, actuated pneumatically (by air pressure), with a three (3) position air control switch located in the cab. A manual back-up shift control shall also be located on the pump operator's pump panel. Two (2) indicator lights shall be provided adjacent to the pump shift inside the cab. One (1) green light shall indicate the pump shift has been completed and be labeled "pump engaged". The second green light shall indicate when the pump has been engaged, and that the chassis transmission is in pump gear. This indicator light shall be labeled "OK to pump". Another green indicator light shall be installed adjacent to the hand throttle on the pump panel and indicate either the pump is engaged and the road transmission is in pump gear, or the road transmission is in neutral and the pump is not engaged. This indicator light shall be labeled "Warning: Do not open throttle unless light is on". The pump shift control in the cab shall be illuminated to meet NFPA requirements. **TRANSMISSION LOCK-UP** The direct gear transmission lock-up for the fire pump operation shall engage automatically when the pump shift control in the cab is activated. **AUXILIARY COOLING SYSTEM** A supplementary heat exchange cooling system shall be provided to allow the use of water from the discharge side of the pump for cooling the engine water. Heat exchanger shall be cylindrical type and shall be a separate unit. It shall be installed in the pump or engine compartment with the control located on the pump operator's control panel. Exchanger shall be plumbed to the master drain valve. **INTAKE RELIEF VALVE** An Elkhart relief valve shall be installed on the suction side of the pump preset at 125 psig. Relief valve shall have a working range of 75 psig to 250 psig. Outlet shall terminate below the frame rails with a 2.50" National Standard hose thread adapter and shall have a "do not cap" warning tag. Control shall be located behind an access door at a side pump panel.		

	Bidder Complies	
	Yes	No
PRESSURE CONTROLLER A Pierce Pressure Governor shall be provided. An electric pressure governor shall be provided which is capable of automatically maintaining a desired preset discharge pressure in the water pump. When operating in the pressure control mode, the system shall automatically maintain the discharge pressure set by the operator (within the discharge capabilities of the pump and water supply) regardless of flow, within the discharge capacities of the water pump and water supply. A pressure transducer shall be installed in the water discharge of the pump. The transducer continuously monitors pump pressure sending a signal to the Electronic Control Module (ECM). The governor can be used in two (2) modes of operation, RPM mode and pressure modes. In the RPM mode, the governor can be activated after vehicle parking brake has been set.When in this mode, the governor shall maintain the set engine speed, regardless of engine load (within engine operation capabilities). In the pressure mode, the governor system can only operate after the fire pump has been engaged and the vehicle parking brake has been set. When in the pressure mode, the pressure controller monitors the pump pressure and varies engine speed to maintain a precise pump pressure. The pressure controller shall use a quicker reacting J1939 database for engine control. A preset feature allows a predetermined pressure or rpm to be set. A pump cavitation protection feature is also provided which shall return the engine to idle should the pump cavitate. Cavitation is sensed by the combination of pump pressure below 30 psi and engine speed above 2000 rpm for more than five (5) seconds. The throttle shall be a vernier style control, with a large control knob for use with a gloved hand. A throttle ready light shall be provided adjacent to the throttle control. A large 0.75" RPM display shall be provided to be visible at a glance. Check engine, and stop engine indicator lights shall be provided for easy viewing. Large 0.75" push buttons shall be provided for menu, mode, preset, and silence selections. The water tank level indicator shall be incorporated in the pressure governor. A fuel level indicator shall be incorporated in the pressure controller.		

	Bidder Complies	
	Yes	No
A pump hour meter shall be incorporated in the pressure controller. The pressure controller shall incorporate monitoring for engine temperature, oil pressure, fuel level alarm, and voltage. Pump monitoring shall include, pump gearcase temperature, error codes, diagnostic data, pump service reminders, and time stamped data logging, to allow for fast accurate trouble shooting. It shall also notify the driver/engineer of any problems with the engine and the apparatus. Complete understandable messages shall be provided in a 20-character display, providing for fewer abbreviations in the messages. An automatic dim feature shall be included for night operations. The pressure controller shall include a USB port for easy software upgrades, which can be downloaded through a USB memory stick, eliminating the need for a laptop for software installations. A complete interactive manual shall be provided with the pressure controller. **PRIMER SYSTEM** A Waterous electric pump priming system conforming to standards outlined in the current edition of NFPA 1901 shall be furnished with the apparatus. One (1) VPO electric motor driven rotary vane primer shall be provided. One (1) VAP vacuum activated priming valve shall be plumbed to the main pump. One (1) momentary push-button control shall be located at the pump operator's panel. The push button control system control shall operate an electric priming motor and the priming valve shall automatically open during priming and close when the primer is deactivated. **THERMAL RELIEF VALVE** A Waterous Overheat Protection Manager (OPM) shall be included on the pump that monitors pump water temperature and opens to relieve water to cool the pump when the temperature of the pump water exceeds 140 Degrees F (60 C) and a red warning light that is triggered when the water in the pump reaches 180 F (82 C). The warning light shall act as an additional protection device if the temperature in the pump keeps rising after the valve opens. The warning light and alarm with a test switch shall be mounted on the pump operator panel. The discharge line shall be plumbed to ground near pump operator's panel.		

	Bidder Complies	
	Yes	No

PUMP MANUALS

There shall be a total of two (2) pump manuals provided by the pump manufacturer and furnished with the apparatus. The manuals shall be provided by the pump manufacturer in the form of two (2) CDs. Each manual shall cover pump operation, maintenance, and parts.

PUMP TEST

The water pump shall be 2,000 gpm capacity rated at 1,500 gpm. There shall be two (2) sets of pump manufacturers certificates furnished with the unit, reflecting the two (2) ratings. The pump panel tags and the third party test shall reflect the lower rating.

The pump shall be tested, approved and certified by an independent third party testing agency at the manufacturer's expense. The test results along with the pump manufacturer's certification of hydrostatic test, the engine manufacturer's certified brake horsepower curve and the manufacturer's record of pump construction details shall be forwarded to the Fire Department

PLUMBING

All inlet and outlet plumbing, 3.00" and smaller, shall be plumbed with either stainless steel pipe or synthetic rubber hose reinforced with high-tensile polyester braid. Small diameter secondary plumbing such as drain lines shall be stainless steel, brass or hose.

Where vibration or chassis flexing may damage or loosen piping or where a coupling is required for servicing, the piping shall be equipped with victaulic or rubber couplings.

Plumbing manifold bodies shall be ductile cast iron or stainless steel.

All lines shall drain through a master drain valve or shall be equipped with individual drain valves. All individual drain lines for discharges shall be extended with a hose to drain below the chassis frame.

All water carrying gauge lines shall be of flexible polypropylene tubing.

MAIN PUMP INLETS

A 6.00" pump manifold inlet shall be provided on each side of the vehicle. The suction inlets shall include removable die cast zinc screens that are designed to provide cathodic protection for the pump, thus reducing corrosion in the pump.

MAIN PUMP INLET CAP

The main pump inlets shall have National Standard Threads with a long handle chrome cap.

The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

	Bidder Complies	
	Yes	No
INLET VALVES WITH INTAKE RELIEF VALVE Two (2) butterfly valves Task Force Tips Model AB1 ST-NX ball intake valve shall be installed on the both the driver's side and the passenger's side main pump inlets main pump inlets. The valves shall be located outside the pump panel. The intake valve shall have a 5.00" storz connection by 6.00" female NST swivel. Valves shall be manually actuated, with a handwheel. The valve shall include an adjustable relief valve. **PUMP SUCTION TUBE** Pump suction tubes on the mid-ship pump shall extend approximately 4.50" past the side pump panel. **VALVES** All ball valves shall be Akron® Brass in-line valves. The Akron valves shall be the 8000 series heavy-duty style with a stainless steel ball and a simple two-seat design. No lubrication or regular maintenance is required on the valve. Valves shall have a **ten (10) year** warranty. **LEFT SIDE INLET** On the left side pump panel shall be one (1) - 2.50" auxiliary inlet, terminating in 2.50" National Standard Hose Thread. The auxiliary inlet shall be provided with a strainer, chrome swivel and plug. **RIGHT SIDE INLET** On the right side pump panel shall be one (1) - 2.50" auxiliary inlet, terminating in 2.50" National Standard Hose Thread. The auxiliary inlet shall be provided with a strainer, chrome swivel and plug. The location of the valve for the two (2) inlets shall be recessed behind the pump panel. **INLET CONTROL** Control for the side auxiliary inlet(s) shall be located at the inlet valve. **FRONT INLET** A 6.00" inlet front inlet with die cast zinc screens shall be provided using 5.00" welded black iron pipe and a 5.00" butterfly valve. Only radiused elbows shall be used in the piping, no mitered joints. Drains are furnished in all the low points of piping and have .75" valves with swing handle. A bleeder valve shall be located at the threaded connection.		

	Bidder Complies	
	Yes	No
The front suction shall be located on the passenger side of the bumper extension. **FRONT INLET CONTROL** The front suction shall be an electrically operated valve with an electric control at the pump operator's panel. The valve shall be electrically operated and an electric actuator with a Waterous seven (7) valve position LED indicator lights shall be provided at the pump operator's panel. The electric actuator shall be furnished with manual override. **INTAKE RELIEF VALVE** An intake relief valve, preset at 125 psig, shall be installed on the inlet side of the valve. Relief valve shall have a working range of 75 psig to 250 psig. Outlet shall terminate below the frame rails. **FRONT INLET CAP** The front inlet shall have National Standard hose threads with a long handle chrome plated cap. The cap shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception). The front suction shall have a chromed 6.00" swivel with National Standard hose threads and a long handle chromed plated cap. The swivel shall have a smooth surface chrome finish. **INLET BLEEDER VALVE** A 0.75" bleeder valve shall be provided for each side gated inlet. The valves shall be located behind the panel with a swing style handle control extended to the outside of the panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. The water discharged by the bleeders shall be routed below the chassis frame rails. **TANK TO PUMP** The booster tank shall be connected to the intake side of the pump with 4.00" heavy-duty piping and an Akron 4.00" ball valve with the handwheel control remotely located at the operator's panel. Tank to pump line shall run straight (no elbows) from the pump into the front face of the water tank and down into the tank sump. A rubber coupling shall be included in this line to prevent damage from vibration or chassis flexing. An indicator shall be provided to show when the valve is closed.		

