Fairbanks Fire Department

2019 100’ Aerial Ladder Platform Quint Vehicle Specification

INVITATION TO BID

CITY OF FAIRBANKS
FAIRBANKS FIRE DEPARTMENT
FURNISH 100’ AERIAL PLATFORM QUINT FIRE APPARATUS
FB-19-03

Sealed bids for furnishing a 100’ Aerial Platform Quint Fire Apparatus to include delivery to Fairbanks, Alaska, for the City of Fairbanks Fire Department, will be received by the City Clerk’s Office, City Hall, 800 Cushman Street, Fairbanks, Alaska 99701, until and including 2 p.m. local time, Friday, February 22, 2019 and will then be publicly opened and read aloud in the City Council Chambers, 800 Cushman Street, Fairbanks, Alaska.

THIS BID MUST BE SUBMITTED IN A SEPARATE, SEALED ENVELOPE PLAINLY MARKED WITH THE BID OPENING DATE AND TIME AND MARKED WITH THE FORMAL BID NUMBER **FB-19-03** AND NAME OF BID, **100’ Aerial Quint Fire Apparatus**. FORMAL BIDS MUST BE ADDRESSED TO THE CITY CLERK.

Specifications and related bid documents may be obtained at the office of the City Clerk, City Hall, 800 Cushman Street, Fairbanks, Alaska 99701.

The City reserves the right to waive informalities not inconsistent with law and to reject any or all bids.

Christina Rowlett
Purchasing Agent
City of Fairbanks

PUBLISH: FAIRBANKS DAILY NEWS MINER,

INFORMATION FOR BIDDERS

CITY OF FAIRBANKS
FAIRBANKS FIRE DEPARTMENT
FURNISH 100' AERIAL QUINT FIRE APPARATUS
FB-19-03

1. CONTRACT DOCUMENTS: The Invitation to Bid, the Information for Bidders, Specifications, and the Proposal Form shall form the contract. Vendors must examine each of the contract documents, inform themselves of the conditions and make their own estimate of any or all difficulties intended upon furnishing the equipment as desired.

2. DATE AND PLACE OF OPENING: Pursuant to the Invitation, sealed proposals will be received by the City Clerk, City Hall, 800 Cushman Street, Fairbanks, Alaska, until and including 2 p.m. local time, Friday, February 22, 2019. The Proposals will then be opened and publicly read in the City Council Chambers. The award will be made by the Mayor/City Council as soon thereafter as practicable.

3. PRINTED FORM FOR PROPOSALS: All proposals shall be made upon the blank Proposal Form attached hereto and must clearly indicate the unit price in both figures and words. The words shall prevail. ***Each item in this bid document shall be checked for compliance to these specifications by checking "Yes" or "No", on this form.*** If an item is checked "No", a written explanation of non-compliance and the proposed substitution, along with the paragraph number noted for that item, must be provided along with the completed bid proposal. The proposal must be signed by an authorized agent of the bidder. Proposals submitted on forms other than those provided may be rejected.

   In order to ensure consideration and responsiveness of your proposal to bid specifications, where Bid Bond, Performance Bond and Bid Deposits are requested, your proposal shall be placed in a separate envelope from these requested documents. Bid Bonds, Performance Bond, Bid Deposits and Addendum Acknowledgments shall be placed in a separate envelope from the proposal form and shall likewise be sealed. The proposal, in a separate envelope, shall be PLAINLY marked with the name of the bid and the date of opening, and addressed to the City Clerk, City Hall, 800 Cushman Street, Fairbanks, Alaska 99701; other requested documents shall be in an envelope PLAINLY marked with the name of the bid and date of opening and marked with PERTINENT DOCUMENTS. Both of these envelopes shall be enclosed in one envelope for mailing purposes.

   A. A Performance Bond of 100% of the vehicle value shall be provided within 15 days of the signing of the contract. Failure to provide this will result in termination of any agreement.
   B. Terms of payment shall be 100% payment on delivery, testing and acceptance of the apparatus. Manufacturer may specify an option for recommended payment arrangements. The City of Fairbanks Fire Department reserves the right to accept any other payment option or to maintain the 100% payment upon acceptance. The City of Fairbanks will not make any final payments until acceptance and placing in

service of the apparatus by the Fire Department.

C. Equipment items not delivered, any performance test failure, training not provided or construction not in conformance with the contractor's proposal will be cause for the purchaser to withhold payment for those items and/or services found unsatisfactory or not delivered.

4. DOCUMENT COMPLETION: All entries and required signatures on Bid and Contract Documents must be completed either typewritten or in BLACK INK.

5. OMISSIONS AND DISCREPANCIES: Should a vendor find discrepancies in, or omissions from, the contract/proposal documents, or should be in doubt as to their meaning, the vendor should immediately notify the Purchasing Department, 800 Cushman Street, Fairbanks, Alaska 99701, in writing, via email to purchasing@fairbanks.us no later than seven (7) days **before** the bid, who shall then send written corrections or explanations to all known holders of the proposal documents. If no email, can be faxed to 907-459-6731.

6. ACCEPTANCE OF PROPOSALS: As soon as practicable after opening proposals valued over $250,000.00, the City Council will act upon them. On any transaction in excess of $500,000.00, the City Council is the approving body. The right and obligations of the contract shall become effective and binding upon the contracting parties only after formal execution of a purchase order signed by the Purchasing Department, or a contract form signed by the Contractor and Mayor. No other act, oral, written or implied, shall constitute acceptance of a proposal.

   Awards may be made by line item when in the best interest of the City.

   NO BIDS OR PROPOSALS SHALL BE ACCEPTED BY FAX.

7. REJECTION OF BIDS: The City shall have the authority to reject parts of all bids, or all bids for any one or more supplies or contractual services included in the proposed contract, when the public interest will be served thereby. **The City reserves the right not to award #2019-03 and to purchase the 2019 100 Ft. Aerial Ladder Platform Quint Vehicle through the National Association of State Procurement Officials (NASPO) contract, or other purchasing cooperative approved by the City.**

8. TIME FOR DELIVERY: Successful bidders may be required to produce reasonable evidence from their source of supply or manufacturer to justify the delivery dates furnished with their proposals. Any unreasonable deviation from the proposed delivery dates shall constitute a breach of contract and shall entitle the City to cancel all obligations to the Contractor.

9. DELIVERY POINT: Bidders proposal shall include F.O.B. City of Fairbanks Public Works, 2121 Peger Road, Fairbanks, Alaska 99701.

10. POSTPONEMENT: The City of Fairbanks reserves the right to postpone the date of the

opening of proposals and will give written notice of any such postponement to all known holders of the contract documents.

11. STATUTORY REQUIREMENTS:

The bidder chosen will be expected to comply with all Federal, State, Borough and City laws and statutes. Sections from the State of Alaska Statutes and City of Fairbanks Code of Ordinance are listed, for your reference, because of their particular applicability to this project.

A. Alaska Employee Preference Requirements, AS 36.10.010 through 36.10.125.
B. City of Fairbanks Procurement Ordinance, Particularly - Fairbanks General Code Article IV, Competitive Bidding, Sections 54-161 through 170.
C. The bidder chosen must comply with all federal non-discrimination and affirmative action requirements, including Title VI of the Civil Rights Act of 1964 and 1992; Equal Employment Opportunity (EEO) provisions contained in 41 CFR Part 60, and the Disadvantaged Business Enterprise (DBE) Program requirements as defined by 49 CFR part 23.

12. CIVIL RIGHTS/EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION:

Bidders certify, by the submission of their proposal, that they comply with applicable portions of the Federal Civil Rights Act of 1964, the Equal Employment Opportunity Act, Alaska Statute 18.80.010 - 18.80.300, and regulations issued under these acts by the state and federal governments. Bidders not in compliance with these requirements will be declared none responsive.

13. ADDITIONAL INFORMATION FOR BIDDERS:

A. Brand Name or Equal - In the case where a bid does not request a specific brand or in the case where a vendor has an alternate equal to a brand which is specified on a bid call (when an equal is indicated as acceptable in the bid call), the bidders must submit with their proposals the latest printed specifications and advertising literature on the product they propose to furnish. The bidders shall list on a separate sheet of paper any variations from, or exceptions to, the conditions and specifications of the contract documents. This sheet shall be labeled Exceptions to Bid Conditions and Specifications and shall be attached to the proposal.

B. Multiple, Alternate or Conditioned Offers - Unless specifically allowed, multiple, alternate, or bids conditioned upon receiving award of all or a portion of this and/or another contract shall be deemed non-responsive, and shall be rejected.

14. TAXES: The City of Fairbanks does not pay excise tax and will furnish the successful bidder with Exemption Certificates upon request.

15. PROMPT PAYMENT DISCOUNT: The City of Fairbanks will provide payment 30 days after satisfactory delivery, acceptance and receipt of invoice.

A. Discounts for prompt payment will not be considered in the evaluation of offers. However, any offered discount will form a part of the award and will be taken if payment is made within the discount period indicated in the bid by the offeror.

B. In conjunction with discount offered for prompt payment, time shall be computed from: (1) the date of completion of performance of the services or delivery of the supplies to the carrier if acceptance is at point of origin or date of delivery at destination or port of embarkation if delivery and acceptance are at either of these location; or (2) the date a proper invoice is received by accounts payable if the invoice is later than date of performance and delivery. For the purpose of computing the discount earned, payment shall be considered to have been made on the date which appears on the payment check or the date a wire transfer is made.

16. SET OFFS PRIOR TO DISBURSEMENT: Disbursement of monies by City hereunder shall be subject to set-off pursuant to the provisions of Section 2.711 of the Code of Ordinances.

17. QUESTIONS, OBJECTIONS and OR COMMENTS: Shall be in writing and received by the Purchasing Agent no later than seven calendar days prior to proposal opening so that any necessary amendments or clarification can be published and distributed to all known bidders. Email to purchasing@fairbanks.us is encouraged for questions, objections or comments, or if email not available, fax to 907-459-6731.

18. MATERIAL SAFETY DATA SHEETS: For all materials supplied under this bid, the vendor/supplier shall provide to the delivery address the applicable Material Safety Data Sheet (MSDS). MSDS must be received prior to final payment.

19. OPERATIONS & MAINTENANCE MANUALS: For all installation provided, an O & M manual shall be provided for the vehicle and any additional equipment to be maintained in triplicate (3) upon completion of the project and prior to final payment. **See section 12.1.**

19. ASBUILTS: As-built drawings shall be provided upon completion as specified herein. **See section 12.**

CITY OF FAIRBANKS
FAIRBANKS FIRE DEPARTMENT
FURNISH 2019 100' AERIAL PLATFORM QUINT FIRE APPARATUS
FB-19-03

Introduction:

The City of Fairbanks, located in Fairbanks Alaska, is seeking proposals from qualified firms for furnishing a Custom 100' (minimum) Rear Mount Aerial Ladder Platform Quint Fire Apparatus with Equipment. The apparatus provided will have minimum 100' steel rear mounted platform aerial ladder on a chassis supplied with a minimum 5-person cab, an aluminum body with maximum compartmentalization, a 2,000 gpm Waterous fire pump, a 300-gallon water tank and will be supplied with firefighting and rescue equipment as outlined in the following specifications. The apparatus will be built on a 2019 or newer chassis. The apparatus provided must comply with the latest Federal and State of Alaska Motor Vehicle Safety standards and must meet or exceed all requirements found in the latest edition of the N.F.P.A. pamphlet #1901.

1. The apparatus provided must be constructed to effectively operate in the extreme weather conditions routinely encountered in the Interior of Alaska (-50 to +90 degrees Fahrenheit). Any bid that does not adequately address this concern in detail will be considered as non-responsive.

2. All bidders must reply using this specification form, **NO EXCEPTIONS**. No manufacturer generic specification forms will be accepted. Bidders must indicate "**Yes**" meaning the bidder meets the specification for that particular item, or "**No**" indicating they take exception or do not meet the specification for that item. For each item that the bidder responds by checking "No", they must list their substitution or exception and why it is necessary on a separate page in accordance with items 5 &17 of the previous section. ***No Exceptions.***

3. All responsive bidders must provide 10 references (including name, address and contact phone number) from fire departments of similar size, run volume and climate to the City of Fairbanks currently using their apparatus. FFD has 42 suppression staff and runs between 5,000 and 6,000 calls annually.

4. The bidder must furnish the complete apparatus, on site in Fairbanks Alaska, no later than 400 days from award of the bid. For each day beyond 400 days that the vehicle is not on site in Fairbanks, Alaska and accepted by the purchaser the bidder shall incur a $200.00 per day late fee. Purchaser would like delivery sooner if possible to allow testing and placing the apparatus in service during summer months.

Intent of Specifications: It is the intent of these specifications to describe the furnishing and delivery of a complete apparatus equipped as herein specified. In an effort to obtain the best results and the most acceptable apparatus for service in the Fairbanks Fire Department, these specifications cover only the general requirements as to the type of construction and testing to which the apparatus must conform, as well as certain details as to finish, equipment, and

conditions to which the successful bidder must comply. The successful bidder shall be solely responsible for the design and construction of all features of the apparatus. The apparatus furnished by the successful bidder shall meet all the requirements of the most recent N.F.P.A. pamphlet # 1901 for Aerial Ladder Platform Quint Fire Apparatus.

Additional Purchase Option: The purchaser does not require an additional purchase option of this bid.

Additional Purchasers: The City of Fairbanks agrees to allow other purchasers to purchase similar or identical apparatus on our bid.

A. GENERAL:

1. Build and furnish a minimum 100' REAR MOUNT AERIAL LADDER PLATFORM QUINT, meeting NFPA 1901 and the following specification, to the City of Fairbanks Fire Department, Fairbanks, Alaska. Further details provided herein. Yes___ No___

2. Bidders shall provide copies of all guarantees and/or current standard warranty for entire package quoted. Additional warranties requested for bid later in the specification. Yes___ No___

3. Total price shall include FOB delivery to City of Fairbanks Public Works, 2121 Peger Road, Fairbanks, Alaska within the time frame specified. Yes___ No___

4. Each bidder will provide a reasonable delivery schedule in days from date of bid award that complies with #4 (Introduction section) above. 400 days. Yes___ No___

5. Photographs and drawings of this proposed apparatus depicting all sides, front, rear, and top indicating all dimensions including compartment space shall be provided at time of pre-construction conference. A blueprint of the apparatus as proposed shall be included with the bid documents. Yes___ No___

6. A performance bond shall be required in accordance with 3(A) above. Page 2. Yes___ No___

7. Instruction Plates: Corrosion resistant instruction plates, containing all necessary guide information engraved thereon, shall be provided for each handle (exclusive of door handles), valves, switches, or any component part that necessitates actuating or identification of/or important procedures to be followed in operating or servicing said components. All NFPA required plates shall be included and mounted. Purchaser has sole discretion as to need for labeling. Yes___ No___

B. **SPECIFICATIONS**: 100' Rear Mount Aerial Ladder Platform Quint Fire Apparatus, Fairbanks Fire Department. To be referenced/identified as "Platform 03" or "P-03".

1. NFPA General Requirements: (Chapter 4)

1.1 This apparatus will conform to all applicable sections of NFPA 1901 *Standard for Automotive Fire Apparatus*, the most recent addition. Yes____ No____

A. A certification will be issued by the manufacturer stating that this vehicle meets all applicable NFPA guidelines. If it does not meet the applicable guideline an exception list outlining all deficiencies shall be provided. Yes____ No____

B. *Sole Source:* This apparatus is **NOT** required to be manufactured by a sole source manufacturer (The cab, chassis and body built and assembled by the same manufacturer); however sole source manufacturers *may* be given preference by the purchaser. Yes____ No____

1. Any manufacturer bidding an apparatus not completely manufactured and assembled by the same manufacturer must provide the warranty coverage for the entire assembled apparatus. The bidder will be responsible for warranty coverage and repair of all components of the vehicle, including those they did not manufacture. **No Exceptions**. Yes____ No____

2. The bidder must be the final manufacturer of the apparatus and must have substantially constructed the apparatus. Only the chassis may be supplied by a different manufacturer. The remainder of the apparatus body, Aerial ladder, pump installation and associated components as well as all electrical, installation of accessories and final finishing must be completed by the bidder. **No Exceptions.** Yes____ No____

3. **Chassis:** Chassis shall be a 2019 or newer Custom fire apparatus chassis designed specifically to meet these specifications. The purchaser would like, *but is not requiring*, the chassis to be a Spartan Gladiator LFD (or equivalent) chassis matching as closely as possible a Spartan Gladiator heavy rescue vehicle purchased through SVI and in service at the Fairbanks Fire Department. Yes____ No____

4. If a Spartan Gladiator cab is not bid, the intent is to meet the design and functionality as much as possible through these specifications. Yes____ No____

   A. Reference Spartan Chassis for SVI Truck number 883.
   B. Truck VIN number is **4S7AUZD96ECO78414**.
   C. Truck Cab SN is **70366LE10125** .
   D. Apparatus must match chassis as completed from Spartan and finish work completed by SVI except to items that solely apply to a Rescue fire apparatus. Purchaser will provide as Yes____ No____

much documentation, information and pictures to facilitate this process. Alterations due to change in motor, transmission, updated specifications and model year updates are acceptable.

5. Apparatus must be assembled within the United States of America, **No Exceptions.** Yes____ No____

C. All installations will be performed to acceptable industry standards. Yes____ No____

D. Bid price will be for finished apparatus delivery to Fairbanks, Alaska. Yes___ No____

E. This apparatus will be a NFPA 1901 compliant Aerial Ladder Platform Quint fire apparatus meeting all the applicable standards under the most recent version. Yes____ No____

1. The cab will be "extreme duty" design. Cab shall be constructed and finished to limit damage from heavy use, including using metal finishing (interior and exterior) in place of plastic where practical. Yes____ No____

2. Cab shall have the "classic" front fascia matching current apparatus in our fleet. Yes____ No____

3. The roof of the cab shall be raised a minimum of 10" over the Drivers, Captains and Firefighters seating area. Cab may be notched to allow bedding of aerial ladder reducing the overall profile. Please include other raised roof dimensions available, along with cost increases, in your bid if available. Yes____ No____

4. This apparatus body shall be aluminum and allow for the maximum storage possible for equipment and hose. Yes____ No____

5. This apparatus will be equipped with a 100' (minimum) rear mount steel aerial ladder platform rated at a <u>minimum</u> of 1,000 lbs, be equipped with a waterway rated at 2,000 gpm min, and supplied with breathing air and other equipment as specified herein. Yes____ No____

6. The elevating platform apparatus will be used for rescue, fire attack, ventilation, access to upper elevations, elevated master streams and other fire ground truck company operations. Yes____ No____

7. This apparatus will meet the NFPA requirements for a <u>Quint Fire Apparatus</u> and be supplied with a 2,000 gpm Waterous fire pump, a 300-gallon poly water tank, a minimum of 170' of specified ground ladders and hose storage included later in the specifications. Yes____ No____

8. Safety for FFD personnel is a primary design requirement of this apparatus and features that support this objective are critical and will Yes____ No____

be weighted in award of the bid.

F. ***Arctic Engineering:*** This apparatus must be engineered and built for use under extreme arctic conditions with temperatures to –50 F during the winter months and temperatures exceeding +90 degrees F during summer months. Yes____ No____

1. Documentation for all arctic grade components specified by the purchaser must be provided at the preconstruction or mid inspection trip indicating that it meets the requirements set forth in this specification. Yes____ No____

2. Components that are required to be arctic grade for the safe operation of the vehicle under the extreme temperatures specified herein, but that are not specifically requested by the purchaser, shall be provided as arctic grade. Appropriate documentation of additional recommendations shall be included. Yes____ No____

3. All electrical or electronic components used in this vehicle must be capable of normal operation to -50 degrees F, including multiplex wiring, electronics, displays, nodes and other components. Yes____ No____

G. This apparatus must be able to operate over a variety of road conditions, including safely traveling at highway speeds as well as being capable of traveling over rough un-paved or snow packed city streets. Yes____ No____

1.2 ***Dimensions****:*

A. Height will be the minimum possible to meet these specifications, <u>not to exceed 11' 10"</u> at its highest projection. **No Exceptions.** Yes____ No____

B. Overall length will be the minimum possible to meet specifications, should not exceed 48' (576 in.) Purchaser requests shortest possible apparatus that meets this specification. Preference may be given for shortest possible apparatus. Target length 46' 8" or shorter. Yes____ No____

C. Wheelbase will be minimum possible to meet specifications and should not exceed 264" measured center of front hub to centerline between rear duals. Purchaser requests the shortest possible wheelbase that safely meets this specification. Preference may be given for shortest wheelbase on the apparatus. Target length 260" or shorter. Yes____ No____

D. Width will not exceed the maximum allowed by State of Alaska law. Yes____ No____

E. Gross Vehicle Weight (GVWR) in pounds shall be a minimum of 82,500 lbs, greater if required to meet the intent of these specifications. GVW shall include a 5% reserve above the estimated <u>in-service weight</u> of the vehicle including five personnel, specified equipment/components and a 3,500 Yes____ No____

pound equipment allowance. Estimated GVWR will be included with bid document.