	Bidder Complies	
	Yes	No
A check valve shall be provided in the tank to pump supply line to prevent the possibility of "back filling" the water tank. **TANK REFILL** A 2.00" combination tank refill and pump re-circulation line shall be provided, using a quarter-turn full flow ball valve controlled from the pump operator's panel. **LEFT SIDE DISCHARGE OUTLETS** There shall be one (1) discharge outlet with a 2.50" valve on the left side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter. **RIGHT SIDE DISCHARGE OUTLETS** There shall be two (2) discharge outlets with a 2.50" valve on the right side of the apparatus, terminating with a 2.50" (M) National Standard hose thread adapter. **FRONT DISCHARGE OUTLET** There shall be one (1) 1.50" discharge outlet piped to the front of the apparatus and located in the center bumper tray. Plumbing shall consist of 2.00" piping and flexible hose with a 2.00" ball valve with control at the pump operator's panel. A fabricated weldment made of stainless steel pipe shall be used in the plumbing where appropriate. The piping shall terminate with a 1.50" NST chrome adapter. There shall be Class 1 automatic drains provided at all low points of the piping. **REAR DISCHARGE OUTLET** There shall be one (1) discharge outlet piped to the rear of the hose bed, passenger's side, installed so proper clearance is provided for spanner wrenches or adapters. Plumbing shall consist of 4.00" piping along with a 4.00" full flow ball valve with the control from the pump operator panel. Piping shall be moved approximately 4.00" back from the standard outlet location to allow for proper hose clearance from the full depth lower extended rear. **DISCHARGE OUTLET (REAR)** There shall be one (1) discharge outlet piped to the rear of the hose bed. driver side Proper clearance shall be provided for spanner wrenches or adapters. Plumbing shall consist of 3.00" piping along with a 3.00" full flow ball valve with the control from the pump operator's panel. The one (1) discharge outlet shall terminate with a 2.50" male National Standard hose thread male adapter. **DISCHARGE CAPS** Chrome plated, rocker lug, caps with chains shall be furnished for all side discharge outlets.		

	Bidder Complies	
	Yes	No

The caps shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

OUTLET BLEEDER VALVE

A 0.75" bleeder valve shall be provided for each outlet 1.50" or larger. Automatic drain valves are acceptable with some outlets if deemed appropriate with the application.

The valves shall be located behind the panel with a swing style handle control extended to the outside of the side pump panel. The handles shall be chrome plated and provide a visual indication of valve position. The swing handle shall provide an ergonomic position for operating the valve without twisting the wrist and provides excellent leverage. Bleeders shall be located at the bottom of the pump panel. They shall be properly labeled identifying the discharge they are plumbed in to. The water discharged by the bleeders shall be routed below the chassis frame rails.

LEFT SIDE OUTLET ELBOWS

The 2.50" discharge outlets, located on the left side pump panel, shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 30 degree elbow.

The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

RIGHT SIDE OUTLET ELBOWS

The 2.50" discharge outlets, located on the right side pump panel, shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread, chrome plated, 30 degree elbow.

The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

REAR OUTLET ELBOWS

The rear 4.00" outlet shall be furnished with a 4.00" (F) National Standard hose thread x 5.00" Storz elbow adapter with Storz cap with cable retainer.

Elbows shall be provided for one (1) discharge outlet.

ADDITIONAL REAR OUTLET ELBOWS

The 2.50" discharge outlets, located at the rear of the apparatus, shall be furnished with a 2.50" (F) National Standard hose thread x 2.50" (M) National Standard hose thread chrome plated, 30 degree elbow.

The elbow shall incorporate a thread design to automatically relieve stored pressure in the line when disconnected (no exception).

	Bidder Complies	
	Yes	No

REDUCER

There shall be five (5) adapters with 2.50" FNST x 1.50" MNST threads and a 1.50" chrome plated cap installed on all the 2.5" discharges.

DISCHARGE OUTLET CONTROLS

The discharge outlets shall incorporate a quarter-turn ball valve with the control located at the pump operator's panel. The valve operating mechanism shall indicate the position of the valve.

If a handwheel control valve is used, the control shall be a minimum of a 3.9" diameter stainless steel handwheel with a dial position indicator built in to the center of the handwheel.

DELUGE RISER

A 3.00" deluge riser shall be installed above the pump with a "T" handle control in such a manner that a monitor can be mounted and used effectively. Piping shall be installed securely so no movement develops when the line is charged. The riser shall be gated and controlled at the pump operator's panel. This outlet shall have two (2) supply lines teed together to allow proper water flow in the water only operation and the water/foam operation. The water only piping shall consist of a 3.00" ball valve. The water/foam piping shall include a 2.50" ball valve and it shall be plumbed into the foam system.

TELESCOPIC PIPING

The deluge riser piping shall include a 18.00" Task Force Model XG18 Extend-A-Gun extension.

This extension shall be telescopic to allow the deluge gun to be raised 18.00" increasing the range of operation.

A position sensor shall be provided on the telescopic piping that shall activate the "do not move vehicle" light inside the cab when the monitor is in the raised position.

MONITOR

A Task Force Crossfire #XFT-NJ monitor with Task Force Safe-TAK base # XFH-2NJ shall be provided. This monitor shall be painted to match the body.

NOZZLE, DELUGE

Task Force Tips Model MST-4NJ quad stacked tips and a TFT XF-SS10 stream shaper shall be provided.

The deluge extension shall have a Task Force, Model XFF-APL, truck mount adapter for mounting the monitor.

	Bidder Complies	
	Yes	No

CROSSLAY HOSE BEDS

Two (2) crosslays with 1.50" outlets shall be provided. Each bed to be capable of carrying 200' of 1.75" double jacketed hose and shall be plumbed with 2.00" i.d. pipe and gated with a 2.00" quarter turn ball valve.

Outlets to be equipped with a 1.50" National Standard hose thread 90 degree swivel located in the hose bed so that hose may be removed from either side of apparatus.

The crosslay controls shall be at the pump operator's panel.

The center crosslay dividers shall be fabricated of 0.25" aluminum and shall provide adjustment from side to side. The divider shall be unpainted with a brushed finish.

Vertical scuffplates,constructed of stainless steel shall be provided at the front and rear ends of the bed on each side of vehicle.

Crosslay bed flooring shall consist of removable perforated brushed aluminum.

CROSSLAY/SPEEDLAY HOSE RESTRAINT

A heavy black nylon webbing made of 1.00" nylon strap with a 2.00" box pattern netting shall be provided on the ends of crosslay(s) to secure the hose during travel. A strap with 1.00" side release shall be located on each end above the crosslay(s) to secure the hose during travel.

The webbed netting shall be in a one (1)-piece section. A driver side flap, passenger side flap and a top flap. The flaps shall be fastened with 1.00" side release on all sides.

CROSSLAY 8.00" LOWER THAN STANDARD

The crosslays shall be lowered 8.00" from standard.

FOAM PROPORTIONER

A foam proportioning system shall be provided that is an on demand, automatic proportioning, single point, direct injection system suitable for all types of Class A and B foam concentrates, including the high viscosity (6000 cps), alcohol resistant Class B foams. Operation shall be based on direct measurement of water flow, and remain consistent within the specified flows and pressures. The system shall automatically balance and proportion foam solution at rates from .1 percent to 9.9 percent regardless of variations in water pressure and flow, up to the maximum rated capacity of the foam concentrate pump.

The design of the system shall allow operation from draft, hydrant, or relay operation. This shall provide a versatile system to meet the demands at a fire scene.

	Bidder Complies	
	Yes	No

SYSTEM CAPACITY

The system shall have the ability to deliver the following minimum foam solution flow rates that meet or exceed NFPA requirements at a pump rating of 250 psi.

200 gpm @ 6 percent

400 gpm @ 3 percent

1200 gpm @ 1 percent

The foam concentrate setting may be adjusted in .1 percent increments from .1 percent to 9.9 percent. Typical settings are .3 percent, .5 percent and 1.0 percent (The maximum capacity will be limited to the plumbing and water pump capacity).

CONTROL SYSTEM

The system shall be equipped with a digital electronic control display located on the pump operators panel. Push button controls shall be integrated into the panel to turn the system on/off, control the foam percentage, direct which foam to use on a multi-tank system, and to set the operation modes (automatic, manual, draft, calibration, or flush).

The percent of injection shall have presets for Class A or Class B foam. These presets can be changed at the fire department as desired. The percent of injection shall be able to be easily changed at the scene to adjust to changing demands.

In order to minimize the use of abbreviations and interpretations, system information shall be displayed on the panel by way of .50 tall LEDs that total 14 characters (two (2) lines of seven (7) each). System on and foam pump on indicator lights shall also be included. Information displayed shall include mode of operation (automatic, manual, draft, calibration, or flush), foam supply selected (Class A or Class B), water total, foam total, foam percentage, remaining gallons, and time remaining.