F. Maximum wall-to-wall turning radius measured at the tires shall be the minimum that can be achieved and meet these specifications. A turning radius diagram shall be included with the apparatus and a draft with the bid document. Yes____ No____

1.3 ***Performance:***

A. Apparatus shall meet or exceed all performance specifications applicable under NFPA 1901, latest edition. The successful bidder will supply proof at final inspection of apparatus passing all applicable road tests. Yes____ No____

B. Vehicle must be able to obtain and maintain a minimum top road speed of 62 mph and the vehicle shall be governed at 65 mph. Yes____ No____

C. Vehicle must be designed to operate in ambient air temperatures of –50 degrees F to +90 degrees F. Yes____ No____

D. Vehicle will be expected to operate in elevations up to but not exceeding 2,500 ft. Yes____ No____

E. Maximum grade apparatus will be expected to routinely climb is 6%. Yes____ No____

F. Vehicle shall meet all requirements set forth in NFPA 1901 sections on *Apparatus Performance* and *Roadability,* except as <u>exceeded</u> by this specification. Yes____ No____

1.4 ***Hose Thread Size Information*****:** This apparatus will be provided with all outlets as NST in the appropriate size. Larger outlets/inlets will be provided with Storz adapters where specified. Yes____ No____

1.5 ***Testing and Acceptance:***

A. Road tests and manufacturers pre-delivery tests shall be conducted by the manufacturer at the manufacturer's facility prior to delivery. Purchaser may be present at all testing. Verification of performance will be required. Yes____ No____

B. Final testing of the Aerial Ladder, Fire Pump Testing, Line voltage electrical system and other applicable systems shall be performed at the manufacturer's facility by Underwriter's Laboratory (UL) <u>prior</u> to the final inspection but after substantial completion of the apparatus. Documentation of testing shall be supplied to the purchaser at the final inspection. Yes____ No____

C. Acceptance is contingent on apparatus passing purchasers acceptance tests including road tests, pump acceptance testing, ladder service tests,

GVWR/vehicle weight check, and supplied equipment tests upon delivery in Fairbanks, Alaska. It shall not be considered accepted until all tests are satisfactorily passed. Yes____ No____

D. If vehicle fails acceptance testing a retest will be offered with a representative from the manufacturer present. Failure to pass acceptance testing on the retest may be subject for rejection of the furnished apparatus. Yes____ No____

E. All Warranties shall not begin until the vehicle is delivered and officially accepted by the purchaser. Yes____ No____

Fairbanks Fire Department

2019 100' Aerial Ladder Platform Quint Vehicle Specification

2.0 Apparatus Type: (NFPA Chapters 5-11)

2.1 ***Type:*** This apparatus will be used as an *Aerial Ladder Quint Fire Apparatus*, meeting all the applicable requirements of the current edition of NFPA 1901 except where exceeded by this specification. Supplier will provide documentation that the finished apparatus meets this requirement and provide written documentation of any areas it fails to meet the standard. Yes____ No____

2.2 ***Capabilities:*** This apparatus will be capable of conducting and supporting various types of fire ground activities including; fire suppression from on board water tank or external pressurized or non-pressurized water source, rescue via the aerial ladder platform or ground ladders, supplying elevated master streams, and fire ground support operations consistent with truck company operations such as RIC, auxiliary lighting, ventilation, salvage, overhaul, forcible entry, fire ground search and rescue, and utility control. Yes____ No____

A. The primary design objective is *Rescue* capabilities and support of Fire-ground operations with an emphasis on ***SAFTEY*** for crew members. Yes____ No____

2.3 ***Seating capacity:*** This apparatus will have seating capacity, with 3-point restraints, for five fire personnell (Captain, Driver/Engineer, and 3 firefighters) dressed in NFPA compliant structural fire protective clothing. Yes____ No____

2.4 ***Hard suction:*** No hard suction shall be supplied with this apparatus. Yes____ No____

2.5 ***Ground Ladders:*** All ground ladders are to be supplied by the successful bidder. Ladders are to be new, NFPA 1931 compliant aluminum ground ladders. Yes____ No____

Number:	Length:	Type:	Make and Model: Duo Safety except LG
1	12'	Roof	Duo-Safety model 775A (Fly mount)
1	22'	Little Giant	Model Type 1AA Model 22
1	10'	Folding	Duo-Safety model 585-A
1	16'	Roof	Duo-Safety model 875-A
1	24'	Extension	Duo-Safety model 900-A, 2 section
1	28'	Extension	Duo-Safety model 900-A, 2 section
2	35'	Extension	Duo-Safety model 1225-A, 3 section

A. Purchaser wishes to have this compliment of ladders. If it will not fit on the apparatus, a second 28' ladder in leu of the second 35' ladder may be acceptable with an exception taken by the bidder. Yes____ No____

2.6 ***Breathing apparatus:*** No Breathing Apparatus are to be supplied with this apparatus, however;

A. Mounting for five (5) MSA breathing apparatus with 4,500 psi (66 cu ft.) Yes____ No____

cylinders shall be provided; 1 mounted in the Captains seat (section B), and 1in each firefighter jump seat (3) and 1 in an interior compartment for the driver.

B. All Five (5) of the SCBA's shall be mounted in Bostrom seats (specified later), and the adjustable SecureALL SCBA locking system shall be provided using a handle style release (no pull cords). Yes____ No____

C. Storage must be provided for twelve (12) spare SCBA bottles. Cost of fabrication of any bins or racks, regardless of mounting location, are to be included in bid price. *Exact locations to be specified at pre-build conference.* Yes____ No____

1. Minimum of <u>seven</u> bottles shall be stored in wheel well storage compartments. Yes____ No____
2. Remaining bottle storage may be through any combination of Cab compartments (accessed by exterior of vehicle only) or bins/racks fabricated into exterior compartments or roof compartments, subject to approval of purchaser. All to be accessible from ground level. Yes____ No____

2.7 *Equipment Carried on the Apparatus:*

A. The successful bidder will <u>supply and mount</u> the following equipment with the apparatus upon delivery: (This table does not represent ALL equipment requested in this specification). Yes____ No____

Qty:	Description:	Mounting/Part number:
1	4' pike pole with D handle- Zico.	PCM-4 with D handle
1	4' plaster hook with D handle- Zico	PCC-4 with D handle
1	6' pike pole- Zico.	PCM-6
1	8' pike pole- Zico, FLY Mount	PCM-8
1	8' NY Style hook.	Hooks Unlimited, RH-8
1	10' NY Style hook	Hooks Unlimited, RH-10
1	6' Plaster Hook	Zico, PCC-6
1	8' Rubbish Hook	Nupula RH-8D
1	8' Colorado Hook	Hooks Unlimited, W-FH-Colorado 8'8"
1	10' pike pole- Zico.	PCM-10
1	12' pike pole	PCM-12
1	12' Rubbish Hook	Nupula, RH-12D
1	2.5 gallon pressurized water fire extinguisher with strap and mount.	Amerex 240
1	20 lb dry chemical fire extinguisher with mount.	Amerex 423
1	CO2 fire extinguisher with mount.	Amerex 330
4	Wheel chocks with mounts (location determined at preconstruction conference.	Zico SAC-44 folding, one set per side, sized appropriately

3	Elkhart Hydrant wrench/spanner combinations.	Model 470 with S-454-S wrench
2	Elkhart dual spanner wrench with mount.	Model 469
2	Streamlight rechargeable LED hand lights with AC charging bases.	E-spot FireBox 45861- Standard System- Orange
1	Streamlite Fire Vulcan LED Handlight	Vulcan LED w/vehicle mount, orange
1	Streamlite E-Flood Lightbox HL	E-Flood LED w/vehicle mount-orange.
1	Thermal imaging camera AC charger base. (Mounted and wired in)	MSA Evolution 6000 universal truck charger base.
1	Knox box Sentry key lock system, provided and installed.	See Section 5.5- Radio. Pg 23.
10	Collapsible traffic cones.	Pack-A-Cone, 28” (2 x 5 packs)
1	Plastic stokes basket with rigging & hardware- Base Ladder Mount/Box	Ferno model 71 w/model 418-1 rigging.
2	Sets Tire Chains; for front &rear axle. (Made in the USA model)	Cam locking style, Quick-Grip by Quality Chain (or equivalent)
NA	PAK Mounting Brackets	See section “C” on pg 53
4	Air Fittings specified in 3.6(G)(2).	Foster FM-3
2	Cab safety bars specified in 3.1(F)(4)	Manufacturer provided.
3	Zico pre-mix fuel mounts	Zico- QM-PMH-D-B
1	2.5 gall round safety fuel can	Zico- QM-RCH-2.5
2	Zico saw mounts	Zico- QM-CSM-L
6	Yates Ladder Belts/Harnesses	Model 321 (insert sizes)
6	Yates Ladder Belt/Harness Extensions	Yates 324C

B. See attached Inventory sheet for additional equipment list to be carried on the apparatus but not supplied by the bidder. Yes____ No____

C. Optional equipment, that may be purchased under the “options” section, will also be carried and mounted on the apparatus. Yes____ No____

3.0 Chassis and Vehicle Components: (NFPA Chapter 12)

3.1 ***Chassis:*** Chassis shall be custom style and designed specifically for fire department use. The frame will be built to all applicable industry standards and shall be of sufficient construction and integrity to prevent warping, metal fatigue and stress under the rough terrain and arctic conditions of Fairbanks, Alaska. Yes____ No____

All component installations shall also be to acceptable industry standards. Yes____ No____

3.2 The chassis shall be a 2019 or newer custom fire truck chassis (Spartan Gladiator LFD or bidders equivalent) matching as closely as possible in layout and functionality a chassis built for the Fairbanks Fire Department in 2014. Yes____ No____

Reference information provided in this specification in section 1.1(B). This apparatus was built as a Heavy Rescue, the purchaser seeks a largely comparable chassis set up for a Quint Aerial Ladder Platform. Items in the older chassis spec as they apply solely to a Rescue/Special Service fire apparatus and are not needed to meet this specification are not required. Bidder is responsible for matching the finished apparatus as closely as possible with changes as required for the new motor specified, model year changes as well as some updates contained within these specifications. The purchaser will assist in supplying any documentation, pictures and references to ensure the chassis are built as close to the referenced model as possible for continuity of crews. Yes____ No____

Some items have been updated within this specification. Examples include a change to the ISX 500 model motor. If contradictions exist between the old build document and this specification, clarification from the purchaser is to be requested and purchaser retains the right to make the final decision. Yes____ No____

A. The apparatus cab will be an extended or "long" four door tilt custom cab, of open air design. Purchaser prefers "classic" or box cab design. Cab will incorporate rear lower LFD compartments with LED strip lighting. Yes____ No____

B. The cab shall be of "extreme" or heavy duty use design. Yes____ No____

C. The frame shall have a full-length frame liner. Yes____ No____

D. The cab will be designed to seat five firefighters (Captain, Driver/Engineer and three firefighters) dressed in full protective equipment. Yes____ No____

E. The cab shall have a minimum 10" raised roof over the seating area. Yes____ No____

F. The tilt cab shall be capable of safely lifting the cab loaded with equipment. Yes____ No____

1. An automatic locking device shall be provided. Yes____ No____
2. An auxiliary manual cab lift shall be provided. Yes____ No____

3. A "Cab not Latched" warning light will be provided in the cab. Yes____ No____
4. Two Cab safety bar(s) shall be built and provided by the manufacturer. This bar shall be steel and shall be used to support the cab during maintenance in case of lock failure. To be painted safety yellow and labeled "P-03". Yes____ No____
5. Cab tilt limit switch to be provided preventing damage to bumper mounted accessories. Yes____ No____

3.2 ***Engine:*** Engine shall be a Cummins X15 series diesel meeting all current emissions standards. Motor shall provide a minimum of 600 horsepower and must meet performance specifications listed in section **1.3.** Electronic oil level monitoring shall be provided. The following shall also be included: Yes____ No____

A. A Horton fan clutch will be provided- ***NOT*** to be interlocked to the Jacobs engine break. Yes____ No____

B An electric fuel re-primer pump shall be provided with a control switch within easy reach of the driver. Yes____ No____

E. A Weldon multi-plex system will be used to control all applicable vehicle systems. Two Vista display/control screens shall be provided in the cab, one within easy view/reach of the driver and one within easy view/reach of the officer, *exact locations to be determined at pre-construction conference*. Yes____ No____

1. Additional Vista displays may be utilized on the apparatus body for control or monitoring the Aerial Ladder/other vehicle systems. Manufacturers equivalent screens may be used outside of the cab. Yes____ No____

D. Air filter shall meet size and airflow requirements of the engine manufacturer and include an ember separator. Yes____ No____

1. An air cleaner resistance gauge shall be located on the dash within view of the driver. Yes____ No____
2. Purchaser will accept placement of the air cleaner resistance gauge within the engine compartment if it is within plain view through the access hatch provided for checking vehicle fluid levels, and a warning light indicating restriction is placed on the dash. Yes____ No____

E. Engine shall be supplied with a Jacobs engine brake with "High", "Medium" and "Low" settings, as well as an on/off switch. Yes____ No____

1. Activation of the engine brake will illuminate the apparatus brake lights. Yes____ No____
2. Activation of the Jacobs engine brake shall <u>not</u> engage the clutch fan. Yes____ No____

3. The engine brake shall be interlocked with the PTO and shall disengage the engine brake anytime the apparatus is shifted into PTO for pump or ladder operations. Yes____ No____
4. Jacobs 3 position engine brake shall be controlled via the VMUX and the “Smart” steering wheel. Yes____ No____

F. A Fast-Idle switch shall be provided and operated via the VMUX. Interlocks shall be provided which will prevent the fast idle from engaging unless the transmission is in “Neutral” and the parking brake engaged. If the fast idle is used in conjunction with a specified engine/transmission driven component or accessory, the fast-idle control will be properly interlocked with the engagement of the specified component or accessory. Yes____ No____

G. Air intakes will be provided, surface area will be sufficient to meet engine manufacturer recommendations. Yes____ No____

H. Access to check engine oil level, coolant level, power steering fluid, windshield washer fluid, transmission fluid level and the air cleaner restriction gauge (if not provided on dash) shall be provided without having to jack the cab. Electronic senders shall be included and utilized where available. Yes____ No____

I. LED lighting shall be provided on both sides of the engine compartment. Both lights shall be switched from the access hatch used to check fluid levels and a convenient place on the driver’s side when the cab is jacked. Yes____ No____

J. Engine shall be supplied with an oversized “quick build” air compressor, min 18.5 cfm, or the largest available from the engine manufacturer. Yes____ No____

L. Engine shall be programed not to de-rate power affecting drivability/response, fire pump or aerial ladder usage if the Diesel Exhaust Fluid was to leak out, freeze, or the tank emptied. Bidder must be able to provide this information at the prebuild conference. Yes___ No____

1. DEF Tank shall be protected from freezing by mounting in a warm, protected location. Electric or coolant supplied heat shall be provided. Yes___ No____
2. DEF Tank shall be a minimum of six (6) US gallons. Purchaser would like options of up to 10 US gallons or more if available. Yes___ No____
3. DEF Tank shall have a Blue filler cap and be accessed from the Drivers side of the vehicle in an area not immediately adjacent to the fuel fill yet easily accessible- such as the rear cab intermediate step or similar location. Shall not accept a standard diesel fuel nozzle. Must be readily accessible without the use of special tools. Yes___ No____
4. DEF tank and filler must be clearly labeled and identified. Yes____ No____

3.3 ***Cooling system:*** Radiator will be of a heavy-duty type, will meet engine manufacturer recommendations, and will be sufficient to cool the engine during strenuous operations in warm temperatures. Proof that radiator size meets all engine manufacturer recommendations will be provided. Required filters shall be included. Electronic fluid level monitoring shall be provided. Yes____ No____

A. All coolant and heater lines shall be arctic grade silicon-based rubber and rated to -50 degrees F. **No Exception.** Yes____ No____

B. A minimum one and one half (1 ½) gallon coolant recovery system will be provided and mounted in a location that is easily accessible. Yes____ No____

C. Coolant additive will be provided as required by the engine manufacturer. Yes____ No____

D. Coolant shall be rated to minus 50 degrees F (-50F), No exception. Yes____ No____

E. Radiator will include a site glass for checking fluid level. Yes____ No____

F. A drain shall be provided in the lowest point of the cooling system to facilitate maintenance personnel draining and changing coolant. Yes____ No____

G. An oil cooler shall be incorporated as specified. Yes____ No____

H. An Auxiliary Engine Cooler from the fire pump shall be included as specified later. Yes____ No____

3.4 ***Cold Weather Package***: This package must be able to protect the apparatus to minus fifty (-50) degrees F. Any additional winterization equipment (above what is specified below and elsewhere in this specification) deemed necessary by the manufacturer to meet the intent set forth in this specification shall be included and indicated in the bid package. Yes____ No____

A. A 120V AC engine block heater will be provided, wattage not to exceed 1000W. An auto-eject plug, separate from shoreline, shall be provided with a red cover and labeled "Engine Heater". Shall be mounted either over driver side front tire or on the front body/bumper extension on the driver side. Yes____ No____

B. A Racor 700 series system saver heated fuel/water separator shall be provided. Yes____ No____

C. An external snap on radiator cover made of Hypalon shall be included. There shall be a center portion that unzips and folds back to improve airflow during moderate winter temperatures. *Details available at the pre-build conference, photo available upon request.* Yes____ No____

D. All hoses, including but not limited to heater and coolant lines, shall be arctic grade silicon-based rubber. Documentation must be provided that shows the temperature rating of hoses used meet this specification. Yes____ No____

E. All heater lines shall be insulated with foam style pipe insulation or equivalent and securely fastened. Yes____ No____

F. All braided lines including brake lines, power steering lines and fuel lines shall be arctic grade. Documentation must be provided that shows the temperature rating meets this specification. Yes____ No____

G. All fuel lines shall be insulated using closed cell foam pipe style insulation from the tank to the Engine compartment. Yes____ No____

H. All hydraulic lines shall be arctic grade and rated to -50F. Yes____ No____

I. All chassis grease shall be arctic grade, rated to -50F. Yes____ No____

J. All fluids including transmission fluid, power steering fluid and engine oil shall meet manufacturer's standards for the temperature range this vehicle is specified to operate in (-50F to + 90F). Yes____ No____

K. If for shipping purposes greases and fluids other than specified must be used, the manufacturer will service the apparatus with the appropriate fluids and greases upon arrival in Fairbanks. Process to be supervised by City of Fairbanks Public Works Department. Yes____ No____

L. Extra cab insulation shall be provided on the floor, walls and ceiling to meet arctic requirements. Yes____ No____

M. Any diesel exhaust fluid or alternate items used to meet new emissions requirements must be protected from freezing (heated or stored in a heated area) to temperatures of -50F as specified above. Yes____ No____

N. Hydraulic fluid heaters shall be provided for the aerial ladder platform hydraulic fluid reservoir in case the vehicle must idle or operate outside for extended periods of time when temperatures are below 0 degrees F. Yes____ No____

1. These may be either AC powered off the on-board generator or 12V powered if sufficient to meet the intent. Shall be controlled via a labeled switch in the driver's area. Yes____ No____

3.5 ***Exhaust:***

A. Exhaust system shall be adequate to meet the performance needs of the specified engine and shall exit vertically out of the top of the apparatus on the officer side. Exhaust outlet shall direct exhaust up and towards the curbside side of the vehicle. Cummins has a staggered or "switchback" set-up for the DPF and components that better facilitates vertical exhaust. This should be considered for use if required to allow the vertical exhaust set-up specified to be used. Yes____ No____

B. The exhaust stack shall run vertically through the enclosed pump compartment specified later to provide additional heat during winter operations. Yes____ No____

C. The exhaust stack will have a stainless-steel finish and will be heat shielded when passing through areas where equipment will be stored or personnel may come into contact with exhaust components, such as any dunnage compartment. Yes____ No____

D. Any wire harnesses or hydraulic lines shall be shielded if they are in close proximity to any exhaust components. Yes____ No____

3.6 ***Brake system:*** Brakes shall be air brakes that meet FMVSS-121 and NFPA standards. Brakes shall be provided with automatic slack adjusters and if drum brakes are used they shall be provided with dust covers. <u>Purchaser would like to consider all wheel disc brakes if available.</u> Yes____ No____

A. Brakes shall be all wheel anti-lock brakes. Yes____ No____

B. Brakes will include an Automatic Traction Control (ATC) feature that limits wheel spin. An override feature, in the form of a dash mounted switch or through the VMUX, will be provided for the ATC to allow wheel spin when stuck in mud or snow. Yes____ No____

C. A system saver 2000 heated air dryer will be installed. Yes____ No____

D. Heated automatic moisture ejectors will be provided on all air reservoir tanks. Yes____ No____

E. Manual pull cords for draining all air tanks will also be provided and will be routed to the edge of the apparatus body making them easily accessible from either side of the apparatus without having to climb under the vehicle. All pulls shall be labeled and operate without impingement. Yes____ No____

F. All airlines will be arctic grade, rated for operation to -50 degrees F. All hoses shall be neatly clamped and protected from chaffing. May be braided or polymer in construction. Yes____ No____

G. A male air connection (matching current FFD apparatus) for external station supplied air to keep the brake system charged, with auto-ejection feature, will be provided in a location to be discussed at the pre-build conference. Yes____ No____

1. The cover for the external supplied air inlet shall be <u>GRAY</u> and located over the driver's side front tire. To be labeled "AIR" Yes____ No____
2. Four (4) female fittings that fit the auto-eject feature shall be supplied with the vehicle (FM-3). Yes____ No____

H. A parking break release will be mounted in the cab within reach of the Driver and the Officer from a seated and seat belted position. A red indicator light that is illuminated when the parking brake is activated will be located in the instrument cluster. Yes____ No____

I. An interlock will be provided turning off the high idle when the parking brake is released. Yes____ No____

J. Air system will be a quick build-up system. Compressor shall be the largest available from Cummins (min 18.5 cfm) and of sufficient size to allow the vehicle to move within 60 seconds from "0" air pressure. **No Exceptions.** This shall be tested during acceptance testing. Yes____ No____

3.7 ***Axles:*** The axles shall be Meritor axles of heavy duty design. Axle capacity and suspension components shall be commensurate with the estimated in-service weight of the apparatus and meet the GVWR detailed in sections 1.2(E) of this specification. Gear ratios will be appropriate to meet performance requirements of the vehicle set forth in section 1.3 of this specification. Yes____ No____

A. This vehicle will be a straight chassis with 3 axles, one (1) front and two (2) or tandem rear axles. Yes____ No____

B. The front axle shall be of a minimum GVWR to meet sections 1.2(E), but shall not be rated at less than 22,500 lbs. Upon completion, the vehicle front axle weight shall not be within 2,500 lbs of the front axle max GVWR. Yes____ No____

<u>The purchaser wants an independent front suspension for improved ride and handling. If available the vehicle shall be bid with this feature, Preference may be provided to manufacturers who meet this requirement.</u> Yes____ No____

C. The rear axles shall have a combined minimum GVWR of at least 60,000 lbs, greater if necessary to meet section 1.2(E) of this specification. These axles shall utilize dual tires; the use of "super singles" is not acceptable. Yes____ No____

D. To improve handling the front suspension will be of independent design and commiserate with the weight and performance requirements of this vehicle. Yes____ No____

Preference may be provided for this feature. If not available from the bidder, apparatus shall be designed with a tapered leaf spring and solid Meritor front axle designed to meet the GVW and performance requirements of this vehicle while providing the smoothest ride possible.

E. Rear suspension system will be heavy-duty SAF Holland-Neway air ride suspension system and will be designed to meet the GVW and performance requirements of the vehicle. Yes____ No____

F. Heavy duty premium grade shocks shall be provided wherever shocks are utilized in the suspension package. Yes____ No____

G. Apparatus and suspension shall be designed to operate off paved roads allowing for sufficient wheel travel and clearance for the use of tire chains. Yes____ No____

H. The rear axles shall have a driver-controlled axle interlock feature to allow both rear axles to provide power and drive the apparatus when additional traction is required. This shall be readily accessible to the driver without exiting the cab. An indicator light showing it is engaged shall be provided. Use of the VMUX for this control is acceptable. Yes____ No____

I. The rear axles shall have a driver controlled differential lock feature. This differential lock shall be easily accessible to the driver and not necessitate exiting the cab. An indicator light showing it is engaged shall be provided. Use of the VMUX is acceptable. Yes____ No____

J. Axles shall utilize synthetic grease and oil meeting the temperature specifications mentioned previously in the specification. Yes____ No____

K. The rear axle will be provided with On-Spot brand automatic tire chains. Yes____ No____

1. A switch, protected from accidental activation, will be provided within easy reach of the driver in the center switch panel by the driver or controlled via the VMUX. Yes____ No____
2. An indicator light showing when the chains are in use shall be provided. Yes____ No____
3. Labeling shall be provided within view of the driver listing the maximum speed rating for the automatic chains. Yes____ No____
4. Tire chains shall be interlocked to automatically disengage before exceeding the maximum recommended speed. Yes____ No____

3.8 ***Auxiliary air outlets:***

A. Two auxiliary air outlets, equipped with Paratech® female couplings shall be provided. These shall be placed one each on both the driver and officer Yes____ No____

side pump panels and powered from the vehicle motor air compressor. *Fitting part number available at pre-build conference.*

B. Quarter turn valves will be provided to isolate the fittings in case of a leak and shall be located next to the coupling capable of being operated without having to climb under the vehicle. Yes____ No____

3.9 ***Power steering:*** Apparatus will have power assisted steering via a Vickers power steering pump, meeting NFPA and FMVSS guidelines. Electronic fluid level monitoring shall be provided. Yes____ No____

A. Relief stops will be provided to reduce system pressure upon full wheel cut. Steering system components will be installed in accordance with manufacturer recommendations. Yes____ No____

B. Power steering lines will be arctic grade. Synthetic fluid (-65F) will be used. Yes____ No____

C. Steering wheel (18") will be vinyl padded and shall have tilting and telescoping capability. Yes____ No____

1. There shall be a center hub mounted horn button for control of the electric vehicle horn and air horns. Yes____ No____
2. There will be a self-canceling turn signal lever that also controls the high beam headlights. Yes____ No____
3. A switch controlling the four-way hazard flashers shall be provided. Yes____ No____
4. Vehicle shall be equipped with a "smart" steering wheel allowing the operator to control various options without releasing the steering wheel such as the cruise control, radio PTT and other programmable features to be determined at the pre-construction conference. Bidder to list available options in the bid document. Yes____ No____
5. Clearance for the driver to manipulate the steering wheel safely throughout its adjustable range without striking the dash, A-pillar or any grab handles shall be required. Yes____ No____

3.10 ***Tires:*** All tires shall be new Michelin brand and their maximum weight rating shall be commiserate with the maximum GVW and performance of the vehicle, speed rated to match. *<u>All tires to be sipped for maximum winter traction</u>*. Yes____ No____

A. Rear tires shall be Michelin mud and snow (lug) tread, size to match GVW of apparatus. The use of "super single" tires is not acceptable on the rear of the apparatus. Yes____ No____

B. Front tires shall be Michelin all position tread, size to match GVW of apparatus. Narrower tires are preferred as they are better on snow and ice. Yes____ No____

C. All tires to be sipped, balanced and speed rated. Yes____ No____

3.11 ***Wheels:***

A. Front wheels shall be ALCOA forged aluminum with matching hub and lug nut covers. Yes____ No____

B. Rear wheels shall be ALCOA forged aluminum with matching hub and lug nut covers. Yes____ No____

C. Valve stem extensions shall be supplied from the inner duals to aid in checking tire pressures and filling as necessary. Yes____ No____

D. NFPA required tire pressure monitors shall be provided for all tires. If available, electronic tire pressure monitors shall be utilized. Yes____ No____

3.12 ***Fender liners:***

A. Apparatus cab and body will be provided with <u>replaceable</u> stainless steel, ABS composite or polycarbonate fender liners for the front and rear wheels. These will provide full protection for the apparatus body in case of tire chain failure, the strongest material available is preferred. Yes____ No____

B. Polished aluminum or stainless steel replaceable fenderettes will be provided for all wheels. Yes____ No____

C. Mud flaps/splash guards will be provided for all wheels. Yes____ No____

D. Adequate clearance for tire chain use will be provided, front and rear. Yes____ No____

3.13 ***Ground Clearance:*** Apparatus shall meet the NFPA requirements for ground clearance, angle of approach and angle of departure. Vehicle must be designed for use on rough roads including unpaved gravel and snow packed streets. Yes____ No____

3.14 ***Transmission***: Apparatus shall be equipped with an Allison automatic transmission designed for emergency vehicle use and meeting the performance specifications of apparatus as well as engine manufacturer requirements. Yes____ No____

A. Transmission to be installed within manufacturer's recommendations. Yes____ No____

B. Temperature and fluid level senders/gauges to be provided. Electronic oil level indicator and transmission temperature gauges are to be included. Yes____ No____

C. A backlight, touch-pad style shift control will be mounted in the cab convenient to the driver. Yes____ No____

D. A transmission oil cooler shall be provided. Yes____ No____

E. Drivelines are to be dynamically balanced. Yes____ No____

F. Transmission fluid and lines shall be rated to meet arctic requirements of this specification. Yes____ No____

G. An interlock shall be provided to automatically disengage the fast idle when the transmission is shifted from neutral. Purchaser will accept an interlock that prevents the transmission from going into a gear other than neutral until the fast idle is switched off. This shall be indicated by the selected gear flashing on the touchpad display pad. Yes____ No____

H. A solid-state back-up alarm shall be provided in accordance with NFPA. Yes____ No____

I. Transmission to be provided with "Park to Neutral" feature if applicable. Yes____ No____

J. Transmission shall be appropriately interlocked for pump/aerial/accessory use. Yes____ No____

K. Transmission to have appropriate gear ratios to meet performance specifications listed earlier and fire pump/aerial requirements. Yes____ No____

3.15 ***Fuel System***: Apparatus shall have a <u>minimum</u> 65-gallon fuel tank (75-100 US gallons is preferred). Tank shall be mounted between the frame rails and be capable of being filled through high volume fuel pumps. If a larger fuel tank is available, the purchaser would like it bid as an option (See Options section). Yes____ No____

A. A fuel tank drain plug shall be provided. Yes____ No____

B. Fuel filtration will meet the requirements of the engine manufacturer. Yes____ No____

C. Isolation valves will be placed on each side of the fuel filters to prevent the loss of prime while changing filters during maintenance. Yes____ No____

D. All fuel lines and return lines shall be insulated (foam pipe style insulation) from the tank to the engine compartment and shall be arctic grade. Yes____ No____

E. There shall be a loop (min 8' long) of extra fuel line allowing the tank to be dropped and serviced. Yes____ No____

F. A fuel fill pocket, stainless steel or cast aluminum with a hinged door, will be provided on the left side of the apparatus in the wheel well area. This will be clearly labeled "Diesel Fuel". The cap shall be supplied with a retaining device to prevent loss. Yes____ No____

G. A Racor 700 series heated fuel/water separator with drain will be provided as previously specified. Yes____ No____

H. Electric fuel re-primer shall be provided as previously specified. Yes____ No____

I. Fuel gauge sending unit shall be easily accessible for repair or replacement, preferably without dropping the fuel tank. Yes____ No____

J. A cab and pump panel mounted fuel gauge shall be provided & be accurate to tank level and each other. Shall utilize/share a single sending unit. Yes____ No____

3.16 ***Tow eyes:*** Apparatus shall have front and rear tow eyes and front and rear tow bar attachment points capable of towing and lifting the apparatus without damage. Tow hooks must be accessible without opening compartment doors or the removal of vehicle components. Yes____ No____

3.17 ***License plate brackets:*** Front and rear license plate brackets will be provided. Rear license plate bracket shall incorporate LED lighting. Yes____ No____

3.18 ***Front bumper:*** Vehicle shall have an "Extreme Duty" steel 24"extended front bumper with tread plate cover and gravel shield. Bumper shall be re-enforced to support personnel standing on it and the mounting/storage of equipment. Yes____ No____

A. The bumper shall be painted, matching the red paint specified for the cab and body. The leading edge and sides shall be finished with the Red/Yellow reflective chevron striping matching the rear of the apparatus consistent with current FFD apparatus. Yes____ No____

B. The bumper shall include a center storage compartment allowing a pre-connected 150' triple layer 1.75" hose load and nozzle to be safely stored. Pre-connect will be plumbed to the fire pump specified later. It shall be provided with a hinged and latched tread plate lid with a handle that allows access while wearing gloves, a hold open device and use rubber T-handle type closures. It shall be sealed from road grime. To be lined with turtle-tile or equivalent material matching the other compartments. Ventilation grates, similar to those used in body compartments shall be installed. This compartment shall be lighted and tied into the compartment warning light. Yes____ No____

1. A drain hole will be provided in any storage compartment to facilitate cleaning. This drain hole shall be sealed with a rubber or threaded plug for normal operations. Yes____ No____
2. 2 additional plugs shall be provided with the apparatus. Yes____ No____

C. One 12" South Park Chrome fire bell with an eagle on top shall be provided and installed on the officer's side of the front bumper. Bell shall utilize an Yes____ No____

electric actuator controlled from the officers seating position. Bell shall be 12” tall, 16” including the eagle. Bell shall have an upper circumference of 21” and a lower circumference of 36”.

D. A minimum 12” grab handle shall be provided on the front center of the cab to facilitate washing the windshield. Yes____ No____

E. Sirens, speakers and air horns to be mounted in or on the front bumper are specified in section 4.6. Yes____ No____

F. Bumper shall be provided with vertical indicators at each forward corner. Posts shall be chrome or stainless steel and extend high enough to be visible to the driver and topped with an amber LED light. Yes____ No____

G. Two (2) OnScene Solutions 18" LED Nightstik (or equivalent) ground lights shall be mounted below the front bumper. The ground lights shall be activated when the parking brake is set. Yes____ No____

3.19 ***Crash protection/Airbags:*** Vehicle safety is a primary design concern of the Fairbanks Fire Department. This vehicle shall be equipped with all NFPA required crash protection as well as the following; Yes____ No____

A. Vehicle stability, anti-roll over protection. Yes____ No____

B. Retracting seatbelts designed to work with the air bag system. Yes____ No____

C. Driver, passenger and rear cab airbags to include but not limited to front impact protection, side impact protection, roll over protection and any additional devices such as knee bolster bags that the manufacturer has available shall be included. Please provide details in the bid package. Yes____ No____

4.0 Low-Voltage Electrical Systems and Warning Devices (NFPA Chapter 13)

A. The vehicle electrical system shall be 12V and shall be multi-plex. Yes____ No____

B. All multi-plex components must be guaranteed to operate to -50 degrees F. Yes____ No____

C. A Weldon VMUX system will be used to control all applicable vehicle systems. At least Two Vista display/control screens shall be provided in the cab, one within easy view/reach of the driver and one within easy view/reach of the officer, *exact location to be determined at pre-construction conference*. Both to be programmed identically and independently. Yes____ No____

D. VMUX Shall include the internal GPS and remote exterior temperature sensors. Yes____ No____

E. Free re-programming of the VMUX shall be provided for use after the vehicle is placed in service and any needed changes are identified to maintain consistency with other FFD apparatus. Manufacturer will supply programming for FFD to re-program as required in the future. Yes____ No____

F. Additional Vista displays (or manufacturers equivalent) may be used to operate or monitor other vehicle systems such as the aerial device and outriggers and located at the pedestal, platform control stations and/or pump panel. Yes____ No____

4.1 ***Battery charger:*** A Kussmaul Auto-charge 1200 shoreline powered battery charging system that charges both the main chassis batteries and any isolated battery supplied shall be provided. Yes____ No____

A. Kussmaul battery charger shall include an AC and 12V air pump to provide air to the brake system, an auto drain and display. Unit shall be set to supply air when chassis air pressure drops to 60 psi and cut off at 90 psi. Yes____ No____

B. The shoreline will be an auto-eject style connection of sufficient size to meet the amperage rating of everything connected to the shoreline plus a reserve. Yes____ No____

C. Shoreline and engine heater will be through separate auto-eject plugs. Yes____ No____

1. Shoreline shall have a YELLOW cover and be labeled "Shoreline".
2. Engine heater shall have a RED cover and labeled "Engine Heater".
3. External Air supply shall have a GRAY cover and labeled "Air".

Yes____ No____ **(1-3)**

D. Connections (shoreline, engine block heater and air), along with battery charger display (LH mid glass), are to be mounted on the exterior of the vehicle above the front tire on the driver's side of the apparatus. Yes____ No____

1. The Red block heater connection shall be located on the driver's side, on the cab body just above the side of the front bumper if room will not permit placement over the driver's side front tire. Yes____ No____
2. The yellow shoreline connection shall be located next to the grey air connection on the driver's side over the front tire. Yes____ No____
3. The Kussmaul battery charger display shall be mounted so that it is visible through the side window behind the driver's door. Yes____ No____

4.2 ***Batteries:*** All chassis batteries will be 12V dry cell Odyssey PC2150 series batteries controlled through a heavy-duty master disconnect switch located within easy reach of the driver upon entering or exiting the cab, mounted to left of the steering column. Yes____ No____

A. All batteries will be enclosed in a box or boxes to protect them from road grime, dirt and water. Batteries shall be mounted on non-corrosive matting. Easy access to the batteries will be provided for maintenance. Yes____ No____

B. A "Battery on" indicator light will be provided in plain view of the driver. Yes____ No____

C. A distribution box, mounted on the frame of the apparatus near the batteries, shall be used for any small gauge wires that need to be connected to the batteries. Yes____ No____

D. Remote jump start terminals will be provided on the driver side of the apparatus in the drivers step well or another location accessible without lifting the cab. Color coded covers, matching polarity, will be provided to protect the terminals. Yes____ No____

4.3 ***Alternator:*** The alternator shall be minimum 320A, serpentine driven and of sufficient amperage to meet all aspects of NFPA 1901 plus allow operation of the following at idle speed: Yes____ No____

A. All 12-volt scene lights, compartment lights and ground lights. Yes____ No____

4.4 ***Load Management System:*** Weldon VMUX will provide the load management system and be capable of load sequencing, load shedding, fast idle control, low voltage warning, scene mode operation and response mode operation. Yes____ No____

A. This system shall meet NFPA standards and shall be installed per manufacturer recommendations. Yes____ No____

B. All required emergency lights shall be controlled via this load management system and offer a one switch/button control of all the required emergency lights. Yes____ No____

C. *Sequence control to be discussed at pre-build conference. Heaters are not to be tied to load shedding until the last possible moment due to our environmental considerations.* Yes____ No____

4.5 ***Emergency Lights:*** Emergency Lights shall meet all requirements of NFPA 1901, most current Edition. Yes____ No____

A. **Upper level warning devices:**

1. Zone "A" (front):

a. Shall have one (1) Federal Signal eight pod Split Vision SLR LED light system (Model # VSLR8S-NFPA) mounted on the cab roof, 4 pods per side. Colors will include two red, one clear and one blue light pod per side. Order from inboard out shall be Red, White, Blue, Red. Yes____ No____

2. Zone "C" (rear):

a. Rear Upper: Shall have two (2) Federal Signal 24" LED low profile LED light bars, split with red and blue lights mounted high on the outer corners of the apparatus. With the Aerial style body and turntable, it is understood use these exact lights and/or locations may not be practical. Purchaser will accept a similar Federal Light substitution. Please provide details with the bid. Yes____ No____

b. Directional warning device: One (1) Federal LED CN "Signal Master" eight lamp amber directional device shall be recess mounted in the center of the upper rear of the apparatus in Zone "C". *Use of a split light or programmed individual lights to accommodate design/engineering is acceptable*. Yes____ No____

i. This device will activate with the rear beacons and default to a warning/random flash mode. To be controlled via the VMUX Vista displays. Yes____ No____

ii. It will also be capable of operation independent of the rear beacons via the VMUX. Yes____ No____

B. **Lower level warning devices:**

1. Sixteen (16) Federal QL64XFC-RB (or equivalent) LED warning lights shall be installed in the following manner: All shall match and Yes____ No____

be split red/blue and set to random flash patterns so no "blackout" occurs. Yes____ No____

a. Two lights on the front of the apparatus, one on each side, in a bezel with the front LED turn signals. Color to be split red/blue for each. Yes____ No____

b. Two lights on the rear of the apparatus, one each side and mounted low, to be split red/blue in color. These lights shall be mounted in the lowest position of a vertical 4 position aluminum casting along with the LED turn signals, LED back-up lights and LED tail/brake lights. Yes____ No____

c. Two lights mounted in a polished aluminum bezel, one each side above or between the rear tires. Color to be split red/blue. If there is not enough space for these lights due to body design, purchaser will accept one red and one blue LED Federal Micropulse (or equivalent) light positioned just forward and just behind the rear tire in its place. Yes____ No____

d. Two lights mounted in a polished aluminum bezel, one on each side centered over each front tire. Color to be split red/blue. Yes____ No____

e. Two lights, one mounted high on each side (R & L) of the Aerial body, either on the rearward side of the cab or over the pump panel area. Color to be split red/blue. Yes____ No____

f. Two lights will be mounted one each on the lower front corner of the apparatus mounted in a polished aluminum bezel, on on each side of the front bumper extension. Color to be split red/blue. Yes____ No____

g. Four lights in polished aluminum bezels shall be mounted on the Platform basket. Two will be mounted on the leading edge facing forward and one will be mounted on each the left and right sides (total 2) as far forward as possible to act as intersection lights. Color to be split red/blue. Yes____ No____

C. **Opticom:** An Opticom traffic control system shall be included and programmed for non-latching. Yes____ No____

1. The Opticom transmitter shall be mounted centered on the platform basket facing forward unobstructed for traffic light pre-emption. Yes____ No____
2. The Opticom shall activate automatically with the master emergency lights switch. Yes____ No____
3. The Opticom shall automatically disengage when the vehicles parking brake is engaged. Yes____ No____
4. The Opticom shall be shielded from damage without obstructing transmitter. Yes____ No____

D. **Door flashers/Marking**:

A. There shall be one Foster (or equivalent) brand amber LED directional light bar flush mounted in the top center interior surface of each passenger compartment door, activated when the door is opened. These lights will be visible to approaching traffic when a door is opened and indicate direction of travel away from the vehicle. Yes____ No____

B. The inside of each interior door will have NFPA compliant reflective tape in a Chevron patterns on the lower 1/3 of the door. Color to match the rear striping of the apparatus. Yes____ No____

E. **Emergency Light Controls**: Switching/Sequencing controls for emergency lights shall be via the VMUX system. Yes____ No____

4.6 Sirens*:*

A. One (1) Federal model PA 4000 200W electronic siren with PA microphone shall be recess/flush mounted in the cab within easy reach of the drivers seating position. This shall be connected to two (2) Federal MS 100 100W Dynamax flush mount electronic siren speakers mounted in each side of the front bumper. Federal covers to be provided for protection. Yes____ No____

B. One (1) Federal Q mechanical siren shall be included and mounted on, or recessed in the front bumper. Mounting to be discussed at pre-build conference. If recess mounted, protection bars shall be provided. Yes____ No____

1. Q Siren controls will be via both the drivers and officers VMUX control screens and include both activation and siren brake buttons. Yes____ No____

4.7 ***Air Horns:*** Apparatus shall be provided with (2) two Grover Stuttertone 24" chrome plated air horns recess mounted in the front bumper. Yes____ No____

A. The air horns will be controlled by the steering horn button on the driver's side and also by a labeled momentary style switch or button on the officer's side dashboard as well as from the pump operators panel. Yes____ No____

B. An air horn/electric horn selector switch shall be provided on the dash for the drivers steering horn button. Yes____ No____

C. Air horn valves shall be placed inside the cab area (heated area) or inside the engine tunnel to prevent freezing. **No Exceptions.** Yes____ No____

D. Air horn air lines shall not be looped and will be routed as not to accumulate and hold condensate/fluid. Yes____ No____

E. Air horns shall operate from an isolated air tank with valves to protect from Yes____ No____

depleting the air supply for the apparatus brakes.