The control display shall direct a microprocessor, which receives input from the systems water flow meter while also monitoring the position of the foam concentrate pump. The microprocessor shall compare the values of the water flow versus the position/rate of the foam pump, to ensure the proportion rate is accurate. One (1) check valve shall be installed in the plumbing to prevent foam from contaminating the water pump.

LOW LEVEL,FOAM TANK

The control head shall display a warning message when the foam tank in use is below a quarter tank.

	Bidder Complies	
	Yes	No
HYDRAULIC DRIVE SYSTEM The foam concentrate pump shall be powered by a hydraulic drive system, which is automatically activated, whenever the vehicle water pump is engaged. A system that drives the foam pump via an electric motor shall not be acceptable. A large parasitic electric load used to power the foam pump can cause an overload of the chassis electrical system. Hydraulic oil cooler shall be provided to automatically prevent overheating of the hydraulic oil, which is detrimental to system components. The oil/water cooler shall be designed to allow continuous system operation without allowing hydraulic oil temperature to exceed the oil specifications. The hydraulic oil reservoir shall be of four (4) gallons minimum capacity and shall also be of sufficient size to minimize foaming and be located to facilitate checking oil level or adding oil without spillage or the need to remove access panels. **FOAM CONCENTRATE PUMP** The foam concentrate pump shall be of positive displacement, self-priming; linear actuated design, driven by the hydraulic motor. The pump shall be constructed of brass body; chrome plated stainless steel shaft, with a stainless steel piston. In order to increase longevity of the pump, no aluminum shall be present in its construction. A relief system shall be provided which is designed to protect the drive system components and prevent over pressuring the foam concentrate pump The foam concentrate pump shall have minimum capacity for 12 gpm with all types of foam concentrates with a viscosity at or below 6000 cps including protein, fluoroprotein, AFFF, FFFP, or AR-AFFF. The system shall deliver only the amount of foam concentrate flow required, without recirculating foam back to the storage tank. Recirculating foam concentrate back to the storage tank can cause agitation and premature foaming of the concentrate, which can result in system failure. The foam concentrate pump shall be self-priming and have the ability to draw foam concentrate from external supplies such as drums or pails. **EXTERNAL FOAM CONCENTRATE CONNECTION** An external foam pick-up shall be provided to enable use of a foam agent that is not stored on the vehicle. The external foam pick-up shall be designed to allow continued operation after the on-board foam tank is empty. The external foam pick-up shall be designed to allow use with training foam or colored water for training purposes. **PANEL MOUNTED STRAINER / EXTERNAL PICK-UP CONNECTION** A bronze body strainer / connector unit shall be provided. The unit shall be mounted to the pump panel. The external foam pick-up shall be one (1) 1.00" male connection with chrome-plated cap integrated to a 2.00" strainer cleanout cap.		

	Bidder Complies	
	Yes	No
A check valve shall be installed in the pick-up portion of the cleanout cap. A basket style stainless steel screen shall be installed in the body of the strainer / connector unit. Removal of the 2.00" cleanout cap shall be all that is required to gain access to and remove the stainless steel basket screen. The strainer / connector unit shall be ahead of the foam concentrate pump inlet port to insure that all agents reaching the foam pump has been strained.		
PICK-UP HOSE A 1.00" flexible hose with an end for insertion into foam containers shall be provided. The hose shall be supplied with a 1.00" female swivel NST thread swivel connector. The hose shall be shipped loose.		
DISCHARGES The foam system shall be plumbed to five (5) discharges. The discharges capable of dispensing foam shall be the 2 crosslays, front bumper, rear 2.5" and the deluge gun.		
SYSTEM ELECTRICAL LOAD The foam proportioning shall not impose an electrical load on the vehicle electrical system any greater than five (5) amps at 12VDC.		
FOAM SUPPLY VALVE An electric valve shall be used for the foam supply valve. The foam supply valve shall be controlled at the foam system control head for ease of operation. The supply valve shall be electric, remote controlled, to eliminate air pockets in the foam tank supply hose.		
MAINTENANCE MESSAGE A message shall be displayed on the control head to advise when system maintenance needs to be performed. The message shall display interval for cleaning the foam strainer, cleaning for the water strainers, and changing the hydraulic oil.		
FLUSH SYSTEM The system shall be designed such that a flush mode shall be provided to allow the system to flush all foam concentrate with clear water. The flush circuit control logic shall ensure the foam tank supply valve is closed prior to opening the flush valve. The flush valve shall be operated at the foam system control head for ease of operation. The valve shall be electrically controlled and located as close to the foam tank supply valve as possible. A manual flush drain valve shall be labeled and located under the driver's side running board.		
SINGLE FOAM TANK REFILL The foam system's proportioning pump shall be used to fill the Class A foam tank. This shall allow use of the auxiliary foam pick-up to pump the foam from pails or a drum on the ground into the foam tank. A foam shut-off switch shall be installed in the fill dome of the tank to shut the system down when the tank is full.		

	Bidder Complies	
	Yes	No

The fill operation shall be controlled by a mode in the foam system controller stating TANK FILL. While the proportioner pump is filling the tank, the controller shall display FILL TANK. When the tank is full, as determined by the float switch in the tank dome, the pump shall stop and the controller shall display TANK FULL.

FOAM SYSTEM TRAINING

The fire department shall order one (1) vehicle with this foam system. A demonstration shall be provided at the apparatus manufacturers facility on the operation of the foam system.

This demonstration shall include:

- A review of the foam system manual emphasizing key areas

- A walk around review of the system components on the finished truck

- A hands-on foam system start-up and foam discharge session

- Instructions on the use of the manual overrides

- The proper way to shut down and flush the foam system.

FOAM TANK

The foam tank shall be an integral portion of the polypropylene water tank. The cell shall have a capacity of 25 gallons of foam with the intended use of Class A foam. The foam cell shall not reduce the capacity of the water tank.The foam cell shall have a screen in the fill dome and a breather in the lid.

FOAM TANK DRAIN

A system of 1.00" foam tank drains shall be provided, integrated into the foam systems strainer and tank to foam pump valve management system.The tank to pump hoses running from the tank(s) to the panel mounted strainer shall 1.00" diameter.The foam system controller shall have a mode that allows for a given foam valve to be opened at will. Flow of foam from the tank valve to the strainer shall be usable as a tank drain mode.

An adaptor shall be supplied, that allows the 1.00" foam intake screen to assembly to be used as a drain outlet. The standard supplied 1.00" foam pick up hose shall be attached to the screen assembly by way of the adapter. The drain mode shall allow the operator to open and close the tank valve as required from the control head, to drain foam and re-fill foam containers through the connected hose, without foam spillage beneath the vehicle.

PUMP COMPARTMENT

The pump compartment shall be separate from the hose body and compartments so that each may flex independently of the other. It shall be a fabricated assembly of steel

	Bidder Complies	
	Yes	No
tubing, angles and channels which supports both the fire pump and the side running boards. The pump compartment shall be mounted on the chassis frame rails with rubber biscuits in a four point pattern to allow for chassis frame twist. Pump compartment, pump, plumbing and gauge panels shall be removable from the chassis in a single assembly. **PUMP MOUNTING** Pump shall be mounted to a substructure which shall be mounted to the chassis frame rail using rubber isolators. The mounting shall allow chassis frame rails to flex independently without damage to the fire pump. **LEFT SIDE PUMP CONTROL PANELS** All pump controls and gauges shall be located at the left (driver's) side of the apparatus and properly identified. Layout of the pump control panel shall be ergonomically efficient and systematically organized. The pump operator's control panel shall be removable in two (2) main sections for ease of maintenance: The upper section shall contain sub panels for the mounting of the pump pressure control device, engine monitoring gauges, electrical switches, and foam controls (if applicable). Sub panels shall be removable from the face of the pump panel for ease of maintenance. Below the sub panels shall be located all valve controls and line pressure gauges. The lower section of the panel shall contain all inlets, outlets, and drains. All push/pull valve controls shall have 1/4 turn locking control rods with polished chrome plated zinc tee handles. Guides for the push/pull control rods shall be chrome plated zinc castings securely mounted to the pump panel. Push/pull valve controls shall be capable of locking in any position. The control rods shall pull straight out of the panel and shall be equipped with universal joints to eliminate binding. **IDENTIFICATION TAGS** The identification tag for each valve control shall be recessed in the face of the tee handle. All discharge outlets shall have color coded identification tags, with each discharge having its own unique color. Color coding shall include the labeling of the outlet and the drain for each corresponding discharge.		

	Bidder Complies	
	Yes	No
All line pressure gauges shall be mounted directly above the corresponding discharge control tee handles and recessed within the same chrome plated casting as the rod guide for quick identification. The gauge and rod guide casting shall be removable from the face of the pump panel for ease of maintenance. The casting shall be color coded to correspond with the discharge identification tag. All remaining identification tags shall be mounted on the pump panel in chrome plated bezels. The pump panel on the right (passenger's) side shall be removable with lift and turn type fasteners. Trim rings shall be installed around all inlets and outlets. The trim rings for the side discharge outlets shall be color coded and labeled to correspond with the discharge identification tag. **PUMP PANEL CONFIGURATION** The driver side and passenger side pump panel configurations shall match those on 22543 . Option differences may be evident and an identical match is not possible. An as close as possible similarity shall be the intent. **PUMP AND GAUGE PANEL** The pump and gauge panels shall be constructed of stainless steel with a brushed finish. A polished aluminum trim molding shall be provided on both sides of the pump panel. The passenger's side pump panel shall be removable and fastened with swell type fasteners. **PUMP COMPARTMENT LIGHT** There shall be two (2) Whelen®, Model 3SC0CDCR, 3.00" white 12 volt DC LED light(s) with Whelen, Model 3FLANGEC, flange(s) installed in the pump compartment. There shall be a switch accessible through a door on the pump panel included with this installation. **PUMP PANEL GAUGES AND CONTROLS** The following shall be provided on the pump and gauge panels in a neat and orderly fashion. These gauges shall be in addition to what is provided with the pressure controller.		

	Bidder Complies	
	Yes	No
- Engine Oil Pressure Gauge: With visual and audible warning - Engine Water Temperature Gauge: With visual and audible warning - Tachometer: Electric - Master Pump Drain Control - Voltmeter **ALUMINUM HEAT ENCLOSURE** A heat enclosure shall be installed, trapping hot air radiated from the engine exhaust system, which shall warm the fire pump. The enclosure shall consist of an aluminum understructure, with easily removable aluminum panels. Also a covering above the plumbing shall be provided, so warm air cannot escape freely. **LABEL WORDING** one (1) labels shall be installed on the pump panel. The label shall be worded as follows; TANK-TO-PUMP. **COLOR CODED NAME TAGS** There shall be two (2) outlet discharges with special color coded name tags. These tags shall be used for labeling the discharge pressure gauges, controls, outlets and drains. #1 crosslay - yellow, #2 crosslay - orange, front discharge - purple, deluge - burgundy, DS rear discharge - brown, PS rear LDH - gray, #2 PS discharge - white, #3 DS discharge - blue & #4 PS discharge - mint green . **GAUGES, VACUUM AND PRESSURE** The pump vacuum and pressure gauges shall be silicone filled and manufactured by Class 1, Inc. The gauges shall be a minimum of 6.00" in diameter. The pump vacuum gauge shall have a black face with white letters and a range of 30.00"-0-400#. The pressure gauge shall have a white face with black letters and a range of 0-400#. The pump pressure and vacuum gauges shall be installed adjacent to each other at the pump operator's control panel. Test port connections shall be provided at the pump operator's panel. One shall be connected to the intake side of the pump, and the other to the discharge manifold of the		

	Bidder Complies	
	Yes	No
pump. They shall have 0.25 in. Standard pipe thread connections and polished stainless steel plugs. They shall be marked with a label. **PRESSURE GAUGES** The individual "line" pressure gauges for the discharges shall be interlube filled and manufactured by Class 1©. The gauges shall be a minimum of 3.00" in diameter and shall have white faces with black markings. Gauge construction shall include a Zytel nylon case with adhesive mounting gasket and threaded retaining nut. Gauges shall have a pressure rating of 0-400 psi. The individual pressure gauge shall be installed as close to the outlet control as practical. This gauge shall include a 10 year warranty against leakage, pointer defect, and defective bourdon tube. **WATER LEVEL GAUGE** An electric water level gauge shall be incorporated in the pressure controller that registers water level by means of 9 LEDs. They shall be at 1/8 level increments with a tank empty LED. The LEDs shall be a bright type that is readable in sunlight, and have a full 180-degree of clear viewing. To further alert the pump operator, the gauge shall have a warning flash when the tank volume is less than 25%, and shall have "Down Chasing LEDs when the tank is almost empty. The level measurement shall be ascertained by sensing the head pressure of the fluid in the tank or cell. **WATER LEVEL GAUGE** There shall be three (3) additional water level indicator, Whelen®, Model PSTANK, LED module installed one (1) each side rearward of crew cab doors and one (1) on rear body bulkhead. This light module shall include four (4) colored levels, and function similar to the water level indicator located at the operators panel:		

	Bidder Complies	
	Yes	No

- First green module indicates a full water level
- Second blue module indicates a water level above 3/4 full
- Third amber module indicates a water level above 1/2 full
- Last red module indicates a water level above 1/4 full and empty
    - Above 1/4 this light shall be steady burning
    - At empty this light shall be flashing

This module shall be activated when the pump is in gear.

FOAM LEVEL GAUGE

An electronic foam level gauge shall be provided on the operator's panel that registers foam level by means of five (5) colored LED lights. The lights shall be durable, ultra-bright five (5) LED design viewable through 180 degrees. The foam level indicators shall be as follows:

- 100 percent = Green
- 75 percent = Yellow
- 50 percent = Yellow
- 25 percent = Yellow
- Refill = Red

The light shall flash when the level drops below the given level indicator to provide an eighth of a tank indication. To further alert the pump operator, the lights shall flash sequentially when the foam tank is empty.

The level measurement shall be based on the sensing of head pressure of the fluid in the tank.

The display shall be constructed of a solid plastic material with a chrome plated die cast bezel to reduce vibrations that can cause broken wires and loose electronic components. The encapsulated design shall provide complete protection from foam and environmental elements. An industrial pressure transducer shall be mounted to the outside of the tank. The display shall be able to be calibrated in the field and shall measure head pressure to accurately show the tank level.

LIGHT SHIELD

There shall be a polished, 16 gauge stainless steel light shield installed over the pump operator's panel.

- There shall be 12 volt DC white LED lights installed under the stainless steel light shield to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be

	Bidder Complies	
	Yes	No

activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house.

- One (1) pump panel light shall come on when the pump is in ok to pump mode.

There shall be a light activated above the pump panel light switch when the parking brake is set. This is to afford the operator some illumination when first approaching the control panel.

There shall be a green pump engaged indicator light activated on at the operator's panel when the pump is shifted into gear from inside the cab.

ADDITIONAL STEP/LIGHT SHIELD

There shall be an additional aluminum treadplate stepping surface no less than 8.00" deep and properly reinforced to support a man's weight, installed over the passenger's side pump panel.

- There shall be 12 volt DC white LED lights installed under the step to illuminate the controls, switches, essential instructions, gauges, and instruments necessary for the operation of the apparatus. These lights shall be activated by the pump panel light switch. Additional lights shall be included every 18.00" depending on the size of the pump house.

There shall be one (1) white LED, step light provided above the step. In order to ensure exceptional illumination, each step light shall provide a minimum of 25 foot-candles (fc) covering an entire 15.00" x 15.00" square placed 10.00" below the light and a minimum of 1.5 fc covering an entire 30.00" x 30.00" square at the same 10.00" distance below the light. The step light shall be activated by the pump panel light switch.

MICROPHONE & SPEAKER COMPARTMENT

A microphone and speaker compartment with a polished stainless steel door shall be furnished adjacent to the pump operator's panel. A polished stainless steel trim band shall be provided around the outside of the compartment, to ensure a waterproof seal. Compartment size shall be 12.00" high x 9.00" wide x 6.00" deep.

AIR HORN SYSTEM

There shall be two (2) Grover, air horns provided and located in the front bumper, recessed to the outside of the frames. The horn system shall be piped to the air brake system wet tank utilizing 0.38" tubing. A pressure protection valve shall be installed in-line to prevent loss of air in the air brake system.

AIR HORN CONTROL

The air horns shall be actuated by a lanyard rope pull control within reach of the officer and by the horn button in the steering wheel. The driver shall have the option to control

	Bidder Complies	
	Yes	No

the air horns or the chassis horns from the horn button by means of a selector switch located on the instrument panel.

ELECTRONIC SIREN

A Federal, model 690010, PA300-012MSC, electronic siren with noise canceling microphone shall be provided.

This siren to be active when the battery switch is on and that emergency master switch is on.

Siren head shall be recessed in a switch panel, on the officer side, as required by the customer.

The electronic siren shall be controlled on the siren head only. No horn button or foot switches shall be required.

SPEAKER

There shall be one (1) speaker provided. Each speaker shall be a Federal Signal DynaMax®, Model ES100C, 100 watt. Each speaker shall use a Federal Signal, Model ESFMT, recess mount with polished trim ring. Each speaker shall be connected to the siren amplifier.

The speaker(s) shall be recessed in the front bumper on the passenger's side.

AUXILIARY MECHANICAL SIREN

A Federal Q2B® siren shall be furnished. A siren brake button shall be installed on the switch panel.

The control solenoid shall be powered up after the emergency master switch is activated.

The mechanical siren shall be recessed in the front bumper on the right side. The siren shall be supported by the bumper framework.

The mechanical siren shall be actuated by two (2) foot switches, one (1) located on the officer's side on the floor and one (1) on the driver's side.

CAB ROOF LIGHTBAR

There shall be a 72.00" Whelen Rota-Beam, LED lightbar mounted on the cab roof.

The lightbar shall include the following:

- One (1) red LED module in the driver's side rear corner position.
- One (1) red LED module in the driver's side front corner position.
- One (1) white LED module in the driver's side first front position.
- One (1) red LED module in the driver's side second front position.

	Bidder Complies	
	Yes	No

- One (1) GTT Opticom™, Model 795*, LED traffic light controller in the front center position set to national standard high priority.
- One (1) red LED module in the passenger's side second front position.
- One (1) white LED module in the passenger's side first front position.
- One (1) red LED module in the passenger's side front corner position.
- One (1) red LED module in the passenger's side rear corner position.

All the lenses shall be clear.

There shall be one (1) switch located in the cab on the switch panel to control the warning lights.

The traffic light controller shall be by a cab switch with emergency master control.

There shall be a driver side momentary cab switch and a passenger side momentary cab switch with no emergency master control.

The traffic light controller shall be disabled when the parking brake is applied.

The white LED modules shall be deactivated when the parking brake is applied.

CAB FACE WARNING LIGHTS

There shall be four (4) Whelen®, Model M6*, LED flashing warning lights installed on the cab face, above the headlights, mounted in a common bezel.

- The driver's side front outside warning light to be red
- The driver's side front inside warning light to be red
- The passenger's side front inside warning light to be red
- The passenger's side front outside warning light to be red

All four (4) lights shall include a colored lens that is the same color of the LED's.

There shall be a switch located in the cab, on the switch panel, to control the four (4) lights.

The inside lights may be load managed if colored or disabled if white, when the parking brake is set.