4.8 ***Spot light:*** A cab mounted hand held 750,000 candle power LED spotlight will be provided with a 12V cigar style plug. Mounting hardware shall be included and installed within easy reach of the driver and officer. *Location to be determined at the pre-build conference.* Yes____ No____

4.9 ***12V Scene lighting:*** Ten (10) Federal Commander or equivalent FRC 12V LED scene lights shall be provided and flush mounted on the apparatus cab/body. Lights to be sealed to prevent moisture and provide a minimum of 20,000 Lumens each. Note: Additional AC lighting is specified on Platform basket later in this document. Yes____ No____

A. One shall be mounted high on each side of the cab between the front and rear cab doors or just aft of the rear cab doors. (Total 2) Yes____ No____

B. Two shall be mounted high on each side of the apparatus body at locations to be determined at the pre-construction conference based on body design. (Example over pump panel and near turntable-Total 4) Yes____ No____

C. Two mounted on the front leading edge of the Cab or Platform Basket to function as Brow lights. Yes____ No____

D. Two mounted high on the rear of the apparatus, one per side. Yes____ No____

E. These ten (10) lights are in addition to the NFPA required ground lights. Yes____ No____

F. These lights will be controlled via the VMUX displays inside the cab. Switches are to be separate for Brow, right, left and rear lights. *Exact light mounting location to be discussed at the pre-build conference.* Yes____ No____

4.10 ***Exterior 12V lighting:*** LED Ground lighting compliant with NFPA section 13.10.1 shall be provided. Yes____ No____

A. All body ground lights shall activate automatically upon application of the vehicles parking break. Yes____ No____

B. All cab mounted ground lights shall activate by opening the cab doors <u>and</u> all shall be activated with the apparatus parking brake. Yes____ No____

C. Cab must have one ground light per exterior door. Yes____ No____

D. Body must have ground lights under each pump panel and under each full height compartment door in addition to manufactures standard placement. Yes____ No____

E. Two (2) LED strip ground lights shall be mounted below the front bumper

and two (2) below the rear panel/bumper of the apparatus (total 4). The ground lights shall be activated when the parking brake is set. These lights shall illuminate the ground area for working in front and behind the apparatus. Yes____ No____

F. All body walkways and working areas shall be lit in compliance with NFPA standards. Yes____ No____

G. Any walkways/ladders used for access shall be lit. Any fold down steps shall have integrated LED lighting. Yes____ No____

4.11 ***Running Lights:*** All DOT required running lights, including headlights, clearance lights, marker lights, tail lights, brake lights, back-up lights and turn signals shall be LED. Federal lights shall be used were possible. All FMVSS running lights and reflectors shall be provided. Yes____ No____

A. Back-up lights shall be LED. Turn signals to be Federal LED Quadraflare. Yes____ No____

B. Rear 12V scene lights, the rearward side mounted 12V scene lights and the lights over the rear tires (See "G" below) shall be tied into the back-up lights and activate when the vehicle is placed in reverse. A cut-off switch shall be provided to deactivate this feature. Yes____ No____

C. Two LED dual headlights (High beam and Low beam) shall be provided in a chrome bezel and will include a daytime running light feature. Yes____ No____

D. Rear lights (turn, tail/brake, back-up, and lower level warning) shall be in an aluminum vertical cast 4 position bezel. Yes____ No____

E. There shall be marker lights on the lower rear corners of the apparatus that extend approximately 6" from the apparatus on flexible rubber mounts. (Britax or equivalent) Yes____ No____

F. Front LED clearance lights shall be face mounted. Yes____ No____

G. Angled, recessed mounted LED lights shall be provided either between the rear duals or just rearward of the rear tires providing additional illumination to the rear and sides while backing. These lights shall be wired into the back-up light circuit and the ground light circuit. Yes____ No____

5.0 Driving and Crew Area: (NFPA Chapter 14)

5.1 Cab will be a custom extended 4 door raised roof tilt cab (Similar to Spartan Gladiator LFD custom cab) matching the referenced chassis orders. Cab area shall be provided with extra insulation to maintain crew comfort in temperatures to –50 degrees F. Interior cab trim will be of extreme duty design and ergonomically engineered to be user friendly and comfortable for the driver, officer and crew. Crew Safety is a paramount design concern. Yes____ No____

As part of the "extreme duty" or heavy-duty package metal interior finish components such as inner door panels, engine tunnel and dash board (where appropriate) shall be metal and covered with silver/gray Zolotone textured finish or a comparable finish. Use of plastic interior pieces should be minimalized and confined to non-wear areas only. Yes____ No____

A. Interior trim color shall be primarily gray. Metal= silver/grey zolotone or equivalent. Fabric= gray. Yes____ No____

B. Access panels will be provided to allow for easy removal and maintenance of all switches and gauges. Yes____ No____

C. The instrument panel, warning lights and gauges will be custom mounted in a non-glare panel located directly in front of the driver and easily removable for maintenance. Yes____ No____

D. Vinyl padded sun visors w/ separate plastic tinted vision extensions and retaining clips will be provided. Yes____ No____

E. All cab glass shall be tinted with solar management treatment to reduce cab heating and damage from UV radiation. Yes____ No____

F. Cab front side windows shall utilize electrically heated glass to assist with defrosting, controlled through the VMUX. If available, rear windows will be provided with heated glass as well. Yes____ No____

G. All windows shall be electrically controlled from their associated seating position via a momentary switch. Driver shall also have control of all power-controlled windows from their seating position. Yes____ No____

H. Cab floor will be covered with a vinyl composite non-slip flooring, such as Du-Rug or equivalent. Flooring must comply with NFPA noise and heat requirements and shall be insulated for the arctic conditions in which this vehicle will operate. Floor shall be BLACK in color. Yes____ No____

I. Engine enclosure:

1. The engine enclosure will be compatible with the basic interior cab trim and will be designed to not impede the driver’s vision in any direction. Yes____ No____

2. The enclosure also will allow maximum “elbow room” and not impede the drivers range of motion necessary to safely operate the vehicle. *Purchaser is interested in low profile engine enclosures.* Yes____ No____

    a. Driver area shall have the maximum room available based on cab design. Minimum width shall be 26” from engine enclosure to door. Yes____ No____
    b. Minimum length (from leading edge of seat when fully retracted to dash) shall be at least 20”. Yes____ No____

3. The engine enclosure will have additional insulation to reduce engine noise in the cab. Yes____ No____

4. A storage bin with integrated map book/binder storage will be provided on the engine cowling between the drivers and officers seating positions. Yes____ No____

    a. This compartment will have a hinged latching lid with gas strut hold open device capable of storing loose equipment. The hinge will be placed rearward, so the compartment can be opened and accessed from both the driver and officer seating positions. See pics included. Yes____ No____
    b. Compartment will be constructed from 1/8” aluminum and finished to match the interior. Yes____ No____
    c. Cup holders for the drivers and officer’s seating positions shall be integrated. Yes____ No____
    d. EMS glove holder and an open storage trays shall utilize remaining available space between the front seats. Yes____ No____
    e. A secure divided storage bin designed for binders, similar to those already in use by FFD, shall be incorporated into the front of the storage area between the forward cab and rear cab storage compartments. (see diagram/Pics) Yes____ No____
    f. Rear cab storage which is related to this is specified later in the bid document. Yes____ No____
    g. Pictures and dimensions will be made available with this bid package. Yes____ No____
    h. Design and construction will be further discussed at the pre-build conference. Design will match existing storage compartments in use by the department on previous multiple apparatus. Photo and diagrams with dimensions will be Yes____ No____

provided with the bid package and at the pre-build conference. Yes____ No____

i. Expense of fabricating these storage bins and any re-enforcement plates or mounting brackets required shall be included in bid price. Yes____ No____

5. A flat surface capable of supporting a map book and a Mobile Data Terminal/Tablet (MDT) shall be provided on the officer side in the front cab of the apparatus. The mount shall slide, allowing the MDT to move closer to the officer. GTECH tablet and mount required will be provided by the purchaser, to be installed by bidder. Model and additional details regarding power supply to be provided at the preconstruction conference. Yes____ No____

6. Purchaser may require a swing mount MCT base to be mounted on the center of the Engine console, to be provided by purchaser. Yes____ No____

7. Any notch or corner protruding into the passenger compartment shall be provided with a padded headliner which matches the remainder of the interior for the protection of the crew. Yes____ No____

8. Any sharp edge or corners of cabinetry or any other interior finish shall have edge protection installed. Yes____ No____

5.2 ***Cab Trim:*** The inner cab doors will have diamond tread or polished aluminum scuff plates from a point beginning ten (10) inches above the cab floor level extending to the bottom of the doors. Purchaser will accept entire interior surface of the door to be aluminum, stainless steel or polished tread plate. No plastic or vinyl will be accepted as the entire interior door covering, **No Exception**. Doors shall be full height. Yes____ No____

A. Drivers and officers doors shall have a door pocket storage bin for the storage of a clipboard/maintenance documents. Yes____ No____

B. Entry step areas shall be covered with aluminum tread plate and shall be designed to eliminate shin knocking. Yes____ No____

C. Cab door hardware shall be heavy-duty paddle type latches and will be provided on the interior and exterior of the door. Yes____ No____

D. All cab door handles shall be provided with associated scuff plates. Yes____ No____

E. Interior and exterior grab handles plus LED foot well lights will be provided at each cab door. Grab handles will be placed on the post opposite the seating position as not to have handles which could impact passenger's head in an accident. Yes____ No____

F. Metal powder coated grab bars ("Chicago style") shall additionally be placed across the width of the entire door near the base of each of the widows on the rear jump seats. Color to be Black or dark Gray. Yes____ No____

G. Exterior grab handles shall be three-piece (not rounded) design to allow the hanging of protective clothing. Yes____ No____

H. Foster Amber LED directional light bars for warning traffic when the door is open to be included as specified in section 4.5D. Yes____ No____

5.3 ***Seating:*** All seats are to be Bostrom brand, with heavy duty Ballistic material matching the interior of the cab. Seats shall be provided with the Fairbanks Fire Departments logo sewn into the headrest. Design is on file. Yes____ No____

A. Driver seat shall be a Bostrom Sierra EX8. This seat shall be an electric powered ballistic fabric/Durawear covered high back style seat with minimum adjustment up/down, fore/aft and lumbar support. Upholstery shall match remainder of interior. Yes____ No____

B. The officer's seat shall be a Bostrom Tanker model 550 ABTS SLS with SecureALL SCBA locking system. This seat shall be an electric powered ballistic fabric/Durawear covered high back style seat with minimum adjustment up/down, fore/aft and lumbar support. This seat will be able to accommodate an SCBA (MSA 4,500 psi cylinder). The officer's seat will include a flip-up headrest and have a padded insert supplied to cover the SCBA opening and provide back support when no SCBA is carried. Yes____ No____

1. Officers seat shall provide a minimum of 20" of knee room and shall be mounted as far <u>rearward</u> as possible as to not obscure the driver's use of the mirrors. *This is a critical design consideration*. Yes____ No____
2. Officers seat shall provide a minimum of 26" of elbow room. Yes____ No____
3. Storage compartments shall be provided under the officer's seat if this space is not utilized for auxiliary heaters. Yes____ No____

C. The three Firefighter seating positions shall have forward facing Bostrom Tanker model 500 ABTS seats with SecureALL SCBA mounting system. Seats shall be spaced along the rear wall, two outboard and one center. Seats shall be ballistic material/Durawear covered, high back seats able to accommodate an SCBA (MSA 4,500 psi cylinder) and will include a flip up head rest and have a padded insert supplied to provide back support when no SCBA is carried. Yes____ No____

1. Firefighter seats will be mounted on the rear wall, forward facing, two in the outboard positions (near the windows), and one centered matching current cabs. Yes____ No____

2. All light switches, heater, air conditioning, and window controls for the rear of the cab shall be accessible to these firefighters from a seated and belted position. Yes____ No____
3. Storage compartments shall be provided under the rear jumpseats and the officer’s seat if this space is not utilized for auxiliary heaters for storage of FF personal equipment. Yes____ No____
4. Firefighter seats shall provide a minimum of 30” of knee room, from edge of jumpseat to edge of cabinetry/wall. Yes____ No____
5. Firefighter seats shall provide maximum spacing for the most available elbow room. Yes____ No____
6. Rear seats shall be provided with a recessed cup holder mounted next to the seat base for each seating position. Exact locations to be determined at preconstruction conference. Yes____ No____

D. All seating positions will have three-point retractable seat belts, red in color. Bostrom ABTS seats are acceptable. The female end shall be rigid and extended to allow easy access to a firefighter in full protective clothing. Yes____ No____

1. A warning system for all seating positions must be provided that activates a visual and audible warning when a seat is occupied but the occupant is not wearing a seatbelt. This shall be accomplished via the VMUX. Yes____ No____
2. An override/silence feature will be available in case of a sensor failure and will reset each time the vehicle is shut down. Yes____ No____

E. All cab doors shall have manual locks and 4 (four) keys shall be provided. Yes____ No____

F. All cab windows are to be heated and electrically powered (up/down) controlled with a switch located at each seating position. Additionally, all windows shall be controlled from the drivers seating position as well as from their associated seating position. Yes____ No____

5.4 ***Intercom:*** A David-Clarke **(No Exceptions or substitutions)** vehicle intercom system and radio interface shall be provided and installed for all seating positions. Yes____ No____

A. The system shall include 1 model U3800 Master Control station, two model U3815 radio interface/Headset stations, and 5 model H3442 Headsets. Yes____ No____

B. The driver and officer positions will be provided with the radio interface stations. Yes____ No____

C. A remote heavy-duty push type momentary switch functioning as a transmit button for the officers seating position (placed conveniently on the officer’s side dash area) shall be included. To be engraved “PTT” Yes____ No____

D. *Installation locations of intercom components to be determined at pre-build* Yes____ No____

conference. Hooks for hanging headsets will be provided at each seating position.

E. A momentary radio transmit button will be located incorporated into the smart steering wheel for the driver. Yes____ No____

5.5 ***Radio:*** A Motorola mobile radio will be provided by the bidder and installed at the factory, recess mounted in the center dash position. The radio shall be a Motorola **XTL5000** model 05 and will be programmed upon delivery to the departments current fleet map. To match current radios, part number M20KSS9PW1AN. Yes____ No____

A. A direct battery ground shall be provided. Yes____ No____

B. A "Johnny Ray" or equivalent radio swivel mount shall be provided by the manufacturer and installed to allow the radio display to be clearly read from both the drivers or officers seating positions (if the dash configuration makes it unable to recess mount the radio or it is not conducive to use). Yes____ No____

C. A Motorola flexible antenna will be mounted on the cab roof. Coax cable will be run at the factory from the antenna mounting location to the radio mounting location. Yes____ No____

D. Two Motorola remote radio speakers will be provided by the manufacturer. These speakers will be wired and mounted at the factory; one placed centrally in the front of the apparatus and one placed centrally in the rear cab of the apparatus. *Exact locations to be determined at pre-construction or mid construction meetings.* Yes____ No____

E. A Knox box Sentry key lock system shall be provided and installed by the manufacturer. The Knox Box key lock system shall be a Sentralok-A #3914-F1 wireless (for user number 50002) with a Blue indicator light. System shall be mounted at a location to be determined at the pre-build conference or mid inspection, and shall be easily accessible from the Drivers and Officers seating position. Yes____ No____

5.6 ***Interior lighting:*** Interior lighting must be sufficient to allow good visibility for safe operations within the cab during our long, dark winter days. Yes____ No____

A. A minimum of four 6" white LED dome lights (clear lens, no frosted) will be provided in the cab area, one each over the driver, officer and both outboard firefighters seating positions that are operated both manually via a switch and by opening the adjacent door. Switch for manual operation must be easily reached by a seat belted passenger. These lights must adequately illuminate the cab to allow safe entry/departure during periods of darkness. Yes____ No____

B. All cab seating positions are to have a 6" manually switched red LED dome light (translucent red lens) positioned directly overhead within easy reach of a seat-belted passenger. This is in addition to the manufacturer's standard interior lighting package. Yes____ No____

C. Officer and Driver position shall have a Waldmann HITF 20S (QR-CBC51) 12V/20W flexible goose neck style map reading light installed at their seating position. *Mounting location to be specified at the pre-build conference, to correspond with map book/MDT shelf.* Yes____ No____

D. A digital display thermometer reading outside temperature from -60 degrees F to + 100 degrees F will be provided as part of the VMUX. Reference VMUX OR13 series temperature sensor. Yes____ No____

5.7 ***Cab mirrors:*** Cab mirrors shall be Mekra 300 series Aero door mounted mirrors on the driver side and a comparable bus style mirror on the Officer side to reduce obstructions by seated passengers. Mirrors to be as large as possible for maximum rear visibility. Yes____ No____

A. Both Mirrors shall be heated. Yes____ No____

B. All Mirrors shall be remote controlled from the driver's position. Yes____ No____

C. Convex mirrors will be provided as an integral part of the mirrors. Convex mirrors shall be mounted below the main mirror body on the driver's side. Yes____ No____

D. Mirrors are to be of a break-away style to reduce potential damage. Yes____ No____

5.8 ***Back-up/Sideview Cameras:*** A closed circuit back-up camera will be provided and be tied into the VMUX display's. Three color cameras and a speaker shall be provided and installed as specified below. Yes____ No____

A. VMUX screens shall be used as the display from either of the 3 specified cameras- front view (see 5.9), side view and rear. Yes____ No____

B. The rear-view camera will activate automatically when the apparatus is placed in reverse. Yes____ No____

C. The screen will default to the right side blind spot camera when the right turn signal is activated. Yes____ No____

D. The color camera mounted on the rear of the apparatus must be recess mounted and be protected from damage while washing the apparatus, removal or stowage of equipment, laying of hose, or routine mounting or Yes____ No____

dismounting the apparatus.

E. The second color camera shall be mounted on the exterior Officer's side of the apparatus providing a clear view of the curbside blind spot. This camera shall also be shielded and protected from damage. Yes____ No____

F. The rear-view camera microphone shall be defaulted to the "off" position in the VMUX unless selected "on" by the driver or officer. Yes____ No____

5.9 ***Front View Digital Recording System:*** This apparatus shall be supplied with a front view digital recording system. Camera shall be color, forward facing to record the route of travel of the apparatus. To be installed per manufacturer guidelines and tied to the VMUX as specified above. This shall rotate & be capable of being positioned to maintain a view/recording of a fire scene. Recording shall be accomplished via one button control and to a removeable memory card or similar medium. Yes____ No____

5.10 ***Cab instrumentation:***

A. The cab instrument panel or panels shall be easily viewed by the driver, removable, non-glare, and will include the following gauges and indicators (certain gauges may be through VMUX). Yes____ No____

1. Dual needle air pressure gauge indicating pressure in primary and secondary systems. Two separate gauges will be acceptable.
2. Red low air warning light, separate for primary and secondary tanks with low air audible alarm.
3. Oil pressure gauge with integral red low oil pressure warning light and audible low oil pressure alarm.
4. Engine oil temperature gauge with integral high temperature warning light and high oil temperature audible alarm.
5. Transmission temperature gauge with integral red high temperature warning light and high transmission temperature audible alarm.
6. Ammeter.
7. Voltmeter with color-coded dial and integral red high/low voltage warning light and audible high/low voltage alarm.
8. Fuel gauge with integral low fuel warning light.
9. Water temperature gauge with integral red high-water temperature warning light and high water temperature audible alarm.
10. Speedometer with odometer and trip meter.
11. Tachometer with integral engine hour meter.
12. Air restriction indicator with re-set button, or if mounted in the engine compartment a red restriction warning light.
13. Headlight switch- via VMUX.
14. Dash light dimmer.

Yes____ No____ **(1-14)**

15. Headlight high beam indicator (blue)
16. Right and Left directional indicator lights (green)
17. Ignition on/off switch.
18. Ignition on indicator light (yellow).
19. Battery on light (green).
20. Parking brake on warning light (red).
21. “Cab not latched” warning light (red).
22. On-Spot chains in use light.
23. Inter-axle lock engaged warning light.
24. Differential lock engaged warning light.
25. ATC activated warning light (yellow).
26. Windshield wiper rocker switch with backlit label.
27. Windshield wiper delay slide and momentary washer backlit label.
28. Engine start momentary button with backlit label.
29. Electric horn/air horn selector switch (via VMUX).
30. Engine fast idle switch with appropriate interlocks via VMUX.
31. ABS warning light.
32. Check engine light.

Yes____ No____ **(15-32)**

B. ***Pump Shift*:** On the left side of the steering column shall be an electric over air actuated control for engaging the fire pump, with applicable indicator lights. Switch shall be labeled, illuminated, and shielded to protect it from accidental activation. Pump shift shall be appropriately interlocked. Yes____ No____

C. ***PTO:*** Any required PTO activation switch(es) and associated indicator lights not controlled via the VMUX shall be mounted to the left of the steering column on a lower dash panel. Yes____ No____

1. This switch(es) shall be illuminated and shielded to protect it from accidental activation. Yes____ No____
2. Switch shall have any necessary interlocks, such as to disengage the high idle feature, prior to engaging. Yes____ No____

D. ***Emergency light switches:*** All switches for controlling emergency lights will be via the VMUX readily accessible to the Driver and Officer. Any necessary manual analog switches shall be provided with labels shall be backlit so that switch feature is easily identified at night. Yes____ No____

E. ***Parking brake:*** The parking brake control shall be mounted in a location easily reachable by the driver and officer from a seated and belted position. Center dash is preferred matching current apparatus. Yes____ No____

F. ***Ladder Controls:*** All required in cab controls for the activation/operation of the aerial ladder platform, including but not limited to the PTO activation switch and Ladder Power switch (if utilized), or brake locks (if utilized) shall Yes____ No____

be located within easy reach of the driver in an overhead console.

1. An hour meter for the aerial ladder platform shall be included and mounted in the cab in this area. Yes____ No____

G. ***Miscellaneous:*** Locations for other switches, gauges, or indicators shall be discussed at the pre-build conference. Dash layout shall be approved by purchaser at pre-build conference. Yes____ No____

1. Use of Weldon VMUX system for all applicable systems is encouraged. The two (2) control heads provided shall be programmed the same but operate independent of each other. Yes____ No____

F. ***Labeling/Lighting:*** All cab switches, controls buttons, actuators, etc. shall be adequately labeled and lighted as determined by the purchaser. Yes____ No____

5.11 ***Shoreline powered outlets:*** Drivers compartment (cab) will have at least four duplex electric outlets (110V/30) powered by the AC shoreline for powering the manufacturer supplied Streamlight hand light chargers and other purchaser supplied equipment such as a multi-gas detection meter charger and thermal imaging camera charger. *Locations to be determined at the pre-build conference.* Yes____ No____

5.12 ***Accessory 12V plugs:***

A. Two 12V accessory power plugs ("Cigar" style plugs) shall be provided in the front of the cab on the front dash area. Yes____ No____
B. At least four (4) USB power points shall be provided for charging electronic devices with two located in the front cab and two near the rear jump seat positions. Yes____ No____

5.13 ***Heaters:*** Heaters shall be provided with the goal of maintaining the cab at +70 degrees F at minus fifty (-50) degrees F outside temperature. *Manufacturers plan to meet this specification MUST be included with bid document,* ***NO EXCEPTIONS.*** *Fresh Air Intake to reduce condensation/frosting to be included in the heat/defrost package.* Yes____ No____

A. A main heater will be provided with controls for fan speed and control of discharge vents easily accessible by the driver. Heat must blow directly on all seating positions. Yes____ No____

B. An auxiliary heater or heaters are required in the rear cab area, mounted under the rear firefighter jumpseats. Yes____ No____

C. Additional auxiliary heater(s) will be placed under the front cab driver and officer seats. Yes____ No____

D. Additional heaters and alternative locations may be accepted by the purchaser to meet the stated objectives as long as all information is provided in the bid packet. Yes____ No____

E. All auxiliary heaters shall be provided with individual easily accessible manual ¼ turn shut off valves to allow isolation of a bad heater core in case of a failure. Utilizing the shut off valves shall not affect other heaters on the apparatus. Depending on the heater plumbing, 2 valves per core may be required to accomplish this. All shutoff valves are to be labeled with function and operating position. Yes____ No____

F. Controls for all heaters shall be through the HVAC setting in the VMUX. Yes____ No____

5.14 ***Air Conditioner:*** A heavy-duty air conditioner shall be provided with the goal of keeping the interior air temperature below +64 degrees F at an outside temperature of +90 degrees F. The air conditioner will have outlets that blow air towards all seating positions. Controls shall be through VMUX. Yes____ No____

5.15 ***Defroster:*** A defroster unit shall be provided as part of the HVAC package that can keep the windshield and side glass clear from frost at –50 degrees F while Firefighters are wearing wet protective clothing. Controls shall be easily accessible from the drivers seating position. Shall be integral part of HVAC package. Heated side glass as specified shall be supplied on both front windows. Yes____ No____

A. Two 6" auxiliary fans will be provided and mounted above the windshield. Both fans will be capable of being controlled through the VMUX. Yes____ No____

B. Direct discharge of air must be provided on all primary cab windows (Windshield, driver's side window, and officer's side window). Yes____ No____

C. Two (2) additional 6" auxiliary fans will be provided and controlled from the drivers seating position via the VMUX to assist in meeting the intent of section 5.15. *Exact fan placement to be determined at the pre-build conference- intended to match current apparatus, near mid windows.* Yes____ No____

D. Fresh air intake upgrade for cold climates must be included. Yes____ No____

5.16 ***Glove box:*** A lighted glove box will be provided on the officer's side. May be placed in the dash or overhead console for the storage of small equipment items. Yes____ No____

5.17 ***Rear cab storage:*** The rear cab shall have cabinetry that matches current FFD apparatus. Pictures are included in this bid package and measurements shall be available at the pre-construction conference. This cabinetry shall be full width of the cab occupying the space where traditional rear facing jumpseats would Yes____ No____

typically be and a portion of the engine enclosure area. Current design was based on interior cab design from Sugarland Texas apparatus (Crimson #69905).