HEADLIGHTS DAYTIME RUNNING LIGHTS

The high-beam headlights used as daytime running lights shall be activated with the following measures:

- Ignition switch is turned on.
- Parking brake is released.

These lights shall be deactivated with any one of the following measures:

	Bidder Complies	
	Yes	No

- Headlight switch is turned on.
- High-beam flash is turned on.
- Parking brake is set.

HEADLIGHT FLASHER

The high beam headlights shall flash alternately between the left and right side.

There shall be a switch installed in the cab on the switch panel to control the high beam flash. This switch shall be live when the battery switch and the emergency master switches are on.

The flashing shall automatically cancel when the headlight (high or low beam) switch is activated or when the parking brake is set.

SIDE ZONE LOWER LIGHTING

There shall be six (6) Whelen®, 4.32" high x 6.75" long LED lights with Model M6FC, chrome flanges installed per the following:

- Two (2) Model M6**, flashing warning lights, one (1) each side on the bumper extension.
  - The side front lights to be red.
- Two (2) Model M6**, flashing warning lights, behind the crew cab doors.
  - The side middle lights to be red.
- Two (2) Model M6V2*, flashing warning lights with lower scene lights, in the rear wheel well area.
  - The side rear lights to be red.

All colored LED's shall include a lens that is the same color as the LED's.

There shall be a switch in the cab on the switch panel to control the warning lights.

The scene lights shall be activated when a directional signal is activated.

INTERIOR CAB DOOR WARNING LIGHTS

There shall be four (4) Whelen®, Model 50*00F*R, LED flashing lights with a Whelen, flange provided, one (1) light located inside of each cab and crew cab door pan.

The color of the lights shall be amber.

Each light shall be activated by the door jam switch of the associated door. The lights shall alternately flash whenever the corresponding door is open.

	Bidder Complies	
	Yes	No
SIDE WARNING LIGHTS There shall be two (2) pairs of Whelen Model Strip-Lite™, PS*00F*R LED lights provided on the side of the truck, one ahead and one behind the rear wheel well area. The color of the lights shall be red. The lens color shall be the same color as the LED's. These lights shall be activated with a separate switch in cab. Any white warning lights shall be deactivated when the parking brake is set. **REAR ZONE LOWER LIGHTING** There shall be two (2) Whelen®, Model M6V2*, 4.32" high x 6.75" long x 2.25" deep lights with flashing and scene LED's and Model M6FC, chrome flange located at the rear of the apparatus. The driver's side rear light to be red. The passenger's side rear light to be red. The lens over the flashing LED's shall be the same color as the LED's. There shall be a switch in the cab, on the switch panel to control the flashing LED's. The scene LED's shall be activated by a switch at the driver's side switch panel. The scene LED's may be load managed when the parking brake is applied. **REAR WARNING LIGHTS** There shall be one (1) pair of Federal, Model QL64XF*, QuadraFlare LED lights with a Federal, Model QL64MC chrome flanges provided. The lights shall be located on the inside of the taillights, one each side of the rear step compartment. The color of the lights shall be red LED/red lens. There shall be a switch located in the cab on the switch panel to control the lights. **REAR BODY WARNING LIGHTS** There shall be two (2) Whelen®, Model M6V2**, 4.31" high x 6.75" long x 1.34" deep LED flashing warning and scene light(s) with Model M6FC, chrome flange(s) provided above the rear taillights. The color of the warning light LED's shall be red. The lens color of the warning light(s) shall be the same color as the LED's.		

	Bidder Complies	
	Yes	No
The warning light(s) shall be controlled with a separate switch in cab. The scene light(s) shall be activated by a switch at the driver's side switch panel. The warning LED's and scene LED's may be load managed when the parking brake is applied. **FLASH PATTERN** The lights in the rear lower zone and rear upper zone shall be connected to the same power supply. The lights shall flash in an "X" pattern. **REAR OF HOSEBED WARNING LIGHTS** There shall be two (2) Whelen, Model B63M7**, LED Rota-Beam, beacons with Model M7**, lower LED flashing lights provided in a single polished aluminum housing at the rear of the truck. There shall be one (1) installed on the driver's side with the lower light to the rear: • The driver's side beacon to include red LED's. • The rear upper light(s) on the driver's side to be amber. There shall be one (1) installed on the passenger's side with the lower light to the rear: • The passenger's side beacon to include red LED's. • The rear upper light(s) on the passenger's side to be amber. The color of the lenses for all the LED's to be the same color as the LED's. There shall be a switch located in the cab on the switch panel to control the lights. The lower light may be load managed when the parking brake is applied. The rear warning lights shall be mounted on stainless steel brackets with all wiring totally enclosed. These brackets shall also support the clearance/marker lights. **TRAFFIC DIRECTING LIGHT** There shall be one (1) Federal Signal, Model 320772, LED traffic directing light module installed at the rear of the apparatus. The light is 2.70" high X 41.80" wide X 3.30" deep. There shall be a Federal Signal, Model 331105, universal control head included with this installation. This traffic directing light shall be mounted over the hosebed, between the body side sheets, on a cross tube at the rear of the apparatus.		

	Bidder Complies	
	Yes	No

This installation shall include a treadplate box.

The traffic directing light control head shall be located in the driver side overhead switch panel in the right panel position.

120 VOLT RECEPTACLE

There shall be three (3), 20 amp 120 volt AC three (3) wire straight blade duplex receptacle(s) installed per customer instructions at print review. The NEMA configuration for the receptacles shall be 5-20R.

The receptacle(s) shall be powered from the shoreline inlet.

There shall be a label installed near the receptacle(s) that state the following:

- Line Voltage
- Current Ratting (amps)
- Phase
- Frequency
- Power Source

LOOSE EQUIPMENT

The following equipment shall be furnished with the completed unit:

- One (1) bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit

NFPA REQUIRED LOOSE EQUIPMENT PROVIDED BY FIRE DEPARTMENT

The following loose equipment as outlined in NFPA 1901, 2009 edition, section 5.8.2 and 5.8.3 shall be provided by the fire department. All loose equipment shall be installed on the apparatus before placed in emergency service, unless the fire department waives NFPA section 4.21.

- 800 ft (60 m) of 2.50" (65 mm) or larger fire hose.
- 400 ft (120 m) of 1.50" (38 mm), 1.75" (45 mm), or 2.00" (52 mm) fire hose.
- One (1) handline nozzle, 200 gpm (750 L/min) minimum.
- Two (2) handline nozzles, 95 gpm (360 L/min) minimum.
- One (1) playpipe with shutoff and 1.00" (25 mm), 1.125" (29 mm), and 1.25" (32 mm) tips.
- One (1) SCBA complying with NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus for Fire and Emergency Services*, for each assigned seating position, but not fewer than four (4), mounted in brackets

	Bidder Complies	
	Yes	No
fastened to the apparatus or stored in containers supplied by the SCBA manufacturer. • One (1) spare SCBA cylinder for each SCBA carried, each mounted in a bracket fastened to the apparatus or stored in a specially designed storage space(s). • One (1) first aid kit. • Four (4) combination spanner wrenches mounted in bracket(s) fastened to the apparatus. • Two (2) hydrant wrenches mounted in brackets fastened to the apparatus. • Four (4) ladder belts meeting the requirements of NFPA 1983, *Standard on Fire Service Life Safety Rope and System Components* (if equipped with an aerial device). • One (1) double female 2.50" (65 mm) adapter with National Hose threads, mounted in a bracket fastened to the apparatus. • One (1) double male 2.50" (65 mm) adapter with National Hose threads, mounted in a bracket fastened to the apparatus. • One (1) rubber mallet, for use on suction hose connections, mounted in a bracket fastened to the apparatus. • Two (2) salvage covers each a minimum size of 12 ft x 14 ft (3.7 m x 4.3 m). • One (1) traffic vest for each seating position, each vest to comply with ANSI/ISEA 207, *Standard for High Visibility Public Safety Vests*, and have a five-point breakaway feature that includes two (2) at the shoulders, two (2) at the sides, and one (1) at the front. • Five (5) fluorescent orange traffic cones not less than 28.00" (711 mm) in height, each equipped with a 6.00" (152 mm) retro-reflective white band no more than 4.00" (152 mm) from the top of the cone, and an additional 4.00" (102 mm) retro-reflective white band 2.00" (51 mm) below the 6.00" (152 mm) band. • Five (5) illuminated warning devices such as highway flares, unless the five (5) fluorescent orange traffic cones have illuminating capabilities. • One (1) automatic external defibrillator (AED). • If the supply hose carried does not use sexless couplings, an additional double female adapter and double male adapter, sized to fit the supply hose carried, shall be carried mounted in brackets fastened to the apparatus. • If none of the pump intakes are valved, a hose appliance that is equipped with one or more gated intakes with female swivel connection(s) compatible with the supply hose used on one side and a swivel connection with pump intake threads on the other side shall be carried. Any intake connection larger than 3.00" (75 mm) shall include a pressure relief device that meets the requirements of 16.6.6. • If the apparatus does not have a 2.50" National Hose (NH) intake, an adapter from 2.50" NH female to a pump intake shall be carried, mounted in a bracket fastened to the apparatus if not already mounted directly to the intake.		

	Bidder Complies	
	Yes	No

- If the supply hose carried has other than 2.50" National Hose (NH) threads, adapters shall be carried to allow feeding the supply hose from a 2.50" NH thread male discharge and to allow the hose to connect to a 2.50" NH female intake, mounted in brackets fastened to the apparatus if not already mounted directly to the discharge or intake.

SOFT SUCTION HOSE PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, section 5.7.2 requires a minimum of 20 ft of suction hose or 15 ft of supply hose.

Hose is not on the apparatus as manufactured. The fire department shall provide suction or supply hose.

DRY CHEMICAL EXTINGUISHER PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, section 5.8.3 requires one (1) approved dry chemical portable fire extinguisher with a minimum 80-B:C rating mounted in a bracket fastened to the apparatus.

The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.

WATER EXTINGUISHER PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, section 5.8.3 requires one (1) 2.5 gallon or larger water extinguisher mounted in a bracket fastened to the apparatus.

The extinguisher is not on the apparatus as manufactured. The fire department shall provide and mount the extinguisher.

FLATHEAD AXE PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) flathead axe mounted in a bracket fastened to the apparatus.

The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.

PICKHEAD AXE PROVIDED BY FIRE DEPARTMENT

NFPA 1901, 2009 edition, Section 5.8.3 requires one (1) pickhead axe mounted in a bracket fastened to the apparatus.

The axe is not on the apparatus as manufactured. The fire department shall provide and mount the axe.

PAINT

The exterior custom cab and body painting procedure shall consist of a seven (7) step finishing process as follows:

	Bidder Complies	
	Yes	No

1. Manual Surface Preparation - All exposed metal surfaces on the custom cab and body shall be thoroughly cleaned and prepared for painting. Imperfections on the exterior surfaces shall be removed and sanded to a smooth finish. Exterior seams shall be sealed before painting. Exterior surfaces that shall not be painted include; chrome plating, polished stainless steel, anodized aluminum and bright aluminum treadplate.
2. Chemical Cleaning and Pretreatment - All surfaces shall be chemically cleaned to remove dirt, oil, grease, and metal oxides to ensure the subsequent coatings bond well. The aluminum surfaces shall be properly cleaned and treated using a high pressure, high temperature 4 step Acid Etch process. The steel and stainless surfaces shall be properly cleaned and treated using a high temperature 3 step process specifically designed for steel or stainless. The chemical treatment converts the metal surface to a passive condition to help prevent corrosion. A final pure water rinse shall be applied to all metal surfaces.
3. Surfacer Primer - The Surfacer Primer shall be applied to a chemically treated metal surface to provide a strong corrosion protective basecoat. A minimum thickness of 2 mils of Surfacer Primer is applied to surfaces that require a Critical aesthetic finish. The Surfacer Primer is a two-component high solids urethane that has excellent sanding properties and an extra smooth finish when sanded.
4. Finish Sanding - The Surfacer Primer shall be sanded with a fine grit abrasive to achieve an ultra-smooth finish. This sanding process is critical to produce the smooth mirror like finish in the topcoat.
5. Sealer Primer - The Sealer Primer is applied prior to the Basecoat in all areas that have not been previously primed with the Surfacer Primer. The Sealer Primer is a two-component high solids urethane that goes on smooth and provides excellent gloss hold out when topcoated.
6. Basecoat Paint - Two coats of a high performance, two component high solids polyurethane basecoat shall be applied. The Basecoat shall be applied to a thickness that shall achieve the proper color match. The Basecoat shall be used in conjunction with a urethane clear coat to provide protection from the environment.
7. Clear Coat - Two (2) coats of Clear Coat shall be applied over the Basecoat color. The Clear Coat is a two-component high solids urethane that provides superior gloss and durability to the exterior surfaces. Lap style and roll-up doors shall be Clear Coated to match the body. Paint warranty for the roll-up doors shall be provided by the roll-up door manufacture.

All removable items such as brackets, compartment doors, door hinges, and trim shall be removed and separately if required, to ensure paint behind all mounted items. Body

	Bidder Complies	
	Yes	No

assemblies that cannot be finish painted after assembly shall be finish painted before assembly.

The cab shall be two-tone, with the upper section painted #101 black and lower section of the cab and body painted #70 red.

PAINT - ENVIRONMENTAL IMPACT

Contractor shall meet or exceed all current State regulations concerning paint operations. Pollution control shall include measures to protect the atmosphere, water and soil. Controls shall include the following conditions:

- Topcoats and primers shall be chrome and lead free.
- Metal treatment chemicals shall be chrome free. The wastewater generated in the metal treatment process shall be treated on-site to remove any other heavy metals.
- Particulate emission collection from sanding operations shall have a 99.99% efficiency factor.
- Particulate emissions from painting operations shall be collected by a dry filter or water wash process. If the dry filter is used, it shall have an efficiency rating of 98.00%. Water wash systems shall be 99.97% efficient
- Water from water wash booths shall be reused. Solids shall be removed on a continual basis to keep the water clean.
- Paint wastes are disposed of in an environmentally safe manner.
- Empty metal paint containers shall be to recover the metal.
- Solvents used in clean-up operations shall be recycled on-site or sent off-site for distillation and returned for reuse.

Additionally, the finished apparatus shall not be manufactured with or contain products that have ozone depleting substances. Contractor shall, upon demand, present evidence that the manufacturing facility meets the above conditions and that it is in compliance with his State EPA rules and regulations.

PAINT/SEAL CHASSIS FRAME ASSEMBLY

The following components shall be treated with epoxy E-coat protection prior to finish paint:

Two (2) C-channel frame rails

Two (2) frame liners

The E-coat process shall meet the technical properties shown.

Before the frame rails are finish painted, all areas shall be sealed with a 3M 2084 metal sealant after the components are torqued to the frame rails:

	Bidder Complies	
	Yes	No
- The joint between the main frame and the liner - The joint between all crossmembers and the frame - The joint between all spring hangers and the frame. The chassis frame assembly shall be finish painted [Paint Color, Frame Assembly] before the installation of the cab and body, and before installation of the engine and transmission assembly, air brake lines, electrical wire harnesses, etc. Components that are included with the chassis frame assembly that shall be finish painted are: Frame rails Frame liners Cross members Axles Suspensions Steering gear Battery boxes Bumper extension weldment Frame extensions Body mounting angles Rear Body support substructure (front and rear) Pump house substructure Air tanks Fuel tank Castings Individual piece parts used in chassis and body assembly After the chassis frame assembly is finish painted, the following non-torqued joints shall be sealed with a SG-510A rust-proofing compound:		

	Bidder Complies	
	Yes	No
-All bolted on chassis components that could be vulnerable to rust, i.e. body mounting angles, air tanks, etc. To summarize, all metal to metal contact components that are prone to rust, shall be protected. **FUEL TANK LINING** The fuel tank will be covered with Line-X® spray-on polyurethane/polyurea material. The material will be BLACK in color and installed prior to the fuel tank installation. The lining will be properly applied by an authorized Line-X dealer. **ADDITIONAL PAINT** The fuel tank and air reservoirs shall be provided with two (2) coats of automotive primer and two (2) coats of automotive paint along with the standard coating. Color shall be black. **COMPARTMENT INTERIOR PAINT** The interior of compartmentation shall be painted with a gray spatter type paint. **REFLECTIVE BAND** A 6.00" white reflective band shall be provided across the front of the vehicle and along the sides of the body. **CHEVRON STRIPING ON THE FRONT BUMPER** There shall be alternating chevron striping located on the front bumper. The colors shall be red and fluorescent yellow green diamond grade. The size of the striping shall be 6.00". **CHEVRON STRIPING, REAR** There shall be alternating chevron striping located on the rear-facing vertical surface of the apparatus. The rear surface, excluding the rear compartment door, shall be covered. The colors shall be red and fluorescent yellow green diamond grade. Each stripe shall be 6.00" in width. This shall meet the requirements of NFPA 1901, 2009 edition, which states that 50% of the rear surface shall be covered with chevron striping. **REFLECTIVE OUTLINE STRIPE** A .25" black reflective outline shall be applied to the top and the bottom of the reflective band. There shall be one (1) set of outline stripes required.		

	Bidder Complies	
	Yes	No
REFLECTIVE STRIPE, CAB DOORS A 6.00" x 16.00" white reflective stripe shall be provided across the interior of each cab door. The stripe shall be located approximately 1.00" up from the bottom, on the door panel. This stripe shall meet the NFPA 1901 requirement. **REFLECTIVE STRIPE** There shall be five (5) compartment door/s with a reflective stripe around the top, bottom, front and rear edges of the compartment door including scrolls in each corner. **CAB STRIPE** There shall be a reflective stripe provided on both sides of the cab in place of the chrome molding. **LETTERING** Twenty-one (21) to forty (40) reflective lettering, 3.00" high, with outline and shade shall be provided. **LETTERING** There shall be reflective lettering, 4.00" high, with outline and shade provided. There shall be six (6) letters provided. **LETTERING** There shall be reflective lettering, 16.00" high, with outline and shade provided. There shall be four (4) letters provided. **LETTERING** There shall be reflective lettering, 3.00" high, with outline and shade provided. There shall be two (2) letters provided. **LETTERING** There shall be reflective lettering, 6.00" high, with outline and shade provided. There shall be three (3) letters provided. **LETTERING** There shall be reflective lettering, 22.00" high, with outline and shade provided. There shall be two (2) letters provided. **CAB GRILLE DESIGN** An American flag design shall be painted on the cab grille. **EMBLEM/S** There shall be one (1) pair of reflective emblems, 24.00" to 26.00" wide, supplied and installed on the cab doors. The emblems shall include the fire department's monogram or number inside of a circle with scrolling.		

	Bidder Complies	
	Yes	No

EMBLEM

There shall be two (2) pair of "stop sign" emblems 12.00" high x 12.00" wide installed inside the cab doors. The emblem shall have a red reflective background with white lettering. Emblems shall be installed on a smooth surface.

RUST PROOF / UNDERCOAT, CUSTOM CHASSIS

The rust proof/undercoat option shall provide additional paint to the chassis frame rails and a protective coating that shall help fight corrosion.