Included in bid price will be costs of all necessary shelving, protective edging, coating the cabinetry with Linex, Zolotone or equivalent coating, cabinet LED lighting and 2" mesh netting with quick release buckles matching our current design. *Must allow access at each end for maintenance to shorelines/Kussmaul. Yes____ No____

Minimum design requirements;

A. The cabinet(s) shall include LED track lighting on each side of each compartment or section of the cabinet. Yes____ No____
B. The cabinet(s) shall have 2" (min) mesh netting to restrain contents permanently attached at the bottom of the cabinet and locked into the top with heavy duty plastic speed clips/quick release buckles. Yes____ No____
C. Shelving shall be included to match current in service apparatus and shall be adjustable. Yes____ No____
D. The top of the cabinet shall have a lip and built in dividers matching current in-service apparatus. Yes____ No____
E. Attached to the leading edge of this cabinet (facing the front seats) shall be a set of storage bins for holding map books/binders. Reference pictures included. Yes____ No____
F. Cabinetry will not impede forward vision or on leg room for the jumpseat seating positions. Yes____ No____

5.18 "***Do Not Move Apparatus" warning light***: Two flashing LED warning lights will be located in the cab in an area clearly visible from both the driver and captain seating positions. One light shall be amber, and one light shall be red. Yes____ No____

A. Red LED light shall warn of an open door or unsafe condition on the cab. Yes____ No____

B. Amber LED light shall warn when an unsafe condition exists on the apparatus body. Components wired into this light will include, but are not limited to; Yes____ No____

1. Open Compartment door (Roll-up and conventional).
2. Extended light tower (if applicable).
3. Extended slide out or fold down step, or rear stairs/ladder.
4. Ladder racks or any moveable storage racks (if utilized) not in the stowed or road travel position.
5. Aerial device or component not stowed properly.
6. Hose tray, chute, speedlay, or hose storage area deployed.
7. Any other device which is opened extended or deployed which may cause damage to the component and/or the apparatus if moved.
8. Aerial not properly bedded. Yes____ No____
9. The RED LED light will be labeled "Cab". **(1-10)**
10. The Amber LED light will be labeled "Body".

6.0 Body, Compartments, and Equipment Mounting: (NFPA Chapter 15)

6.1 ***Body Material:*** Body material shall be Aluminum. Cab and body shall be designed and built to acceptable industry standards and shall be of sufficient construction and integrity to prevent cracking at welds, warping, metal fatigue and stress under the rough road conditions and extreme temperatures encountered in our area. Body shall be designed and constructed to provide a service life of at least 20 years and have an extended warranty. Yes____ No____

A. Access panels will be provided in the apparatus body, or through compartments, to allow maintenance of all electrical components including nodes, relay and panels; any hydraulic components, spring hangers, body mounts, fuel tank sending units and mechanical components requiring lubrication, adjustment or preventative maintenance. Yes____ No____

B. Purchaser may require additional access hatches to be installed based on apparatus design and configuration at mid or final inspection. Yes____ No____

C. Pump Compartment and Aerial body shall be isolated from the cab. Yes____ No____

6.2 ***Compartments:*** The purchaser necessitates the maximum amount of compartment space possible within the design parameters and dimensions of the specified vehicle. The amount of compartment space will be indicated in the bid documents and shall be considered in awarding of the bid. Yes____ No____

Compartments shall be capable of storing the following **MINIMUM** equipment: ground ladders specified, pike poles specified, hand tools, forcible entry equipment, salvage tarps, water vacuums, gas powered chainsaw, gas powered rotary saw, ventilation fan, Aux lighting, extension cords, nozzles, appliances and the listed manufacturer supplied equipment. A Inventory list will be made available. Yes____ No____

Compartment layout and design shall be objective based, providing the most usable space possible within the design parameters of the vehicle. Compartments shall be re-enforced to support the extremely heavy loads they are expected to carry. Yes____ No____

A. The purchaser requires;

1. Maximum compartment space possible while keeping the apparatus within the specified length and wheelbase. Yes____ No____
2. Apparatus shall be of "walk around" design. Yes____ No____
3. The apparatus shall be of "flat panel" rear design to maximize compartment space, no "beaver tail" is required. Yes____ No____
4. A rear bumper will be provided to protect the rear of the apparatus Yes____ No____

from damage from minor accidents.

5. A fold out or deployable stairway/ladder will be provided on each side of the rear of the apparatus to access the ladder turntable. Yes____ No____

   a. No step up or down is to exceed 18". Yes____ No____
   b. LED Strip lighting shall be provided along each side of the stairs/ladder that activates when the parking brake is set. This lighting shall be recessed or protected from damage due to personnel & equipment using the stairway. Yes____ No____
   c. Stairway/Ladder shall have grab handles along each side. Yes____ No____
   d. Stairway shall be finished with NFPA compliant treadplate with grip plate inserts and substantial enough to support 500 lbs per step. Yes____ No____
   e. Drains will be provided as necessary to prevent the accumulation of snow, ice, or water. Yes____ No____
   f. Any available area between or under stairs shall be utilized for equipment storage. Yes____ No____

6. If required for accessing hose beds or stored equipment the rear of the apparatus shall be equipped with a pull-out locking step to facilitate loading/deploying hose or grabbing/stowing equipment. This step shall be as wide as possible, at least 24" deep, mounted on 1,000 lb slides and covered in treadplate with grip strut inserts. Yes____ No____

B. A detailed blueprint of all proposed compartments, including dimensions, shelf options and roll-out tray options shall be provided with the bid package. Yes____ No____

1. All compartments shall be equipped with drip molding over the top. Yes____ No____

2. All compartments will be of sweep out design. All compartments, trays and bins will be lined with black Dri-Dek, Turtle-Tile or other comparable compartment lining material, black in color. Yes____ No____

3. All compartments shall be finished with zolotone or customer approved splatter paint finish. Yes____ No____

4. All compartments will be provided with LED strip lighting designed to fully illuminate the compartment and the stored equipment in full darkness. Yes____ No____

   a. Compartments with shelves shall require lighting above and below shelving. Yes____ No____
   b. All lighting shall have clear lenses, no frosted lenses are Yes____ No____

acceptable.

c. All compartments must have lighting on both sides of the compartment. Yes____ No____

d. Transverse compartments, or compartments deeper than 24”, must have additional lighting run on the horizontal plane along the inside of the compartment to ensure clear visibility of all stored equipment. (Ground Ladder storage excluded) Yes____ No____

e. Any additional lighting suggested by the manufacturer to meet the intent of this specification shall be detailed in the bid document. Yes____ No____

f. All compartment tray edges shall have red/white reflective Scotchlite tape. Yes____ No____

5. All shelves to be mounted on uni-strut to allow easy adjustment. Yes____ No____

6. Manufacturer will allot for 2 vertical dividers with uni-strut to be placed in any full height compartment as needed at preconstruction conference. This is in addition to other specified or necessary dividers. Yes____ No____

7. A total of 6 (six) 500 lb roll out trays shall be included. Trays to be placed in specific compartments at preconstruction conference Yes____ No____

8. A total of 6 (six) adjustable roll out drop/tilt down trays with a minimum of 250 lb capacity shall be included. Trays to be placed in specific compartments at preconstruction conference. Yes____ No____

9. A total of three (3) slide out or swinging tool panels shall be provided. Pak-Trak mounting system shall be included on both sides for all tool boards. Panels to be placed in specific compartments at preconstruction conference. Yes____ No____

10. A total of three (3) 1,000 lb roll out trays shall be included. Yes____ No____

11. A total of 14 adjustable shelves or various sizes shall be provided to be placed in exterior compartments as desired by the purchaser at the preconstruction or mid-construction conference. Yes____ No____

12. Manufacturer will provide for up to 6 various size aluminum or polycarbonate/PVC bins for use on the apparatus for storage of small/loose equipment. Yes____ No____

13. Manufacturer shall provide 40 strap retainers w/ Velcro for the retention/securing equipment to be placed on various trays or shelves as required by the purchaser. Shipped loose. Yes____ No____

14. All compartment doors shall be ROM roll-up doors, natural finish, except for narrow (height) compartments where the room required for the door hardware would reduce the effectiveness of the compartment. *To be identified and discussed at pre-build conference.* Yes____ No____

    a. All roll-up doors shall be provided with a 10” loop tether strap to facilitate closing. Yes____ No____
    b. All compartment doors shall be tied into the body “Do Not Move” cab warning light. Yes____ No____
    c. Driver and Officer side pump panels to be enclosed behind roll-up doors. Yes____ No____
    d. Ground ladder storage compartment shall be equipped with a roll-up door. Yes____ No____

15. All mid and high side compartments shall be provided with an aluminum step with grip strut below the compartment door opening to facilitate access to the upper areas of each compartment. Yes____ No____

16. All compartments will be provided with ventilating louvers, mounted so that water and road grime cannot enter. Yes____ No____

17. All painted body areas prone to damage from the storage or removal of equipment, such as the bottom edge of compartments, shall be protected with stainless steel edge protectors. Yes____ No____

18. One compartment or area capable of storing long items such as squeegees, brooms, water vacuum handles and shovels shall be included (in addition to pike pole storage area). Yes____ No____

    A. Any lid that opens upward such as a dunnage area compartment where roll-up doors are not practical shall be equipped with a spring or gas filled strut to hold it open . Yes____ No____
    B. Any flat, top access compartment such as a dunnage area shall have the lid constructed to withstand the weight of a 450lb firefighter walking on it. Yes____ No____

19. One compartment must provide storage for the specified ladders and pike poles. Yes____ No____

20. There shall be compartment space sufficient in size (may be stored separately) for the storage of two (2) Survair Water Vacuums. Dimensions available upon request. Yes____ No____

21. There shall be compartment space sufficient in size for the storage of a Supervac PPV Fan. Dimensions available upon request. Yes____ No____

22. There shall be compartment space sufficient in size for the storage of two (2) power saws; one Chainsaw and one Rotary saw. Dimensions available upon request. Yes____ No____

23. One compartment will be designed for the storage of hand tools and forcible entry equipment utilizing the swing out or slide out tool boards specified earlier. Yes____ No____

C. Compartment Mounting System: Supplied Tool Boards and four (4) compartments of the purchasers choosing will include a Pak-Trak mounting system on the back and side walls. Yes____ No____

1. Both sides of the specified tool boards will include Pak-Trak. Yes____ No____
2. The following Pak-Trak mounting brackets will be supplied; Yes____ No____

   a. 16 model 1004 tool mounts.
   b. 10 model 1003 tool mounts.
   c. 6 model 1002 tool mounts.
   d. 14 model 1001 mounts for tools.
   e. 4 model 1019 universal hangers for spare hoses/shovels.
   f. 4 K5009 Tool hanger kits.
   g. 2 K5032 Halligan mounts.
   h. 4 model 7002 installation kits.
   i. 1 model K5003 mount for irons.

Yes____ No____ **(A-I)**

D. The following Ziamatic mounts shall be provided loose with the apparatus; Yes____ No____

1. QM-CSM-L; quantity 2. (saw mounts).
2. QM-RCH-2.5, fuel can mount; quantity 1.
3. QM-PMH-D-B; quantity 3. (Pre-mix/bar oil holder)

Yes____ No____ **(1-3)**

6.3 ***Tread plate protection panels:*** All tread plate used will be highly polished ("bright finish") aluminum and provide for a non-slip surface. Yes____ No____

A. Cab roof shall be overlaid with polished diamond tread plate meeting NFPA slip resistant standards. Yes____ No____

B. Exterior rear cab wall shall be overlaid with polished aluminum tread plate. Yes____ No____

C. Polished tread plate body protection panels around the rear wheels will be provided. Yes____ No____

D. The rear surface of the apparatus body shall be smooth finished for striping, but all steps, all working platforms or walking areas will be polished tread plate meeting NFPA slip resistant standards. Yes____ No____

A. A rear bumper/protrusion will be provided from the rear of the apparatus to protect it from significant damage in low speed impacts. This shall be the first item struck should the apparatus back into an object or be struck from behind and shall be easily replaceable. Supplied with swept corners. To be edged with reflective Chevron striping matching the remainder of the rear of the vehicle. Yes____ No____

E. Areas commonly used for access or with a high probability of accumulating snow and ice shall have grated inserts. Yes____ No____

F. All areas prone to trapping water, snow or ice shall have drain holes provided. No area shall drain onto another area of the apparatus. Yes____ No____

G. All areas commonly used as a walkway for access to equipment, checks of apparatus serviceability or maintenance shall be tread plate meeting NFPA slip resistance standards and shall be lighted. Yes____ No____

H. The leading edge of the aerial body/Pump compartment, where it extends beyond the edge of the cab making it susceptible to damage, shall be protected with polished stainless-steel protection plates. Yes____ No____

I. Body rub rails will be provided on all sides and rear of the body and shall be aluminum. Body rub rails shall contain red/white scotch light reflective tape around the entire body. Yes____ No____

J. Top of the pump enclosure shall be aluminum tread plate. Yes____ No____

L. The Aerial turntable and area immediately below it shall be aluminum tread plate. Turntable shall include grip strut on walking surfaces and be well lit with LED lighting. Yes____ No____

M. Any removable top hatches/covers for access to hydraulic tanks, PTO generator, or water tank shall be tread plate and rated to support a minimum weight of 450 lbs. Yes____ No____

N. All painted body areas prone to damage from the storage or removal of equipment, such as the bottom edge of compartments, shall be protected with stainless steel edge protection. Yes____ No____

6.4 ***Grab rails:*** Grab rails will be provided were necessary to aid in access and egress

of the apparatus. All grab rails shall be knurled 3-piece design. Yes____ No____

A. Grab rails will be provided where ever steps or working platforms are provided. *All access points will have three points of contact available*. Yes____ No____

B. Interior and exterior Grab rails will be provided at each exterior cab door. Yes____ No____

C. Grab rails will be provided to assist in accessing the tailboard or step on the rear of the apparatus, if applicable. Yes____ No____

D. Grab rails will be provided to assist in safely exiting the roof access, dunnage areas, top mounted storage or areas accessed for equipment checks. Yes____ No____

E. Grab rails will be provided as necessary to safely access the turn table, access ladders, or use folding steps. Yes____ No____

F. In addition to the bidder's standard placement of grab rails and the windshield grab rail specified in 3.18(D), the bid package shall include 6 additional grab rails up to 36" long to be placed as deemed necessary by the purchaser at the pre-build, mid or final conference for safe access/egress. Yes____ No____

G. Interior grab handles shall be provided at each entrance door, placed opposite the seating position. Yes____ No____

I. Cab rear doors will also be provided with 30" black powder coated "Chicago" style grab handles mounted across the bottom of each window spanning the full width of the door. Yes____ No____

6.5 ***Steps:*** All steps and ladders provided shall meet NFPA slip resistance standards. Steps to be Auston/Thomas PHS 100 or equivalent with integrated LED lighting. Yes____ No____

A. All steps and ladders shall have associated grab rails. Yes____ No____

B. All steps and ladders utilized to access upper areas of the apparatus shall be designed so that a size 13 boot has its arch firmly on the step while ascending/descending. Open riser designs are encouraged. Yes____ No____

C. A total of six (6) fold down steps (in addition to manufacturer standard placement) shall be included in the bid price for placement as the purchaser deems necessary at the pre-build or mid construction conference. Yes____ No____

D. 2 fixed, sliding, or folding steps shall be included to be placed as required by the purchaser for access during final construction. Yes____ No____

E. All full height body compartments shall be provided with grip-strut steps mounted below them to aid in accessing upper level storage as specified earlier. Yes____ No____

F. A large pull out step shall be located at the pump operators panel for use when the aerial is deployed meeting NFPA guidelines. Shall include grip strut and be tied into the do not move light. See 8.33. Yes____ No____

6.6 ***Paint:***

A. Apparatus shall be red in color, Sikkens paint code: PPG Candy Apple Red 75492, matching all current FFD apparatus. Yes____ No____

B. A simulated gold leaf stripe shall be provided on the cab of the apparatus, dividing the upper and lower cab areas, to match current FFD apparatus. *Pictures included with bid document and available at pre-build conference.* Yes____ No____

C. The chassis frame and all frame mounted components (except engine and transmission) shall be painted/powder coated black. Yes____ No____

D. The Aerial ladder steel components including ladder sections, rails, rungs, etc. shall be painted white. Some components, such as supports and main hoisting cylinders, to be painted red to match the cab and chassis. Proposal to be included in the bid document. Yes____ No____

G. Aluminum components, such as the Platform bucket (if applicable), shall be natural finish. Steel components of the bucket shall either be painted white to match the ladder or gray to match the aluminum look of the platform. Yes____ No____

6.7 ***Reflective striping:***

A. White Scotchlite stripping shall be installed and match current Fairbanks Fire apparatus and will be a 1"/4"/1" reverse "Z" pattern. A picture will be provided at pre-construction meeting. All stripping shall be outlined with ¼" black reflective tape. Reflective material must be provided on all sides of the apparatus. Yes____ No____

B. Rear of the apparatus shall have a reflective chevron striping pattern, meeting the specifications of NFPA 1901, to increase rear visibility of the apparatus. Color shall be orange/yellow and match current FFD apparatus. Rear shall be finished smooth to facilitate striping. Yes____ No____

C. The lower 1/3 of the interior cab door surfaces shall be covered with NFPA compliant reflective chevron striping. Yes____ No____

D. All compartment shelving (pull out) shall have the edges covered with red and white reflective Scotchlite tape. Yes____ No____

E. All aluminum rub rails shall have reflective red/white striping installed around the perimeter of the apparatus. Yes____ No____

F. The front "extreme duty" bumper shall be painted red and the leading edge shall be covered in matching chevron striping. Yes____ No____

H. Any rear bumper provided shall have the rear facing portion covered in reflective chevron striping complimenting the remainder of the back of the apparatus. Yes____ No____

I. Platform bucket shall incorporate reflective striping to increase visibility. Yes____ No____

6.8 ***Lettering:*** The following lettering shall be provided and installed as directed. Final layout to be approved by purchaser:

A. A minimum of 120 4" gold letters/numbers with black shadowing, matching current FFD apparatus, shall be included for lettering/numbering the apparatus cab and body. *Exact lettering style and layout to be determined at the pre-build conference.* Yes____ No____

B. A minimum of 36 6" red reflective letters and numbers shall be provided. A mounting plate for the lettering, including white Scotch lite backing, shall be provided (if needed) and mounted on the rear of the apparatus. *Exact lettering layout to be determined at the pre-build conference. "FAIRBANKS FIRE" and "PLATFORM 1" on rear with "P-1" on compartment door.* Yes____ No____

C. Purchaser supplied door decals (11.5" X 17") shall be installed by the bidder on the front cab doors. Yes____ No____

D. Manufacturer will provide and install one American Flag decal measuring approximately 9" X 13", installed and oriented properly on each side of the apparatus body. *Exact locations to be determined at the pre-construction meeting.* Yes____ No____

E. Large (depending on compartment door height, approx. 30") reflective white letters, numbers and dashes (outlined with black) shall be included on each side on the most rearward compartment of the apparatus. Example: "P-1" Yes____ No____

F. Large (16"-24") matching gold lettering shall be centered on a painted red background panel attached to the bed section on each side of the aerial ladder reading "Fairbanks Fire" w/ smaller "Golden Heart City" below. Yes____ No____

G. Custom plates will be mounted on the inside of each the drivers and officers doors reading “Custom Built for the Fairbanks Fire Department” or equivalent. Yes____ No____

H. 2.5” Black Reflective lettering “P-03” shall be provided and installed per the purchasers direction on the lower corner of each the drivers and officers doors. Yes____ No____

I. 4 x 2” Black numbering, indicating a vehicle ID number, shall be provided and installed in close proximity to the vehicle fuel fill at a location approved by the purchaser. *Exact numbering to be provided by Mid inspection by purchaser.* Yes____ No____

J. White reflective 6” letters shall be provided reading “FFD” and “P-1” for placement on the front of the apparatus matching our current fleet. Yes____ No____

K. Large white reflective letters, outlined in black, shall be placed on each side of the Aerial Platform. Ex: P-1 (on doors) Yes____ No____

7.0 ***Pre-connected hose lines:*** There will be (3) pre-connected 1.75” lines on this apparatus. 1 x 150’ (bumper), 1 x 200’ and 1 x 300’ (crosslay/bed). An area to deadload 500’ of 2.5” fire hose shall also be provided. Yes____ No____

A. These pre-connected hose lines shall not be located more than 70” off the ground or a step but not less than 48” off the ground or a step to facilitate shoulder loading. Yes____ No____

B. Any step (i.e. tailboard or slide out step) used for gaining access to the pre-connected lines shall not be less than 24” deep and 36” wide and meet NFPA requirements for illumination and slip resistance (Grated inserts required). Only one step is permitted to access pre-connects and no step up shall exceed 18” up. Yes____ No____

C. These pre-connects may be carried as crosslays between the cab and pump panel area, speed lays, or as rear pre-connects if they meet the above specifications. Yes____ No____

D. Pre-connected hose lines may be divided equally as crosslays and rear pre-connects if they meet the above stated parameters. Yes____ No____

E. Slide out trays to ease re-packing will be provided if clear top access for reloading hose is not possible. *The purchaser will not accept having to raise the aerial device to repack pre-connected hose.* Removable trays or beds are required. Yes____ No____

F. Clear proposal including diagrams and measurements for pre-connected hose lines to be included with bid package, **NO Exceptions.** Yes____ No____

7.01 Hose to be carried for pre-connected hose lines:

Length:	Size:	Location:	Bed or Reel:
1 X 150’	1.75”	Front Bumper	Bed
1 X 200’	1.75	Cross lay or rear	Bed
1 x 300’	1.75	Cross lay or rear	Bed

Yes____ No____

7.02 ***Hose to be carried in Hose Bed or on Reels:*** Hose beds will be provided for the 800’ of 5” supply hose with 5” Storz couplings (atypical), the 500’ x 2.5” hose and the pre-connected attack lines. All hose bed flooring shall be spaced to provide adequate ventilation. Hose bed flooring shall be constructed of Yes____ No____

aluminum, smooth and free of sharp edges to prevent hose damage. Hose bed floors must be removable to provide access to inner body framework or other components.

Length:	Size:	Location:	Bed or Reel:
800'	5"	Rear bed	Bed
500'	2.5"	Cross lay by pre-connects preferred.	Bed

Yes____ No____

A. The purchaser **requires** not raising the aerial device to repack any attack or supply hose. The use of slide out trays/beds, hydraulic lowering trays/beds, or alternate means where practical is required. Yes____ No____

B. The purchaser desires to be able to load hose from ground level without needing to stand on top of the apparatus to reduce risk of falls. Pull out beds/racks that lower would be encouraged if available. As stated, loading of hose may not necessitate raising the aerial device. Yes____ No____

C. Any hose bed covers that double as a walking/access surface shall be hinged polished tread plate meeting NFPA slip resistance standards and of sufficient strength to support equipped firefighters walking across it or standing on it. In areas that a hard hose bed cover is impractical, a hose bed cover made of Hypalon (No exceptions) shall be provided and attached to the apparatus via Velcro and eyelets/quarter turn fasteners. Yes____ No____

D. Cross lay/speed lay end covers (if utilized) shall be provided if hose is not secured behind compartment doors. These flaps shall be designed to fit over and retain nozzles and hose meeting NFPA requirements. Design to be approved by the purchaser. Yes____ No____

E. Any hose chutes provided, if required, will be stainless steel and capable of passing 5" Storz couplings. Hose chute slide out extensions will be provided where necessary to clear rear of vehicle. Purchaser prefers supply hose to exit from officer side of vehicle where possible. Yes____ No____

F. 12V individually controlled Collins spot/Flood (or Equiv) LED lighting will be provided to facilitate loading hose in the dark. Yes____ No____

8.0 Fire Pump: (NFPA Chapter 16)

8.1 ***Fire pump:*** Fire pump shall be a Waterous Class A rated single stage centrifugal pump rated to at least 2,000 GPM driven by a Waterous pump transmission. All Waterous accessories will be used where available. To be a Waterous model S101 rear suction style pump. Yes____ No____

A. Pump and plumbing shall meet or exceed all NFPA applicable requirements. Yes____ No____

B. Plumbing shall be constructed of stainless steel. Yes____ No____

C. Pump shift control shall be electric over air and mounted to the left of the steering wheel on the lower dash. Switch to be shielded from accidental activation and properly interlocked to prevent damage or a dangerous condition. Yes____ No____

D. Pump shall be provided with a mechanical pump seal. Yes____ No____

E. Pump shall be supplied with two Waterous (2) zinc anodes and zinc intake screens. Anodes to be placed one on each side of the fire pump, on the intake side. Also, pump is to be provided with Bronze wear rings. Yes____ No____

F. All pump components shall utilize Waterous identification plates where available (Primer, OPM, Relief valve, Transfer Valve- if applicable) Yes____ No____

G. Pump installation will be designed so that complete maintenance of the fire pump can be performed from the bottom of the truck. Yes____ No____

H. Impellers to be balanced and flame platted. Yes____ No____

8.2 ***Pump mount:*** Pump shall be mounted mid-ship. Yes____ No____

8.3 ***Pump drive:*** Pump is to be driven from the chassis propulsion motor via a Waterous pump transmission. Yes____ No____

8.4 ***Transfer valve:*** Not required for a single stage fire pump. If supplied Pump is a two stage pump it shall be equipped with a manual transfer valve utilizing a turn-wheel and equipped with Volume and Pressure indicator lights. Yes____ No____

8.5 ***Pump testing:*** Pump testing will be performed by UL at the factory prior to final inspection of the vehicle. Vehicle must pass acceptance testing upon arrival at Fairbanks, AK. Yes____ No____

8.6 ***Pressure control/governor:***

A. Pump shall be controlled via an FRC ThrottleXcel RPM control system with all available options. Yes____ No____

B. A Waterous relief valve system (manual Discharge pressure relief valve) shall be provided and installed. To include a panel mounted pilot valve with green/amber indicator lights and the pump mounted relief valve. Yes____ No____

8.7 ***Systems Monitor:*** Covered by ThrottleXcell specified. A monitor shall be provided on the pump operators panel which monitors and displays oil pressure, engine rpm, coolant temperature and voltage. Audible alarms for out of normal range readings shall be provided. Yes____ No____

8.8 ***Primer:*** Pump primer shall be a Waterous VPO/VPOS oil free rotary vane primer controlled via an electric push button momentary switch on the pump panel. This switch shall be rubber coated as to be protected from damage from water and ice. Yes____ No____

A. A Waterous VAP priming valve shall be provided. Yes____ No____

8.9 ***Winterization:*** Due to extreme cold the entire pump area must be totally enclosed, insulated and heated to prevent freezing. Yes____ No____

A. The bottom of the pump enclosure (“belly pan”) shall be easily removable without the use of tools for maintenance; this pump enclosure may not be the lowest point of the vehicle. Bottom panels shall slide out allowing for quick and easy access. Yes____ No____

B. A minimum of one remote heater will be located inside the pump enclosure to provide heat to help prevent freezing. Additional heaters to be provided if manufacturer believes they are necessary to prevent freezing at –50 F. Yes____ No____

1. An on/off switch labeled "Pump Heater” with red indicator light will be located on the pump panel. This switch shall activate the pump house heaters, 12V heat tape for the pressure governor transducer and master gauges, as well as for the Harrison hydraulic generator hydraulic tank (specified later) heating pad. Yes____ No____
2. An accessible ¼ turn valve will be provided to turn off the heater in the summer time or in case of a core leak. All details of winterization of the pump will be included in the bid documents. Yes____ No____

C. All escutcheons and openings around valve handles (i.e. swing valves) through the pump panels shall be insulated with rubber gaskets. Yes____ No____

D. The inside of the pump compartment; including the top, rear wall of pump enclosure, and inside of driver and officer side pump panels shall be insulated with a minimum of 1” closed cell foam. Yes____ No____

E. All pump piping and lines shall be routed as to allow them to drain, no loops may be present to trap water and no points may be lower than the individual or Master drain valves. Yes____ No____

F. Any auxiliary cooler (OPM, Pump and Engine) provided shall return water Yes____ No____

to the tank fill tower above the over-flow level as to avoid dumping excess water on the ground and to prevent water back feeding into lines from the tank.

I. Automatic thermostatically controlled 12V heat tape/heat trace shall be provided for the pressure governor transducer and each of the master gauges (pressure and Intake) to prevent freezing and affecting operation. Shall be MC products or similar and be thermostatically controlled on the pump operators panel. Yes____ No____

8.10 ***Pump panel location:*** Pump operator's panel shall be a side mount, located on the driver's side of the apparatus directly behind the cab area and enclosed behind a roll-up door. All elbows and caps, plugs and adapters must be contained and fit inside the roll up doors when closed when capped. Yes____ No____

8.11 ***Pump panel(s):*** Pump panels shall be constructed of heavy-duty stainless steel and shall be insulated in accordance with 8.9D. Shall utilize removable panels not necessitating the use of tools for maintenance. Yes____ No____

A. Pump panel shall be well lit with LED strip lights for extended operations in the dark. Yes____ No____

B. Pump panel will be configured in an ergonomic and user friendly format. Gauges and valve handles will be color coded to each other in accordance with NFPA guidelines. Discharge handles will be labeled with a description of function, to be provided by purchaser at pre-build or mid construction conference. Yes____ No____

C. Drivers side and officers side pump panels will contain hinged access panels for inspection and maintenance of gauges, handles and components. Yes____ No____

D. Tank to pump valve, Tank fill valve, discharge relief pilot valve and primer shall be located or "grouped" together on the pump panel. Yes____ No____

E. The pump panel shall have a hinged panel for easy access to gauges for maintenance and replacement. Yes____ No____

F. Pump access hatches shall be provided in the front of the pump enclosure, accessible when the cab is jacked to facilitate maintenance. Yes____ No____

G. *Pump panel design/layout to be discussed and approved at the pre-build conference.* Yes____ No____

8.12 ***Intake valves:*** The pump will be equipped with the Waterous factory installed Yes____ No____

Monarch electric intake valves.

A. Monarch valves will be controlled with electric motors, both switched on the pump operator's panel with Waterous brand controls and indicators. Yes____ No____

B. These switches will have Waterous illuminated LED indicators showing approximate valve position or % open/closed. Yes____ No____

C. Waterous pre-valve intake relief valves shall be provided for each Monarch valve, with the adjustable pilot valves mounted as to prevent freezing. Yes____ No____

D. Cut outs in the pump panel (with decorative inserts) will be provided for manual operation of each valve in case of a malfunction. These shall be labeled as "MIV Override". One speed wrench for manual operation of the valve shall be provided with the apparatus. Yes____ No____

E. Cut outs in the pump panel for each MIV shall be large enough to allow access to the bolts for valve removal. Cut outs will be covered with stainless steel escutcheons and insulated. Fully removeable panels are also acceptable in lieu of MIV cut out's. Yes____ No____

F. Drains shall be provided for the MIV intake relief valve(s) to prevent freezing. Yes____ No____

G. Bleeders will be provided for each MIV. Yes____ No____

J. Pump shall also be supplied with 2.5" right and left side valved auxiliary intakes with swing arm valves. Yes____ No____

8.13 ***OPM:*** The pump shall be supplied with the Waterous Overheat Protection Manager (OPM) plumbed back to the water tank fill tower above the water level. Yes____ No____

8.14 ***Main drain valve:*** A Titan 10P multi-port main drain valve shall be provided. A second multi-port main drain valve will be utilized if necessary to ensure all features drain to meet winterization requirements. Yes____ No____

8.15 ***Drain Valves:*** All individual drain valves to be Class 1 lift up style drain valves and shall be plumbed to drain outside the enclosed pump compartment. Yes____ No____

8.16 ***Engine Cooler:*** An "Auxiliary Engine Cooler" shall be provided. Yes____ No____

A. Engine cooler shall be plumbed so that water does not dump on to the Yes____ No____

ground. (Return to tank fill tower above water level to avoid back feeding)

B. The Heat exchanger will be mounted to protect it from freezing, mounted either on top of the radiator or high on the side of the radiator. If heat exchanger must be mounted low on the radiator an automatic drain valve set to no more than 20 psi shall be provided. Yes____ No____

C. Engine coolant may not mix engine and pump water. Yes____ No____

8.17 ***Pump cooler:*** A "Pump Cooler" shall be provided. Yes____ No____

A. Pump cooler shall be plumbed so that water does not dump on to the ground. (Return to tank fill tower above water level to avoid back feeding) Yes____ No____

8.18 ***Valves:*** All discharge valves shall be Elkhart Brass Unibody valves. Yes____ No____

8.19 ***Valve handles:*** Intake and discharge valves shall be controlled via locking slide handles where possible and locking pull style T-handles where slide valves are not possible. To be locking from the pump operators panel. Yes____ No____

8.20 ***Electric valves:*** All other valves 3" or larger will be supplied with Elkhart Unibody electric slow-close valves. Yes____ No____

8.21 ***Master gauges:*** Master gauges shall be 6" in diameter and have LED backlighting. Gauges to be freeze protected with 12V heat trace already specified. Yes____ No____

A. Master Pressure gauge shall be white with black numbers with a <u>Red LED backlight</u>. Yes____ No____

B. Master Intake gauge shall be white with black numbers with a <u>Blue LED backlight</u>. Yes____ No____

8.22 ***Individual gauges*****:** Individual gauges shall be provided for all discharges and pre-connected lines and shall be the Class 1 analog <u>*compound*</u> gauges, white face with black numbers and hashes. Yes____ No____

A. Class 1 Flowminder value combined analog gauges with digital flowminder will be supplied for the aerial water way and the LDH discharge. Yes____ No____

8.23 ***Flow-minder:*** Included on the pump panel shall be a Flow minder indicating current gpm flow and total gallons flowed of the pump from the LDH discharge and/or the aerial waterway. A totalizer feature, showing total gallons flowed for that cycle, she be included. No other discharges need to be integrated. Yes____ No____

8.24 ***Special instruments/gauges/features on pump panel***:

1. All pump intakes will be remotely controlled from pump panel except 2.5” officer side auxiliary intake if provided with a swing valve. Yes____ No____

2. A fuel level gauge will be provided on the pump panel. Yes____ No____

3. An air horn activation button (momentary style) shall be provided and labeled on the pump operators panel. Yes____ No____

4. Hydraulic oil temperature gauge for the aerial ladder hydraulic system with red warning light and audible alarm for overheat conditions. Yes____ No____

5. A means for measuring pump RPM/speed during pump testing shall be provided, capped and labeled. Yes____ No____

8.25 ***Special pump and piping features for extreme cold:*** See section 8.9. All low points of the pump must have a drain valve so that the pump may be completely drained down in cold weather. No high points (rises) or loops will be permitted in any discharge, intake or drain lines. If the purchaser determines certain plumbing to be vulnerable to freezing additional drain valves or automatic drain valves may be required and are to be provided at the manufacturers expense. Yes____ No____

8.26 ***Intake Relief:*** A Waterous intake relief system for the fire pump shall be provided. An adjustable pilot valve will be located within the heated pump compartment to prevent freezing. This is in addition to the intake relief valves provided for the MIV’s (integral). Yes____ No____

8.27 ***Pump Intakes:***

Size:	Type of Connection:	Location:	Valved (Y/N)
6” NST	Steamer connections (2)	Right and Left	Y/ Monarch
2.5” NST	Aux. Intakes (2)	Right and Left	Y/ Slide
5” Storz	For external supply of Waterway.	Right pump panel.	Y/Elec valve
1.5”	Direct tank fill (1)	Driver side.	Y/slide

Yes____ No____

A. All intakes to be provided with appropriate caps/plugs that are secured to the apparatus. 2.5” to be NST, 5” (waterway) to be Storz. Yes____ No____

B. Steamer connections are required to be supplied with 5” storz elbow connections and plugs, secured to the apparatus. Yes____ No____

8.28 ***Discharge outlets 2.5" or larger- all to be provided with elbows and caps:*** Yes____ No____

Qty:	Type of Connection:	Location:	Flow required (min):
1	NA	Waterway	2000 gpm
1	5" Storz	Passenger side	1250 gpm
1	2.5" NST	Pump panel- drivers	500 gpm
2	2.5" NST	Pump panel- officers	500 gpm
2	2.5" NST	Platform	500 gpm

Yes____ No____

8.29 ***Discharge outlets for pre-connected hose lines:***

Qty:	Type of Connection:	Location:	Flow required:
3	1.5" NST	Pre-connects	250 gpm (min)

Yes____ No____

8.30 ***Waterway:*** A pre-piped telescoping waterway shall be provided for the aerial device, specified in section 10.11. Waterway shall be capable of 2,000 gpm at 360 degrees rotation and any elevation. Yes____ No____

A. Controls for the waterway will be provided on the pump operator's panel, aerial Pedestal and in the Platform. Use of a remote control for maximum versatility in lieu of the pump operators panel control station may be used. Yes____ No____

B. The waterway shall be plumbed as to allow the use of foam. Purchaser has new tank farms being constructed and hopes to have a means of delivering high volume foam via the waterway without having an on-board foam system. *See Alternates bid section.* Yes____ No____

B. Aerial waterway is further specified in aerial platform section. Yes____ No____

8.31 ***Pump panel color coding and identification plates:*** Pump panel color coding shall match gauges and valve handles to their corresponding discharge or intake. NFPA colors shall be utilized. Yes____ No____

A. All valves shall also be color coded to match the corresponding drain valve and pressure gauge. Yes____ No____

B. All gauges, controls, connections, displays, inlets and outlets will be clearly labeled and color coded as required by the purchaser. Yes____ No____

C. All gauges shall be located immediately adjacent to the discharge valves control(s). Yes____ No____

8.32 ***Pump lights:***

A. ***Pump panel lights:*** Both the drivers and officer side enclosed pump operators panels shall be well illuminated for use in extended periods of darkness with LED strip lighting along each side of the compartment. Yes____ No____

1. Any lights used to indicate the fire pump is engaged must be labeled as such. Yes____ No____

B. ***Pump compartment lights:*** At least two (2) LED lights will be provided inside the enclosed pump compartment, one on each the drivers and officers side. These lights are to be switched from the pump operator's panel. Yes____ No____

C. ***Rear panel lights:*** Lights will be provided for any rear control panels used for the waterway, outriggers or other pump/aerial systems. Yes____ No____

D. ***Overrides:*** Any internal compartment used for override systems or diverter valves for the aerial or outriggers must have lighting provided and be clearly labeled. Yes____ No____

8.33 ***Pump Operators Platform:*** A slide out platform for the pump operator will be provided on the left side of the apparatus to ensure the safety of the operator in case the aerial device contacts energized power lines. This platform shall have a minimum weight rating of 500 lbs with no deflection and shall including a grip strut grated insert to prevent slipping. This step shall have a positive hold open and hold closed device and shall be large enough for an operator to work the fire pump from without risk of falling off. This step shall be tied to the do not move apparatus light. Yes____ No____

8.34 ***Intercom:*** A digital intercom (specified later) shall be provided on the pump operators panel as well as the pedestal and in the aerial platform. A headset port, matching David-Clarke headsets- shall be provided on the intercom at the pump operators panel. Yes____ No____

8.35 ***Test plugs:*** UL required test plugs for pressure and vacuum will be recess mounted on the pump operator's panel. *To be provided with Caterpillar test port 6V3966 Installed for each one.* Yes____ No____

8.36 ***Hot Water Tank/Heater:*** The manufacturer shall propose, supply and install a hot water maker with storage tank on board the apparatus for the gross decontamination of personnel's PPE following firefighting activities. This is to be used for gross decontamination to reduce the risk of cancer to FFD personnel. Yes____ No____

A. Unit shall be capable of producing water that is at least 90 degrees F.

B. Unit shall produce pressure similar to a normal garden hose (approx. 30 psi) as to allow gross decontamination and debris removal of fire fighter PPE.
C. Unit shall produce at least 10 gallons, more if available. 15-20 gallons preferred.
D. Unit shall allow for a garden hose connection at the pump operators panel to be used. Bidder shall supply a 25’ coiled flexible hose with spray nozzle for delivery of the hot water.
E. Heater shall be capable of maintaining water temperature while working on scene for extended periods of time in below freezing temperatures. Tank should be insulated, mounted within the enclosed pump compartment or other protected area, and be capable of heating while on scene.
F. As this is a recent development and a newer technology in the fire service. The purchaser is very open to various designs that meets our overall intent of producing warm water to decontaminate personnel.

Yes____ No____
(A-F)

9.0 Water Tank: (NFPA CHAPTER 19)

9.1 ***Water tank:*** A 300 gallon (minimum) water tank is required. Yes____ No____

9.2 ***Water tank construction:*** Tank shall be a Poly Tank with a lifetime warranty. Yes____ No____

A. One clean-out sump shall be provided. Yes____ No____
B. A fill tower accessible from the top of the apparatus shall be provided. Yes____ No____

9.3 ***Water tank access:*** A removable polished tread plate access cover shall be provided for maintenance personnel to access and maintain the water tank. Yes____ No____

9.4 ***Tank level indicator:*** A Class 1 (or equivalent) LED illuminating tank level indicator which display's at least Full, ¾, ½, ¼, and Empty/Refill shall be provided on the pump operators panel. Yes____ No____

A. Tank level sending units must be mounted inside the heated pump compartment and easily accessible for replacement. Removal of supply hose to access and replace the transducer/sending unit is not acceptable. Yes____ No____

9.5 ***Tank to pump:*** Tank to pump flow rate shall be a minimum of 500 gpm and to be confirmed via UL testing. Yes____ No____

A. Tank to pump valve shall be a Waterous manual valve with a push/pull control handle sized to meet required flow rate. Yes____ No____

9.6 ***Tank fill:*** Pump to tank fill line shall be provided via a 2" Elkhart unibody valve and provide a fill rate of at least 150 gpm. Yes____ No____

9.7 ***Direct tank fill:*** An Elkhart Unibody 1.5" direct tank fill valve shall be provided on the driver's side pump panel. Yes____ No____

A. This valve shall be equipped with a swing type handle valve. Yes____ No____

B. This valve will allow for a minimum tank fill rate of 150 gpm. Yes____ No____

C. The ball valve she be located within the heated pump compartment, not mounted externally. Yes____ No____

10.0 Elevating Platform: (NFPA CHAPTER 20)

10.1 ***Aerial ladder platform:*** Vehicle is to be equipped with a 100’ MINIMUM 3-section steel telescoping aerial ladder platform, of the true ladder type. The aerial ladder shall be painted white in color. Certain steel components (base section lifting cradle/cylinders) may be painted red to match the cab and body. A Four section ladder would be acceptable but wider fly sections are preferred. Length the be 100’ minimum, purchaser would accept up to 110’. Yes____ No____

A. Platform shall have a minimum of 1,000 lb payload with an unsupported tip at all operating angles and elevations and maintain a minimum payload of 500 lbs at all operating angles and elevations while flowing the rated maximum flow from the waterway. Higher ratings are acceptable (Example: 1,250 acceptable and could be considered in award). Yes____ No____

1. Platform shall be capable of unrestricted operations from -05 degrees to +75 required. -12 to +80 degrees preferred, and available range of operations may affect bid award. Yes____ No____
2. Platform bucket may be either steel or aluminum construction, or a combination. Aluminum finish will be natural, brushed, and approved by the purchaser. Steel components shall be painted to match the aerial ladder or primary bucket components. Yes____ No____
3. Purchaser wishes all design and components to be focused on crew and apparatus safety. Bidder is to include all available safety features to protect the crew and/or the apparatus available from the manufacturer and detail such systems in the bid document. Yes____ No____

B. Aerial ladder platform shall be equipped with a pre-piped telescoping waterway capable of 2,000 gpm at 360 degrees of rotation. Platform shall be capable of at least 500lb rated load while the waterway is flowing max gpm at an elevation/angle. Yes____ No____

C. A steel turntable and steel torque box will be provided. To be painted or powder coated to protect from corrosion. Yes____ No____

1. The turntable shall be finished with polished tread plate and be surrounded by substantial safety rails and/or gates to prevent accidental falls. Yes____ No____
2. Cradle alignment arrows, with Scotchlite overlays, shall be provided. One shall be mounted on the turntable and one mounted on the apparatus body on the pedestal side of the apparatus to aid in bedding the aerial device manually. Yes____ No____
3. An illuminated cradle alignment light or indicator shall be provided both on the pedestal and in the aerial platform. Yes____ No____

4. The turntable area shall be provided with multiple LED lights to illuminate the work area and all stepping surfaces. Reduction of slipping in wet/icy environments is a concern. Grip strut type inserts and drains for area prone to accumulating water are required. Yes____ No____
5. The turntable shall be accessed with a deployable ladder or stairs resulting with a less than 75 degree climb angle for access. Yes____ No____
6. Grab rails and lighting shall be included for all access points. Yes____ No____

D. Outriggers/Jacks meeting the performance requirements of the vehicle as specified shall be provided as specified in section 10.18. and shall incorporate an <u>auto-leveling feature</u>. Outriggers and Jacks shall deploy at sufficient speed to typically allow the aerial ladder to be placed into operation in less than 90 seconds from the operator exiting the cab. Yes____ No____

E. The aerial ladder platform shall be built in the United States and meet the sole source requirements specified in section 1.1. Yes____ No____

F. Ladders attached to booms or articulating arms are not compliant with this specification. To be a true aerial ladder platform. Yes____ No____

G. The operating elevation of the aerial device shall be from at least -5 degrees to +75 degrees, with -12 to +80 being preferred. The aerial ladder platform shall be capable of being set on the ground at no more than 65 feet extension, from rear and side of the apparatus. Available range of operation, and the shortest possible extension-to-ground off either the side and rear of the apparatus may affect bid award and shall be clearly stated in the bid document. Yes____ No____

H. ***Arctic preparation for aerial ladder platform:*** The aerial ladder platform shall be certified to operate in ambient temperatures of -50 degrees F, to plus 90 degrees F. Bidders shall include detailed information on how they intend to meet this requirement. Yes____ No____

1. All hydraulic lines must be arctic grade silicon-based rubber. Yes____ No____
2. Hydraulic fluid must be rated for -50 degrees F to +90 degrees F. Yes____ No____
3. All petroleum-based lubricants used in the aerial device must be rated for use in -50 degrees F to +90 degrees F*. Greaseless aerial designs are permitted but not required.* Yes____ No____
4. ***<u>Hydraulic tank</u>***: The hydraulic tank/reservoir shall be equipped with heaters to prevent fluid thickening during cold weather operations. Heaters may be suppled as 12V pad style heaters, Yes____ No____

110V AC pad style heaters run off the on board hydraulic generator, or 110V AC powered immersion style heaters run off the generator as long as the intent of the specification is met. These heaters will be labeled and switched from the pump operators panel with an indicator light or thermostatically controlled. *Thermostatically controlled is preferable if possible*. Yes____ No____

5. ***Hydraulic Bucket Leveling:*** The Platform bucket will incorporate auto leveling. To ensure it operates safely during winter months; Yes____ No____

   If deemed necessary by the purchaser, after discussion with the successful bidder, a manual adjustment valve may be provided for the platform bucket auto-leveling system. *Cost to be included in bid price*. Yes____ No____

   This valve has been required on both FFDs previous Platforms. This valve will adjust hydraulic fluid flow to the bucket leveling system as to compensate for extreme cold temperatures and their effect on hydraulic fluid viscosity/flow rate. This issue has caused a corresponding proposing of the bucket it in current FFD apparatus. One uses a manual valve, and the other an electric switch for summer/winter flow. Both have resolved the issue. Yes____ No____

6. All electronic and electrical components of the aerial device, including but not limited to controllers, displays and wiring must be rated for normal operation to -50 degrees F. The use of 12V electric heat trace or heat pads may be used on displays or components to meet this requirement but must be included in the bidders document and price and be of automatic operation. Yes____ No____

I. Aerial ladder platform will be capable of operating with its rated load in winds up to and including 40 mph minimum. Yes____ No____

J. Aerial ladder platform will be capable of operating with its rated load under conditions of icing, up to a .25” thick coating over the entire aerial ladder platform structure. Due to our arctic climate additional safety margin is desired. Yes____ No____

K. Aerial ladder will be provided with a low angle rotation speed limiter. At aerial ladder elevations of less than 40 degrees rotational ladder speed will be automatically slowed to reduce the risk of damage to the apparatus or obstacles. Yes____ No____

L. A cab/body warning and avoidance system shall be incorporated and provided to prevent the aerial ladder and Platform from striking the Yes____ No____

apparatus cab and body. May replace "K" above, or work in conjunction with it.