Rust proof / Undercoat Process

A coating shall be applied to the custom chassis once the cab, pump and body mounting angles have been installed. The coating texture shall be waxy and pliable after drying so it shall not chip, crack, or peel off during normal vehicle operations.

The rust proofing material shall be the color black, and is a coating of a corrosion inhibitor for long-term protection against corrosion.

The material shall be applied to the following areas:

- Outside of the chassis frame rails (top & side)
- Top of the frame rails
- Top of cross members
- Inside of the frame rails - in and around harnesses keeping coating off harnesses as best as possible
- Between the frame and liner - coating shall be applied after frame and liner are assembled using a wand to apply material between as best as possible
- Top of the body mounting angles (including rear platform)
- Top of air tanks
- Top of fuel tank

E-COATING OF STEEL COMPONENTS

The following components shall be treated with an epoxy E-coat to provide resistance to corrosion and chemicals:

Cross members
TAK-4® weldments (side plates and side plate interconnecting structure members) (if applicable)
Torsion bar anchor weldments (if applicable)
Battery boxes
Bumper extension weldment
Frame extensions
Body mounting angles
Rear body support weldment

	Bidder Complies	
	Yes	No
Under body support weldments (front and rear) Pump house substructure (walkway if applicable) The following components shall not be e-coated: Air tanks Fuel tank Castings Individual piece parts used in chassis and body assembly The e-coated parts shall have a black top coat as well to provide an additional layer of protection and provide a consistent finish. **MANUAL, FIRE APPARATUS PARTS** Two (2) custom parts manuals for the complete fire apparatus shall be provided in hard copy with the completed unit. One (1) compact disc (CD) shall also be provided that shall include all of the information from the above manual. The manual shall contain the following: - Job number - Part numbers with full descriptions - Table of contents - Parts section sorted in functional groups reflecting a major system, component, or assembly - Parts section sorted in Alphabetical order - Instructions on how to locate parts The manual shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies. **SERVICE PARTS INTERNET SITE** The service parts information included in this manual is also available on the factory website. The website offers additional functions and features not contained in this manual, such as digital photographs and line drawings of select items. The website also features electronic search tools to assist in locating parts quickly.		

	Bidder Complies	
	Yes	No
MANUALS, CHASSIS SERVICE Two (2) chassis service manuals containing parts and service information on major components shall be provided with the completed unit. One (1) compact disk (CD) shall also be provided that shall include all of the information from the above manual. The manuals shall contain the following sections: - Job number - Table of contents - Troubleshooting - Front Axle/Suspension - Brakes - Engine - Tires - Wheels - Cab - Electrical, DC - Air Systems - Plumbing - Appendix The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies. **MANUALS, CHASSIS OPERATION** Two (2) chassis operation manuals shall be provided. One (1) compact disk (CD) shall also be provided that shall include all of the information from the above manual. **ONE (1) YEAR MATERIAL AND WORKMANSHIP** Each new piece of apparatus shall be provided with a minimum **one (1) year** basic apparatus material and workmanship limited warranty. The warranty shall cover such		

	Bidder Complies	
	Yes	No
portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception). **ENGINE WARRANTY** A Detroit Diesel **five (5) year** limited engine warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package. **STEERING GEAR WARRANTY** A Sheppard **three (3) year** limited steering gear warranty shall be provided. A copy of the warranty certificate shall be submitted with the bid package. **FIFTY (50) YEAR STRUCTURAL INTEGRITY** The chassis frame shall be provided with a **fifty (50) year** material and workmanship limited warranty. The warranty shall cover the chassis frame as being free from defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception). **FRONT AXLE THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY** Independent front suspension shall be provided with a **three (3) year** material and workmanship limited warranty. The manufacturer's warranty shall provide that the independent front suspension and steering gears be free from any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception). **REAR AXLE TWO (2) YEAR MATERIAL AND WORKMANSHIP WARRANTY** A Meritor™ Axle **two (2) year** limited warranty shall be provided. **ABS BRAKE SYSTEM THREE (3) YEAR MATERIAL AND WORKMANSHIP WARRANTY** A Meritor Wabco™ ABS brake system **three (3) year** limited warranty shall be provided. **TEN (10) YEAR STRUCTURAL INTEGRITY** The new cab shall be provided with a **ten (10) year** material and workmanship limited warranty. The warranty shall cover such portions of the cab built by the manufacturer as being free from structural failures caused by defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception). **TEN (10) YEAR PAINT AND CORROSION** Each new piece of apparatus shall be provided with a ten (10) year paint and corrosion limited warranty on the apparatus cab. The warranty shall cover painted exterior		

	Bidder Complies	
	Yes	No
surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception). **FIVE (5) YEAR MATERIAL AND WORKMANSHIP** The electronic modules and display(s) shall be provided with a five (5) year material and workmanship limited warranty. The warranty shall cover electronic modules to be free from failures caused by defects in material and workmanship. A copy of the warranty certificate shall be submitted with the bid package (no exception). **COMPARTMENT LIGHT WARRANTY** A ten (10) year material and workmanship limited warranty shall be provided for the Pierce 12 volt DC LED strip lights**.** The warranty shall cover the LED strip lights to be free from defects in material and workmanship that would arise under normal use. A copy of the warranty certificate shall be submitted with the bid package (no exception). **TRANSMISSION WARRANTY** The transmission shall have a **five (5) year/unlimited mileage** warranty covering 100 percent parts and labor. The warranty is to be provided by Allison Transmission and not the apparatus builder. **TRANSMISSION COOLER WARRANTY** The transmission cooler shall carry a five (5) year parts and labor warranty (exclusive to the transmission cooler). In addition, a collateral damage warranty shall also be in effect for the first three (3) years of the warranty coverage and shall not exceed $10,000 per occurrence. A copy of the warranty certificate shall be submitted with the bid package. **WATER TANK WARRANTY** The UPF poly water tank shall be provided with a lifetime material and workmanship limited warranty. A copy of the warranty certificate shall be submitted with the bid package (no exception). **TEN (10) YEAR STRUCTURAL INTEGRITY** Each new piece of apparatus shall be provided with a **ten (10) year** material and workmanship limited warranty on the apparatus body. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (no exception).		

	Bidder Complies	
	Yes	No

ROLL UP DOOR MATERIAL AND WORKMANSHIP WARRANTY

A Gortite roll-up door limited warranty shall be provided. The mechanical components of the roll-up door shall be warranted against defects in material and workmanship for the lifetime of the vehicle. A **six (6) year** limited warranty shall be provided on painted and satin roll up doors.

A copy of the warranty certificate shall be submitted with the bid package.

PUMP WARRANTY

The Waterous pump shall be provided with a **five (5) year** material and workmanship limited warranty.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

TEN (10) YEAR PUMP PLUMBING WARRANTY

The stainless steel plumbing components and ancillary brass fittings used in the construction of the water/foam plumbing system shall be warranted for a period of **ten (10) years or 100,000 miles**. This covers structural failures caused by defective design or workmanship, or perforation caused by corrosion, provided the apparatus is used in a normal and reasonable manner. This warranty is extended only to the original purchaser for a period of ten years from the date of delivery.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

FOAM SYSTEM WARRANTY

A **one (1) year** material and workmanship limited warranty shall be provided on the Husky 12 foam system. A **five (5) year** material and workmanship limited warranty shall be provided on the foam system control head.

A copy of the warranty certificate shall be submitted with the bid package (no exception).

TEN (10) YEAR PAINT AND CORROSION

Each new piece of apparatus shall be provided with a ten (10) year paint and corrosion limited warranty on the apparatus body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package (No Exception).

ONE (1) YEAR MATERIAL AND WORKMANSHIP

The graphic lamination shall be provided with a one (1) year material and workmanship limited warranty. The warranty shall cover the graphic lamination as being free from

	Bidder Complies	
	Yes	No
defects in material, workmanship, fading, and deterioration that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (No Exception). **FIVE (5) YEAR EXTENDED** Each new piece of apparatus shall be provided with a five (5) year basic apparatus material and workmanship limited warranty on the chassis. The manufacturer's warranty shall provide for repairs to correct any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (No Exception). **FIVE (5) YEAR EXTENDED** Each new piece of apparatus shall be provided with a five (5) year basic apparatus material and workmanship limited warranty on the apparatus body. The manufacturer's warranty shall provide for repairs to correct any defect related to material and workmanship on the portion of the apparatus built by the manufacturer that would arise under normal use and service. A copy of the warranty certificate shall be submitted with the bid package (No Exception). **VEHICLE STABILITY CERTIFICATION** The fire apparatus manufacturer shall provide a certification stating the apparatus complies with NFPA 1901, current edition, section 4.13, Vehicle Stability. The certification shall be provided at the time of bid. **ENGINE INSTALLATION CERTIFICATION** The fire apparatus manufacturer shall provide a certification, along with a letter from the engine manufacturer stating they approve of the engine installation in the bidder's chassis. The certification shall be provided at the time of bid. **POWER STEERING CERTIFICATION** The fire apparatus manufacturer shall provide a certification stating the power steering system as installed meets the requirements of the component supplier. The certification shall be provided at the time of bid. **CAB INTEGRITY CERTIFICATION** The fire apparatus manufacturer shall provide a cab crash test certification with this proposal. The certification states that the cab must meet or exceed the requirements below: - European Occupant Protection Standard ECE Regulation No.29 - SAE J2422 Cab Roof Strength Evaluation - Quasi-Static Loading Heavy Trucks		

	Bidder Complies	
	Yes	No
- SAE J2420 COE Frontal Strength Evaluation - Dynamic Loading Heavy Trucks - Roof Crush The cab shall be subjected to a roof crush force of 100,000 lb. This value shall be 450 percent of the ECE 29 criteria, which must be equivalent to the front axle rating up to a maximum of ten (10) metric tons. - Side Impact The cab shall be subjected to dynamic preload with a 13,275-lb moving barrier is slammed into the side of the cab at 5.50 mph, striking with an impact of 13,000 ft-lb of energy. This test shall closely represent the forces a cab shall see in a rollover incident. - Frontal Impact The cab shall withstand a frontal force produced from 65,200 ft-lb of energy using a swing-bob type platen. The same cab shall withstand all tests without any measurable intrusion into the survival space of the occupant area. There shall be no exception to any portion of the cab integrity certification. Nonconformance shall lead to immediate rejection of bid. **CAB DOOR DURABILITY CERTIFICATION** Robust cab doors help protect occupants. Cab doors shall survive a 200,000 cycle door slam test where the slamming force exceeds 20 G's of deceleration. The bidder shall certify that the sample doors similar to those provided on the apparatus have been tested and have met these criteria without structural damage, latch malfunction, or significant component wear. **WINDSHIELD WIPER DURABILITY CERTIFICATION** Visibility during inclement weather is essential to safe apparatus performance. Windshield wipers shall survive a 3 million cycle durability test in accordance with section 6.2 of SAE J198 *Windshield Wiper Systems - Trucks, Buses and Multipurpose Vehicles.* The bidder shall certify that the wiper system design has been tested and that the wiper system has met these criteria. **ELECTRIC WINDOW DURABILITY CERTIFICATION** Cab window roll-up systems can cause maintenance problems if not designed for long service life. The window regulator design shall complete 30,000 complete up-down cycles and still function normally when finished. The bidder shall certify that sample doors and windows similar to those provided on the apparatus have been tested and have met these criteria without malfunction or significant component wear.		

	Bidder Complies	
	Yes	No

SEAT BELT ANCHOR STRENGTH

Seat belt attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat belt anchor design shall withstand 3000 lb of pull on both the lap and shoulder belt in accordance with FMVSS 571.210 Seat Belt Assembly Anchorages. The bidder shall certify that each anchor design was pull tested to the required force and met the appropriate criteria.

SEAT MOUNTING STRENGTH

Seat attachment strength is regulated by Federal Motor Vehicle Safety Standards and should be validated through testing. Each seat mounting design shall be tested to withstand 20 G's of force in accordance with FMVSS 571.207 Seating Systems. The bidder shall certify that each seat mount and cab structure design was pull tested to the required force and met the appropriate criteria.

CAB DEFROSTER CERTIFICATION

Visibility during inclement weather is essential to safe apparatus performance. The defroster system shall clear the required windshield zones in accordance with SAE J381 Windshield Defrosting Systems Test Procedure And Performance Requirements - Trucks, Buses, And Multipurpose Vehicles. The bidder shall certify that the defrost system design has been tested in a cold chamber and passes the SAE J381 criteria.

CAB HEATER CERTIFICATION

Good cab heat performance and regulation provides a more effective working environment for personnel, whether in-transit, or at a scene. The cab heaters shall warm the cab 77 degrees Fahrenheit from a cold-soak, within 30 minutes when tested using the coolant supply methods found in SAE J381. The bidder shall certify that a substantially similar cab has been tested and has met these criteria.

AMP DRAW REPORT

The bidder shall provide, at the time of bid and delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

The manufacturer of the apparatus shall provide the following:

- Documentation of the electrical system performance tests.
- A written load analysis, which shall include the following:
  - The nameplate rating of the alternator.
  - The alternator rating under the conditions specified per:
    - Applicable NFPA 1901 or 1906 (Current Edition).
  - The minimum continuous load of each component that is specified per:
    - Applicable NFPA 1901 or 1906 (Current Edition).
  - Additional loads that, when added to the minimum continuous load, determine the total connected load.
  - Each individual intermittent load.

ATTACHMENT B – SPECIFICATIONS

	Bidder Complies	
	Yes	No
All of the above listed items shall be provided by the bidder per the applicable NFPA 1901 or 1906 (Current Edition).		

CHUTE #1 → 76" DEPTH x 12" HEIGHT x 30" WIDTH
CHUTE #2 → 76" DEPTH x 12" HEIGHT x 38" WIDTH
& POLY TRAYS FOR EACH CHUTE → TO BE FLUSH WITH EDGE OF HOSE BED (RECESSED)
HB 1 → 300' 2½ IN 2 COLUMNS
HB 2 → 400' 3" IN 3 COLUMNS
HB 3 → 1000' 5" IN 4 COLUMNS

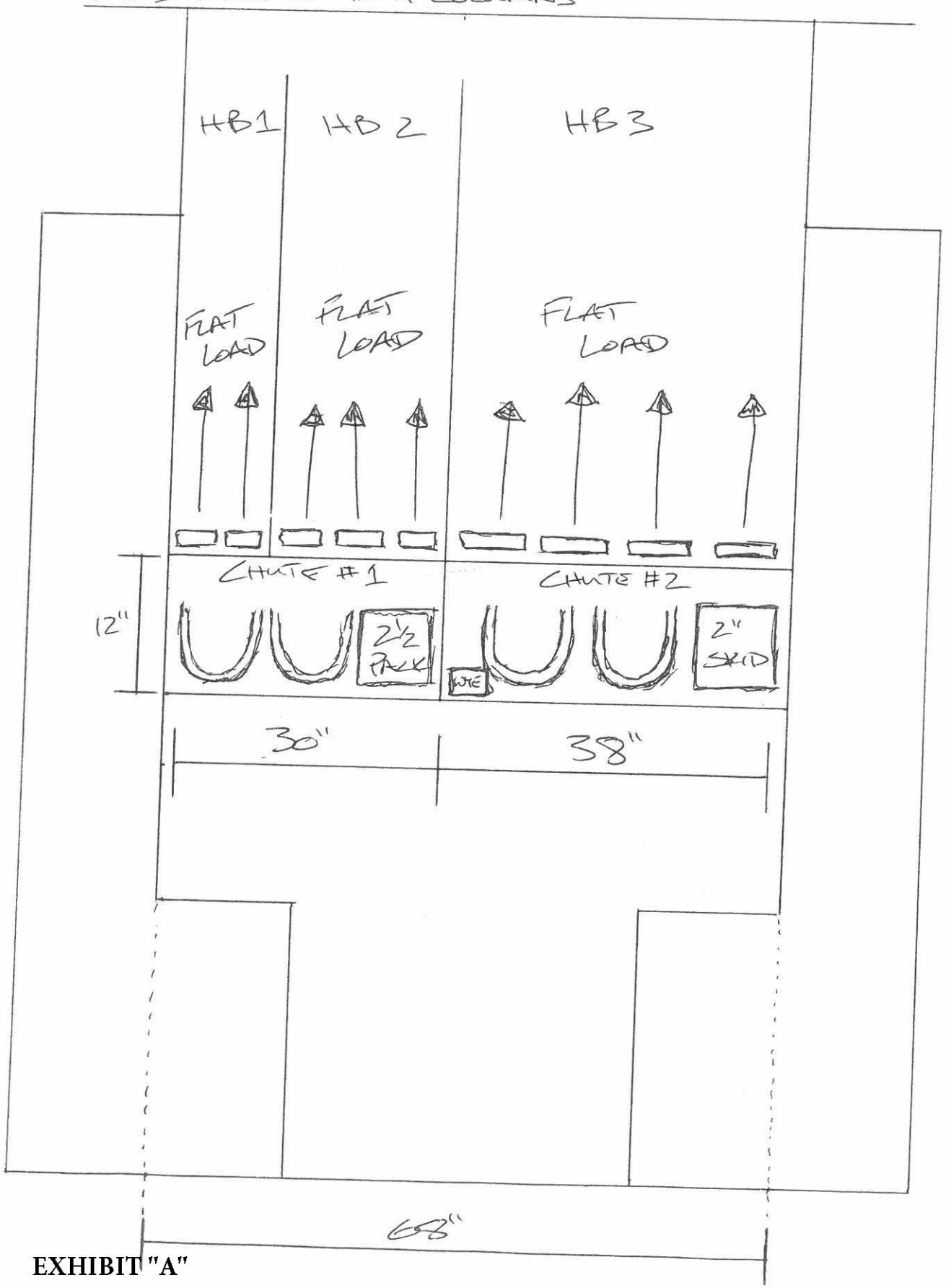

EXHIBIT "A"

ATTACHMENT C – POTENTIAL TRADE IN

The following are brief descriptions of the apparatus that are to be considered for trade in:

Vehicle #1 – 1993 Darley

1993 Darley-Spartan Pumper	
Make	**Darley**
Model	**GA405-2142**
Engine	**Detroit - Series60 DDEC**
Transmission	**Allison - 746**
Pump	**Darley Champion, EM 55058-1500GPM 2 Stage**
Vehicle Weight	**40,540 Lbs.**
Engine Hours	**9,847**
Mileage	**50,311/85,000***

***Odometer stopped working at 50,311 and we are estimating the mileage at 85,000**

Vehicle #2 – 1990 Simon Tower Ladder

1990 - Simon Tower Ladder 100 Foot Elevated Platform GVW - 73,400 Lbs.	
Diesel Engine	**New in 2007 - Detroit 8V92TA DDEC**
Aeriel Hours	**1740**
Transmission	**Allison - 746**
Pump	**Waterous - 1500 Gallon CMUYBX**
Vehicle Weight	**73,400 Lbs.**
Hours	**9,999**
Mileage	**94,595/30,989***
Generator	**Kohler 9000(Diesel)**

***Total mileage-motor was replaced at 63,606 miles. New motor has approximately 31,000 miles**