M. The ladder shall incorporate a safety system which automatically prevents ladder rotation into an unsafe condition such as a short-jacked apparatus to avoid failure. Yes____ No____

N. All cab controls required for activation of the aerial device (appropriately interlocked) shall be located within easy reach of the driver, preferably in an overhead center console. (To include any power activation switches and or cab engagement controls). Yes____ No____

10.2 ***Slope:*** The maximum slope the aerial device will be operating on is 5 degrees. Vehicle shall be capable of unrestricted operations up to 3.5 degrees out of level on any plane. Operations shall be restricted by no more than 50% for operations from 3.5 degrees to 8.0 degrees out of level on any plane. Yes____ No____

A. Bubble type leveling gauge(s) shall be included and mounted within view of the controls for the outriggers. This gauge shall be marked with Green indicating safe operation without restriction, Yellow for areas of reduced operation and Red for unsafe for any operation. Yes____ No____

10.3 ***Intercom:*** A digital intercom for communicating between the pump panel, pedestal position and bucket shall be provided. The bucket control station shall be hands free while the remainder shall be provided with a push to talk button. Volume control will be independently adjustable for each position. Units shall be durable and designed for this purpose. Yes____ No____

A. Headset jacks, David-Clarke compatible, shall be provided at the pedestal and pump panel locations to allow the use of a headset for noise reduction. Yes____ No____

10.4 ***Rated Vertical Height:*** The minimum rated vertical height required is 100 feet, NO Exceptions. Purchaser encourages heights up to 110'. Yes____ No____

A. A gauge will be provided on the pedestal (lower control station) and in the Platform (upper control station) indicating ladder extension in feet. A visual display, such a Vista /VMUX, (or equivalent) displaying this information is acceptable. Yes____ No____

B. Ladder rails will be marked with reflective numbering on the inside of the rails indicating ladder extension in 5-foot increments. Yes____ No____

10.5 ***Rated Horizontal Reach:*** The minimum rated horizontal reach required is 91'. Yes____ No____

10.6 ***Capacity rating:*** Platform shall have a minimum of 1,000 lb payload with an Yes____ No____

unsupported tip at all operating angles and elevations and maintain a minimum payload of 500 lbs at all operating angles and elevations while flowing the maximum rated flow from the waterway. Capacity to 1,250 lbs acceptable.

A. ***Load meter(s):*** A load meter shall be included and mounted both at the pedestal and in the aerial platform. The load meter shall calculate current load and adjust as the ladder changes elevation, extension or live load. This meter shall have a visual display, percentage of load range, and an audible warning at both control stations. Yes____ No____

B. An overload audible alarm with visual warning, (Ex: yellow strobe light mounted near the tip of the aerial) shall be provided and shall alarm as the aerial approaches an overload condition before a dangerous condition exists. Yes____ No____

10.7 ***Platform access:*** The platform will have access from via a continuous aerial ladder from the aerial device. An access gate shall be provided isolating the platform from the ladder. This gate will not open when pushed on or leaned against from inside the platform. Maximum safety to reduce the risk of injury and falls while transitioning from the aerial to the bucket is required and may affect bid award. Yes____ No____

A. There shall also be Platform access via two (one per side/corner) inward swinging doors with a clear opening sufficient for firefighters wearing full PPE to safely enter and exit the bucket. These openings shall be protected with drop down safety bars. If wider access, such as for stair-chairs, is available please indicate information in your bid proposal. Yes____ No____

B. The Platform shall be equipped with 4 rated attachment points for ladder belts/safety harnesses. Yes____ No____

C. The Platform shall be equipped with two rated retractable safety lanyards/fall protection. This shall be at least 15' in length to allow transition off of the platform and onto a roof, or to work within close proximity of the bucket while maintaining fall protection. To meet OSHA fall restraint requirements. Yes____ No____

10.8 ***Breathing Air System:*** A breathing air system for the Aerial Platform and the pedestal position is required on this vehicle. Yes____ No____

A. Breathing air will be provided from two, 4500 psi, 444 cu foot, breathing air cylinders. Bottles shall be securely mounted at the base of the aerial ladder in such a way that it does not reduce compartment space and is accessible for activation from the turntable/ pedestal operators position. Bottles shall be painted bright yellow and clearly labeled "Breathing air". Valves shall be mounted oriented to the base of the ladder to facilitate Yes____ No____

opening/activation from the pedestal position.

B. Refill capabilities of the breathing air storage bottles shall be provided that does not require removal of the cylinders. A 75' hose with fittings will be provided by the successful bidder to refill the apparatus breathing air supply. The hose shall connect via a refill connection at the pedestal, from a MAKO air compressor mounted in the fire station. Yes____ No____

C. Four (4) female Foster breathing air connections shall be provided in the bucket. *Locations to be decided at the pre-build conference.* Yes____ No____

D. One breathing air connection shall be provided at the pedestal. Yes____ No____

E. Digital gauges (Class 1 bar graph style or similar visual display) clearly indicating breathing air tank levels shall be provided in the bucket and at the turntable. Audible and visual breathing air low level alarms shall be provided at the pedestal, in the bucket and at the pump operator's panel. Vista display/VMUX displays may be acceptable to meet this, but any low air warning display must default to the display screen immediately and be blatantly obvious to the users. Yes____ No____

F. Air system, including air lines and regulators, shall be capable of supplying air to four of the breathing positions simultaneously. System must be compatible with MSA SCBA's with 4,500 psi cylinders. Air system must pass air quality testing upon arrival. Yes____ No____

G. Readily available standard filters shall be utilized and mounted in a way to allow easy service. Enough spare filters shall be provided for two (2) services. Yes____ No____

H. An easily accessible manual bleed off valve must be supplied at the bucket and pedestal for system checks and maintenance. Yes____ No____

10.9 ***Platform Deck Gun:*** The aerial platform shall be equipped with one deck gun/ monitor mounted on the bucket. Yes____ No____

A. The deck gun/monitor shall be capable of a minimum of 2,000 gpm. Yes____ No____

B. The deck gun/monitor shall be mounted on the front of the platform bucket, centered and facing forward. These may not interfere with the platform access doors. It shall have an unobstructed range of motion up, down, left and right. Yes____ No____

C. The deck gun/monitor shall be electrically operated, equipped with a stream straightener and smooth bore stacked tips sizes capable of 2,000 Yes____ No____

gpm. Included tip sizes shall be 2.5", 2", 1.75", and 1.5".

D. The deck gun/monitor shall be an Elkhart Scorpion model. This deck gun/monitor will be 12V and be controlled electrically via hardwired controls from the platform bucket and the pedestal. It will also either have a wireless remote or tethered remote allowing control from the pump operators panel. Manual controls will be available in the bucket in case of failure and any tools required to operate via overrides shall be provided and mounted near the appliance. Yes____ No____

This deck gun/monitor shall be equipped with the smoothbore stacked tips specified and include a fog nozzle that easily replaces the stacked tips when needed. The controls will be capable of controlling elevation of the nozzle, right and left swing of the nozzle and pattern of the stream in multiple increments between straight stream and fog. *Mounting locations for control heads to be determined at the pre-build conference.* Yes____ No____

E. The deck gun/monitor shall be equipped with a manual slow operating valve. Yes____ No____

F. A 75 gpm water curtain system as required by NFPA will be provided. This water curtain system will be activated by a quick acting valve and the actuator will be conveniently placed in the platform. Shower heads will be provided with automatic drains to prevent freezing. Yes____ No____

10.10 ***Platform hose connections:*** Two, 2.5" hose connections shall be provided on the front of the aerial platform intended for use as an elevated standpipe. These connections will be controlled by swing valves at the aerial platform. These discharges will both be provided with a 2.5" to 1.5" reducer and cap. Yes____ No____

10.11 ***Waterway:*** Aerial ladder platform shall be equipped with a pre-piped telescoping waterway capable of 2,000 gpm at 360 degrees of rotation and any elevation while maintaining a platform weight capacity of at least 500 lbs. Yes____ No____

A. The waterway shall be equipped with an internal relief valve to prevent over-pressurization. Yes____ No____

B. The waterway shall be capable of being supplied externally from a separate water source without use of the apparatus pump, as well as from the apparatus fire pump. The external connection shall be mounted on the Officer side pump panel of the apparatus and terminate in a 5" Storz fitting with a slow closing electric valve. Yes____ No____

C. Automatic drain valves shall be provided that ensures complete draining of the waterway when activated. These valves must be controlled from one Yes____ No____

location- activation of multiple valves, or from multiple locations is not acceptable. These valves will also act as a vacuum relief for the waterway when extending the aerial device with the discharges in the closed position.

D. Waterway will be provided with a digital flow meter and pressure gauge showing current flow rates, current intake pressure and total flow discharged through the waterway. This is in addition to the pump flow meter. Gauges/Display through the VMUX or other equivalent means meet this requirement. Yes____ No____

E. Waterway control valve shall be located on the pump operator's panel. Indicator lights (LED) shall be provided indicating current valve position. Yes____ No____

10.12 ***Aerial Ladder Platform Controls:*** The aerial ladder platform controls shall be a three-lever control system; Extension/Retraction, Raise/Lower, and Left/Right rotation. Two sets of controls will be provided. Joysticks are acceptable but not required. Appropriate safety interlocks shall be provided. Yes____ No____

A. One set of controls will be mounted at the aerial operator's pedestal. This will be the lower control station. Yes____ No____

B. One set shall be provided for control from the bucket, this will be the platform control station or upper control station. To be mounted in the center front position of the basket. Moveable controls are not required. Yes____ No____

C. The lower control station will have the ability to override the platform control station. Yes____ No____

D. ***Pedestal/Lower control station:*** The pedestal/lower control station shall be provided with a hinged hard cover, be well illuminated for operations in the dark and be equipped with at least the following; Note- A VMUX/Vista type display screen may be used to accomplish some of these functions. Exact proposal to be included in bid package. Yes____ No____

1. High Idle control (if not automatic by demand). Yes____ No____
2. Cradle alignment light. Yes____ No____
3. Rung alignment light. Yes____ No____
4. Emergency override indicator light. (In an override condition) Yes____ No____
5. Hydraulic system pressure gauge. Yes____ No____
6. Ladder extension gauge showing feet of extension and angle. Yes____ No____
7. Low air alarm and air level gauge (audible and visual as specified) Yes____ No____

8. Bubble gauge- indication degrees of ladder elevation. Yes____ No____

9. Deck gun/monitor controlsm, as specified. Yes____ No____

10. Remote engine start button. Yes____ No____

11. Control of EPU’s/emergency pumps. Yes____ No____

12. Ladder power switch, if utilized. Yes____ No____

13. Controls for ladder operation. Yes____ No____

14. Load chart. Yes____ No____

15. Ladder load, angle extension gauge. Yes____ No____

16. Hydraulic oil temperature gauge with red warning light and audible alarm for overheat conditions. Yes____ No____

17. Deadman switch or any safety interlocks required for safe operation. Yes____ No____

18. Switch for activating red/blue aerial walkway lights. Yes____ No____

19. All gauges, controls, levers, and displays shall be clearly and permanently labeled. Yes____ No____

E. ***Platform control station:*** The platform control station shall be well illuminated for operations in the dark, have a hinged cover for protection from the elements while stowed and provide at least the following; Yes____ No____

1. Controls for ladder operation. (Raise/lower, Extend/Retract, Rotation). 3 controls or joystick allowed. Yes____ No____

2. Bubble angle indication gauge. Yes____ No____

3. Ladder speed selection switch which provides for full speed ladder operations and lower ladder operational speeds for operations in close proximity to a structure or obstacles. Yes____ No____

4. Rung alignment light. Yes____ No____

5. Cradle alignment light. Yes____ No____

6. High idle switch (if not automatic). Yes____ No____

7. Load chart. Yes____ No____

8. Emergency override indicator light. Yes____ No____

9. Low air alarm and breathing air level gauge. Yes____ No____

10. Ladder angle, extension and load indicator. Yes____ No____

11. Intercom controls (not required to be at console). Yes____ No____

12. All gauges, controls, levers, and displays shall be clearly and permanently labeled, Yes____ No____

10.13 Low voltage (12V) lighting: The following 12V LED lighting shall be provided to support aerial operations. All lights to be individually switched. This is in addition to previously specified scene lighting. To be switchable spot/flood fixtures, similar to Collins FX-9 but LED. Yes____ No____

Qty:	Spot/Flood:	Location:	Details:
2	Combination LED spot/flood fixtures	Base Section of ladder on rails.	Positioned to illuminate aerial ladder sides/rungs.
2	Combination LED spot/flood fixtures	Front corners of aerial platform.	To illuminate area in front of platform.
2	Combination LED spot/flood fixtures	Top of body	To illuminate cradle during bedding operations and hose loading.

Yes____ No____

10.14 *Line voltage lighting:* AC LED lighting is to be provided on the aerial device and powered by the on-board Harrison 12KW 120/240V PTO generator specified in section 13. This is in addition to any further AC lighting specified in section 13. Yes____ No____

A. Switching for these lights shall be in the aerial platform and at the pedestal (lower control station). Wired to control lights independently from either position. To be Fire Research Spectra or Equivalent. Yes____ No____

Qty:	Spot/Flood:	Lumens:	Location:	Details:
1	Flood	28,000 min	Front: lower leading edge of platform.	To illuminate area in front of platform.
2	Flood	28,000 min	Underside of platform.	To illuminate area directly below the platform.

Qty:	Spot/Flood:	Lumens:	Location:	Details:
2	Flood	28,000 min	Right and Left rear corners of platform bucket	Telescoping and tiltin, on swivel mounting poles. To provide illumination at any angle from platform.

Yes____ No____

10.15 ***Line voltage to platform:*** Two 20-amp duplex straight blade outlets designed for wet locations shall be provided conveniently located in the aerial platform for the use of AC powered tools and equipment. Yes____ No____

10.16 ***Hydraulic system:*** Aerial ladder, bucket and Outriggers;

A. The hydraulic system shall be capable of simultaneous operations. Simultaneous shall be defined as two outriggers performing functions at the same time, or two or more ladder functions being performed at the same time. Speed of operation and set up is a primary design consideration. Yes____ No____

B. The hydraulic system shall meet all arctic requirements already specified. Yes____ No____

C. Hydraulic filter restriction gauges (if utilized) shall be mounted in a location easily accessible for routine checks without deploying outriggers or raising the ladder. Yes____ No____

D. Access to check the hydraulic fluid level shall be easily accessible and done via a clearly labeled dipstick or site glass (preferred) from ground level. Fluid to be arctic grade. Yes____ No____

E. Hydraulic fluid temperature gauges shall be provided at the pedestal and at the pump operator's panel. These gauges will be accompanied by a red warning light and audible alarm in case of overheat condition. Yes____ No____

10.17 ***EPU's:*** The apparatus will be provided with emergency hydraulic pumps plumbed into the hydraulic system and powered by the chassis batteries in the event of the main hydraulic pump or chassis engine failure. The emergency pumps shall be capable of limited function of the aerial ladder and the outriggers as to allow the apparatus to return to a road travel state. Yes____ No____

10.18 ***Outriggers:*** Four independently controlled outriggers shall be provided that are capable of leveling the vehicle side to side and fore Yes____ No____

and aft in a minimal amount of time. Please indicate estimated time from applying chassis brake tor raising the aerial from the cradle.

Purchaser will accept out/down "H" style outriggers, "A" frame outriggers or any combination that meets the stability and operability requirements of the specification. Setting up in the least amount of required room is desirable. Yes____ No____

Automatic systems are acceptable as long as manual setting of outriggers is possible if necessary. Self-leveling or Auto-leveling systems are required as previously specified. Use of tethered or remote controls is acceptable/encouraged. Yes____ No____

A. Maximum stance from outer edge of driver's side outrigger to outer edge of officer's side outrigger when fully extended for maximum stability is not to exceed 18 feet. Purchaser requests minimum spread available. Yes____ No____

B. Outriggers will be capable of obtaining a minimum of 10" of ground penetration for set-up on uneven terrain. Yes____ No____

C. Outriggers which do not require the placement of additional safety pins is preferred. Yes____ No____

D. Outriggers will be provided with a full floating, self-centering, permanently attached steel pads that requires no operator adjustment during set-up. Yes____ No____

E. Four (4) aluminum alloy, polycarbonate or similar auxiliary outrigger pads will be provided, one per outrigger, for additional load distribution. Each pad will have a handle for ease of use. Each pad will be mounted conveniently close to its corresponding outrigger. Yes____ No____

F. Each outrigger will be provided with a 12V LED light which illuminates the area around the outrigger as it is deployed. The outrigger lights shall activate automatically when the outriggers are deployed and remain illuminated. Yes____ No____

G. Each outrigger will be provided with a red flashing LED warning light mounted in the outrigger cover panel activated with the ladder power circuit and set to flash during outrigger operations. Yes____ No____

H. Each outrigger will be provided with a chrome or polished treadplate or aluminum cover to integrate with the body design when in the stowed position. Yes____ No____

I. Each outrigger will be provided with a double-faced LED red flashing light mounted on the inner surface that activates when deployed, aiming front/rear. Two single faced lights or lights recessed into the outrigger beams are acceptable. Yes____ No____

J. Each outrigger will be provided with Scotchlite reflective tape on both sides of the horizontal and vertical beam surfaces, chevron pattern to match rear of apparatus. Yes____ No____

K. Outriggers will be provided with an audible warning device to warn personnel when the outriggers are in motion. Yes____ No____

L. Two bubble type leveling indicators shall be provided on the rear of the apparatus, one on each side to assist in outrigger deployment and leveling of the apparatus. Gauge will indicate slope and will be color coded green for full operational range, yellow for reduced and red for unsafe to operate. Yes____ No____

M. Each outrigger/jack will activate an indicator light when it is fully deployed and in firm contact with the ground showing proper deployment. May be done via VMUX or display. Yes____ No____

N. An interlock system that prevents the ladder from being raised from the nested position until all jacks are in the load supporting position shall be supplied. Yes____ No____

O. An interlock shall be provided that limits ladder rotation to a side of the apparatus that has one or more outriggers at less than full extension (short-jacked). Apparatus will be capable of full ladder operations on the side of the apparatus that has full jack extension. Yes____ No____

P. A manual override which allows aerial operation, in case of an outrigger sensor malfunction, shall be included. The override shall allow for full ladder Yes____ No____

operation to the side of the apparatus that the malfunctioning sensor indicates is short jacked. One-person operation is preferred.

Q. Outrigger controls shall be placed on each side of the apparatus so that the operator has a clear view of the outriggers being controlled. Controls shall be enclosed or recessed to protect from damage or accidental activation. Remote control, tethered or otherwise, for operation of the outriggers is acceptable. Yes____ No____

R. A high idle control switch shall be mounted on the rear of the apparatus in close proximity to both outrigger controls (or on the remote if utilized) to aid in rapid outrigger deployment, if not performed automatically upon operation. Yes____ No____

Aerial Ladder/Platform features and equipment:

10.19 ***Ladder illumination lights:*** The ladder sections shall be equipped with blue or red LED lights that are staggered to illuminate the ladder rungs for night time operations. These lights shall be wired into the Ladder Power circuit and have a disable switch on the pedestal. Yes____ No____

10.20 ***Bucket lift eyes:*** Two (2) steel lift eyes will be mounted to the bottom of the platform. Each eye will be rated for a minimum of 500 lbs, for a total lifting capacity of 1,000 lbs. Yes____ No____

10.21 ***Gates:*** The platform shall be equipped with a minimum of two (2) self-closing access gates, one on each side of the platform. Purchaser would be interested in a three door design, with the third door in the front of the aerial platform, if available. Yes____ No____

A. Gates shall be of "swing in" design to facilitate opening when close to a building. Yes____ No____

B. Door hardware shall be easily operated from inside and outside of the platform with gloved hands. Yes____ No____

10.22 ***Bucket lifting brackets/ arms:*** The bucket shall be equipped with two detachable or stow-able arms("Jibs") designed for the hoisting of equipment and/or mounting a Stokes type rescue stretcher. Yes____ No____

These arms shall allow for placing and securing the full-size rescue stokes stretcher, with a victim, on the platform (Ex: across the rails Yes____ No____

or front of the bucket). Secure storage for these brackets/arms shall be provided in the platform in an area that does not impede operation of the platforms monitors, gates, or create a loss of interior work space. Yes____ No____

10.23 ***Bucket roof ladder mounts:*** Brackets shall be provided on each side of the platform capable of holding a 12'-16' roof ladder securely in place to allow a firefighter to safely descend over a parapet wall or extend the reach of the aerial ladder. Mounting brackets shall be rated for a minimum of 500 lbs and may not impede operation of the platforms monitors, gates or create a loss of interior work space. Yes____ No____

10.24 ***Platform storage:*** Storage for the following items will be provided in the platform; Yes____ No____

A. Four (4) 10' air lines with fittings for connection from SCBA's to platform air system. Yes____ No____

B. One pick-head fire ax. Yes____ No____

C. One Halligan tool. Yes____ No____

D. 50' of 1.75" fire hose and a nozzle. Yes____ No____

E. Additional enclosed storage a space permits. Yes____ No____

10.25 ***Stokes basket storage:*** Enclosed, sealed storage for a stokes rescue basket and all associated hardware and rigging will be provided on the exterior of the base section of the ladder. This box shall be painted red to match the chassis and lettered as stated earlier. Stokes to be the Ferno Advantage Model with adjustable lifting bridle. Yes____ No____

Purchaser is open to alternative mounting locations and deployment of the stokes litter if improves accessibility and deployment when needed. Yes____ No____

10.26 ***Equipment mounted to fly section of ladder:*** The following equipment shall be provided and mounted by the successful bidder; Yes____ No____

A. A Duo-Safety 12 ft roof ladder, specified in section 2.5, will be mounted on the inside of the fly section of the ladder. Yes____ No____

B. An 8 ft pike pole, specified in section 2.7, will be mounted on the inside of the fly section of the ladder. Alternate mounting Yes____ No____

locations will be considered if the clearance between the roof ladder and the pike pole is reduced enough to restrict safe passage of personnel climbing the ladder.

10.27 ***Platform floor:*** The platform shall be self-draining, non-slip, and provide the maximum interior space possible. Yes____ No____

A. A minimum of an 8" step around the perimeter of the platform to aid in access and egress is preferred. This step will have swept corners to allow better access to structures. Yes____ No____

B. Heavy duty rubber bumpers will be provided around the outside edge of the platform floor to prevent damage when contacting a wall or structure. Yes____ No____

10.28 ***Platform pads:*** The bottom of the platform shall have heavy duty rubber pads that will provide a contact point with the ground when the platform is lowered to ground level. Yes____ No____

A. No point on the platform shall be lower than these contact points. Yes____ No____

B. These pads shall be designed to prevent damage to the bottom of the platform when it is lowered to ground level. Yes____ No____

10.29 ***Platform lanyard connections:*** The platform will be supplied with four (4) connection points for ladder belts or safety lanyards. Connection points will be distributed at different points in the platform and of sufficient strength to support the weight of a fully equipped firefighter in case of a serious bucket failure or fall. Yes____ No____

A. Two retractable safety lanyards, at least 15' in length, including shock load protection shall be included and mounted in the platform bucket to facilitate controlled egress and transition from the bucket when working within the immediate vicinity of the platform bucket. Shall meet OSHA fall protection standard. Yes____ No____

B. Purchaser is interested in integral climbing safety retention systems if available from the manufacturer. This system would allow a firefighter to be clipped into a safety line preventing long falls while climbing the aerial ladder. If you have a system that meets this intent, it shall be included in the bid price. Please include details of your proposed system in the bid package and availability of such a system may be considered in the award of the bid package as a safety priority item. Yes____ No____

10.30 ***Platform cleaning:*** Platform bucket should have the capability of being lowered (tilted down from level) while the aerial ladder is in the stowed or road travel position to facilitate cleaning by hosing out debris.

Yes____ No____

11.0 Line Voltage Electrical System- AC (NFPA CHAPTER 23)

11.1 ***Hydraulic Generator:*** A Harrison 12KW 120/240V hydraulic generator powered from the chassis transmission PTO shall be provided. A digital read out panel for the generator shall be located on the pump operator's panel shall also be provided. *Mounting location to be discussed and decided at the pre-build conference.* Yes____ No____

A. Generator to be relayed to disengage when the parking brake is released. Yes____ No____

B. Activation switch for generator is to be via the VMUX Vista displays. Yes____ No____

C. Generator hydraulic reservoir shall be supplied with a 12V heat pad. This pad will be securely fastened with hi-temperature silicone. This heat pad will be controlled via a labeled switch, with corresponding indicator light, on the pump operator's panel with other winterization features. Yes____ No____

D. If generator is mounted in an enclosed area, access panels that do not require the use of tools for maintenance shall be provided. Air flow requirements per the manufacturer shall be maintained. Yes____ No____

E. If generator is mounted in an exposed location, a heavy duty polished aluminum tread plate protective cover will be manufactured and installed. Price of fabrication and installation of this cover is to be included in the bid price. This cover will include slots as required to allow adequate ventilation, and be strong enough to support a firefighter standing on it. Yes____ No____

F. In either mounting scenario, 11.1 (D) or (E), access to check generator hydraulic oil level will be provided which does not necessitate the use of tools. Yes____ No____

11.2 ***Receptacle Information:*** AC Powered- All electrical outlets are to be weatherproof and rated for wet environments, regardless of mounting location. *Circuit breaker box location and layout to be decided at the pre-build conference.* All circuit breakers shall clearly labeled. All 120V plugs to be straight blade, non-twist lock. Yes____ No____

Qty:	Amps/Volts:	Style of Recep:	Location:
4	20 amp/120V	Duplex, straight blade	Mounted inside of compartments, 2 per side of apparatus, one near front and one near rear. *Exact location to be decided at pre-build conference.*
2	20 amp/120V	Duplex, straight blade	In aerial platform, one per side.
2	30 amp/240V	30 amp twist lock.	Same compartment as breaker panel, and one on opposite side of truck.
2	20 amp/120V	Duplex, straight blade	To be placed for accessories as needed by the purchaser at the preconstruction conference.
2	20 amp/120V	Duples, straight blade	Positioned per side for removable lights below.

Yes____ No____

11.3 ***120V AC <u>LED</u> Volt Lighting Information:*** (Platform lights also Covered in 10.14, table includes ALL AC lighting)

Style/Make:	Location:	Wattage/Bulb:	Mounting:
FRC Spectra or Equiv.	(2) Bottom of platform	28,000 lumens	Fixed
FRC Spectra or Equiv.	(1) Front edge of platform	28,000 lumens	Fixed
FRC Spectra or Equiv.	(2) Right and Left, rear of platform.	28,000 lumens	Telescoping & tilting
FRC Spectra or Equiv.**	(4)- 2 on each side of apparatus, removable.	20,000 lumens	On removable tripod base, near each cord reel**

Yes____ No____

******A total of four (4) FRC Spectra or Equivalent portable LED AC combination spot/flood lights on a portable tripod ground base shall be included mounted two per side of the apparatus near the cord reels. These will allow the lights to be used as fixed scene lights mounted to the apparatus or quickly released via a spring loaded locking pin and used as a portable light.

Yes____ No____

11.4 ***Cord Reel Information:*** To be Hannay brand cord reels w/ electric rewind controlled via momentary type switch or button mounted adjacent to the corresponding reel. To be supplied with roller heads and junction box specified below.

Yes____ No____

A. An aluminum holster for each junction box shall be manufactured and mounted with each cord reel.

Yes____ No____

B. Cord to be yellow in color, arctic rated. Yes____ No____

	Reel 1:	Reel 2:
Mounting Location:	Left, forward to midship	Right, forward to midship
Amperage:	20 amp	20 amp
Voltage:	120V	120V
Length of Cord in feet:	250 ft of 10/3 arctic grade	250 ft of 10/3 arctic grade
Receptacle style:	2 x Duplex, straight blade	2 x Duplex, straight blade
Distribution box:	Circle D PF-51G-SMI-YEL weatherproof w/LED indicator light.	Circle D PF-51G-SMI-YEL weatherproof w/LED indicator light
Rewind system:	12V push button.	12V push button.
Additional:	Four way rollers and ball stop shall be provided.	Four way rollers and ball stop shall be provided.

Yes____ No____

11.5 ***Shoreline inlet:*** See section 4.1. Only required to power AC outlets locate inside the cab area.

12.0 Training and Manuals:

12.1 *Manuals:*

A. Three (3) complete operator's manuals for the cab and chassis shall be included. Yes____ No____

B. Operators manuals shall be provided for all components supplied with the apparatus not manufactured by the successful bidder. These items to include but not limited to the Harrison generator, lights, Kussmaul unit, Hannay Reels, Hot water maker, etc. Yes____ No____

C. Three (3) parts manuals for the cab, chassis and body shall be included. Yes____ No____

D. Three (3) complete as built wiring diagrams for the cab, chassis, and body shall be provided. Yes____ No____

E. One copy of all Binary and Program Files provided to City Public Works Dept. Yes____ No____

F. Copies of all shop notes referencing wiring and plumbing shall be included. Yes____ No____

G: At least one Electronic copy of A-F shall be provided (as part of the three total). At least one shall copy shall be printed. The third can be discussed. Yes____ No____

12.2 *Training:* A total of not less than eight (8) days of onsite operational and maintenance training shall be provided. Yes____ No____

A. Training will be provided on site in Fairbanks, Alaska. Yes____ No____

B. There shall be not less than six days (two days per operational shift- so that ½ of on duty personnel can be trained at a time) of training provided on this apparatus after acceptance. Additional days will be provided if necessary to ensure competent operation of the vehicle by operational staff members. Yes____ No____

Training will include, but is not limited to, operation of all vehicle cab and chassis components, generator operation, outrigger operation, aerial set-up and use, overrides, pump operation, and any other included vehicle systems. Yes____ No____

C. Two additional days of training will be provided on site in Fairbanks, Alaska, for City of Fairbanks maintenance personnel in the preventative maintenance and maintenance of the cab, body, chassis, electrical system generator, fire pump, hydraulic system, outriggers, aerial ladder/Platform, breathing air and all included components. Yes____ No____

D. Successful bidder shall make training available for Fairbanks Fire maintenance personnel on the long-term care and maintenance of the apparatus and all its components. Further information and any additional costs shall be provided with the bid packet. Yes____ No____

E. City of Fairbanks Public Works department will be certified to operate as the warranty repair facility on this apparatus by the manufacturer. Any training required to achieve this shall be included in the bid price. ***No Exceptions.*** Yes____ No____

12.3 ***Maintenance:***

A. All disposable materials required for the first preventative maintenance cycle of the apparatus and included components shall be provided with the apparatus. Yes____ No____

B. This vehicle must be maintained in Fairbanks, Alaska. Successful bidder will certify the City of Fairbanks Public Works department as a warranty repair facility. **No Exceptions.** Note: This does not preclude using Cummins, Allison or specialty welders for warranty work when required. Yes____ No____

C. Apparatus will be serviced in Fairbanks, Alaska prior to delivery and purchaser acceptance to remove all greases, oils and lubricants used during shipping or demonstration with the specified arctic grade components. Yes____ No____

D. A large container of various fasteners (screws/bolts), washers, and nuts shall be provided with the apparatus. Yes____ No____

E. All necessary diagnostic software for the vehicle shall be provided. Yes____ No____

G. Purchaser will supply a list of typical wear items they would like to have bid separately and supplied with the apparatus. Bidder will provide prices and ship with the vehicle if requested by purchaser. (At pre-build or mid inspection conference). Yes____ No____

13.0 Delivery and Warranties:

13.1 ***Delivery date:*** Bidders will include an estimated delivery date, in calendar days, in their bid package.

A. Delivery date not to exceed 400 days from award of bid. Yes____ No____

B. The purchaser will implement a late fee of $200.00 per day for each day beyond the 400th day that the vehicle is not in Fairbanks, Alaska and accepted by the purchaser, unless arrangements for use as a demo unit are negotiated and agreed to. Fee would then apply only after agreed upon date. Yes____ No____

C. Consideration will be given for manufacturers that can provide the apparatus ahead of the required delivery date. Yes____ No____

D. Purchaser would consider a plan to allow this apparatus to be used as a demonstration unit for a limited period of time after completion and before delivery. This would be done to delay delivery of the apparatus until mid-April to allow testing and training to occur over spring/summer months. This may not be acceptable if it delays delivery past May 1, 2020. Yes____ No____

1. Warranty would not begin until acceptance testing was completed following delivery. Yes____ No____
2. Manufacturer will provide how much money would be discounted off the purchase price of the completed apparatus if the purchaser accepts the arrangement. Yes____ No____
3. Final plan and details, to be mutually agreeable, must be approved by the purchaser. Any and all damage would be the sole responsibility of the bidder to repair/replace to have apparatus delivered "like new" including wear items. Yes____ No____

13.2 ***Inspection trips:*** The following inspection trips will be included in the bid price of the apparatus. Yes____ No____

A. Five (5) persons to the successful bidders manufacturing site for a facility tour and pre-build conference. Included will be airfare, ground transportation, lodging and meals. Minimum 2 days at facility plus travel. Four persons from FFD, one from Public Works/shop. Yes____ No____

B. Four (4) persons to the successful bidders manufacturing site for a mid-inspection of the cab/chassis prior to mounting of the apparatus body. Torque box shall be completed and mounted. Included will be airfare, ground transportation, lodging and meals. Minimum 2 days at facility plus travel time. Three persons from FFD, one from Public Works/shop. Yes____ No____

C. Four (4) persons to the successful bidders manufacturing site for a final inspection following 100% completion. Included will be airfare, ground transportation, lodging and meals. Minimum 2 full days at facility plus travel. Minimum 2 days at facility plus travel. Three persons from FFD, one from Public Works/shop. Yes____ No____

D. Manufacturer will post pictures and provide online access to track the progress of the vehicle during manufacture and assembly. Yes____ No____

13.3 ***Warranties:*** The following basic warranties will be included for the apparatus and take effect after the purchaser accepts the apparatus and places it in service. All manufacturer warranties on equipment that exceed this specification shall be included and the purchaser notified of them. Yes____ No____

A. 1-year bumper to bumper warranty of all vehicle components (including but not limited to cab, chassis, body, electronics, HVAC, cooling, steering, suspension, electrical, starter, alternator, emergency lights, siren, and all features & options) including parts and labor. Yes____ No____

B. 5-year warranty for engine and transmission. Yes____ No____

C. 10-year warranty on body and cab structure. Yes____ No____

D. 15-year warranty against corrosion on cab and body. Yes____ No____

E. 3-year warranty on axles. Yes____ No____

F. 5-year warranty on apparatus paint (unless damaged by corrosion) Yes____ No____

G. 20 years on torque box and aerial ladder structure. Yes____ No____

H. Lifetime warranty on chassis frame. Yes____ No____

14.0 Additive Alternates

The following are items the purchaser may be interested in purchasing as part of, or in addition to, the specified vehicle. These items are to be bid individually on a separate page and NOT included in the bid price of the vehicle unless furnished as standard equipment by the manufacturer.

14.1 ***Extended Warranty:*** The purchaser will supply with the bid package options for an all-inclusive (bumper to bumper) extended vehicle warranty. The purchaser seeks 5 year coverage on cab, chassis, body, HVAC, electrical and hydraulic systems. The bidder will break out extended warranty costs in two, three, four and five year increments.

Two years: $_____
Three years: $_____
Four years: $_____
Five years: $_____

14.2 Spare Ladders: Please include the price for the following spare ground ladders to be shipped loose on/with the apparatus. Please price as each:

Length:	Type:	Make and Model:	Price:
14’	Roof	Duo-Safety model 875A	
16’	Roof	Duo-Safety model 875 A	
22’	Little Giant	Model Type 1AA Model 22	
24’	Extension	Duo-Safety, 900-A 2 sec.	
28’	Extension	Duo-Safety, 900-A 2 sec.	
35’	Extension	Duo-safety, 1225A, 3 sec	

14.3 Stainless Steel Upgrade: If available please provide the cost for changing the cab and body primary construction material from Aluminum to Stainless Steel and specify how this affects the warranty period (Lifetime?)

Cost: $_____

14.4 Compartment Lining: Please indicate the cost to coat the interior of all the body compartments with grey/silver zolotone, or spray on liner such as Linex, or equivalent. This would be ILO the natural aluminum finish with splatter paint specified.

Cost: $_____

Note: If Zolotone or Linex is the manufacturer normal compartment finish, indicate the credit for allowing these ILO of the specified natural aluminum finish w/Splatter paint.

Credit: $_____

14.5 Fuel Tank Options: Purchaser seeks longer travel range then provided by the standard 65 gallon fuel tank. Please provide options and associated costs to upgrade to a larger fuel tank if available.

Cost: $_____ and size: _____

14.6 Fire Pump: Upgrade to a Waterous two stage 2,000 gpm fire pump consistent with other FFD apparatus and include manual Waterous transfer valve with indicator lights.

Cost: $_____

14.7 Fire pump controls: Upgrade to a Class 1 TPG pressure control system for control of the fire pump ILO the rpm-controlled system with manual discharge relief valve.

Cost: $ _____

14.8 Waterway foam system: Upgrade to include a system that allows firefighting foam to be discharged from the waterway. This may be provided by an around the pump foam proportioner tied into the waterway discharge or via a high flow external inline educator and foam pick up. No full foam system or foam tank is required. Purchaser has a new tank farm being installed in our district and is interested in ways to discharge high volumes of foam via the aerial waterway and is open to bidder supplied proposals.

Cost: $ _____

Please include a description of your proposal.

15.0 Specification Deletions for Credit:

The Fairbanks Fire Department may consider the deletion of the following items from the bid specification for available credit. Please indicate the credit from the total bid price that would be given if these individual items were eliminated;

1. **5.3**- Deletion of the center rear jumpseat/SCBA seat. Place simple padded bench between two remaining seats ILO deleted seat. Credit = included expense of padded bench.

   Credit:$_____.

2. **6.2 (B) (5-9) -** Deletion of unused compartment trays/shelves.

Credit Ea:	1,000 lb tray:	$_____.
	1,000lb½ depth transverse roll out tray:	$_____.
	500 lb roll out tray:	$_____.
	250 lb tilt/drop tray:	$_____.
	Tool board, swing or slide.	$_____.
	Adjustable shelf:	$_____.

3. **6.2 (C)-** Deletion of PaK-Trak compartment mounting system from walls and back of the additional four compartments specified (May choose to delete individually).

   Credit Each: $_____.

4. **6.4 -** Deletion of unused grab rails (price each).

   Credit:$_____.

5. **6.5 (C)-** Deletion of unused fold down steps (price each).

   Credit:$_____.

6. **6.5(D)**- Deletion of extra specified slide out steps/platforms;

   Credit: $ _____.

6. **6.3 C-** Deletion of protective tread-plate around rear tires and rear cab overlay.

   Credit:$_____. (Around Tires)

Credit:$_____. (Rear Cab Overlay)

7. **5.9**- *Front View Recording System*- Deletion of the route recorder system.

   Credit: $_____.

8. Deletion of the On-Spot automatic chain system specified.

   Credit: $ _____.

9. Deletion of **A(6)** 100% performance bond requirement.

   Credit: $_____.

10. Deletion of **5.1(F)** power windows; (provide manual crank windows only)

    Credit: $_____.

11. Credit for equipping apparatus with manufacturers standard 12V batteries in lieu of the specified Odyssey batteries.

    Credit: $ _____.

12. Reduction from Harrison 12 KW generator to a Harrison 10 KW generator. All other requirements/specifications remain.

    Credit: $_____.

13. Reduce Cummings 600 hp motor to same Cummings motor with a 550 hp rating.

    Credit: $_____.

14. Change from independent front suspension to Meritor solid front axle with tapered leaf springs and shocks rated to meet the GVW requirements of the vehicle, not less than 21,500 lbs.

    Credit: $_____.

15. Delete two the extra AC powered outlets supplied by the generator that were specified to be placed at the pre-build conference.

    Credit: $ _____

Fairbanks Fire Department

2019 100’ Aerial Ladder Platform Quint Vehicle Specification

Required Bid Information:

1. GVWR of apparatus as specified:
   _____

2. Turning radius of apparatus as specified: (Include Diagram as Specified)
   _____

3. Height of vehicle at highest point:
   _____

4. Length of vehicle in feet and inches:
   _____

5. Wheelbase of vehicle as specified:
   _____

6. Aerial Ladder Platform:

   Length in feet: _____

   Vertical reach: _____

   Horizontal reach: _____

   Operating Range: (Degrees) _____ to _____

   Min Extension for bucket to ground: Side: _____
   Rear: _____

   Time to set up for aerial deployment: _____

8. Does the bid apparatus utilize all wheel disc brakes? [ ] Yes [ ] No

9. Does the bid apparatus have independent front suspension? [ ] Yes [ ] No

10. How high is the raised roof portion of the cab over the seating positions?

    ---

11. What is the capacity in US Gallons of the proposed fuel tank? _____ Gal.

12. Does your bid include electronic tire pressure monitoring? [ ] Yes [ ] No

13. “Smart” steering wheel- what can be programmed to run through the controls?

_____
_____
_____
_____

14. Please discuss layout and BTU’s of all cab heaters, plus any additional heaters included in your bid to meet the intent of this specification section **5.12**:_____

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Does your HVAC system include fresh air intake? [ ] Yes [ ] No

15. Cold weather package, section **6.3**, additional winterization deemed necessary by manufacturer to meet intent of this specification:

_____
_____
_____
_____
_____
_____
_____
_____

16. Total square footage of compartment space provided in your bid:

_____
_____

17. Please provide details of your cab safety equipment such as the features and locations of the air bag crash system to be provided? ----------

_____
_____
_____
_____
_____
_____

18. Do you have any fall protection systems designed for use while climbing the aerial ladder? Is it included? [ ] Yes [ ] No

    If so, please describe this system:

    _____
    _____
    _____

19. Does the apparatus, as bid, meet NFPA 1901, latest edition? (If no, please explain and use separate sheet if needed)

    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____

20. Please list all sections (by number) that your bid document takes exception to this specification and why: (May use separate additional sheets if necessary, All exceptions to be noted).

    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____
    _____

Fairbanks Fire Department

2019 100’ Aerial Ladder Platform Quint Vehicle Specification

Reference Pictures: **(More available upon Request)**

Gold Leaf Cab Break/Striping

Gold Leaf Cab Break/Striping/Lettering

Reverse “Z” Striping on sides/Lettering

Current Platform

Fairbanks Fire Department

2019 100’ Aerial Ladder Platform Quint Vehicle Specification

Current Platform- Stokes Box

Current Platform- side view

Front Cab Map Box/Tray

Front Cab Map Box/Storage Tray

Fairbanks Fire Department

2019 100’ Aerial Ladder Platform Quint Vehicle Specification

Front Cab Binder Storage

Rear Cab Storage- Mid & Right

Rear Cab Storage- Full Width View

Rear Cab- Top tray of storage cabinets