



LEXINGTON

Lexington-Fayette Urban County Government

Lexington, Kentucky
Horse Capital of the World

Division of Central Purchasing

Date of Issue: January 17, 2019

INVITATION TO BID #5-2019 Mid Mount Tower Apparatus

Bid Opening Date: February 8, 2019

Bid Opening Time: 2:00 PM

Address: 200 East Main Street, 3rd Floor, Room 338, Lexington, Kentucky 40507

Type of Bid: Firm Bid

Pre Bid Meeting: Month XX, 2019

Pre Bid Time: X:XX xm

Address: XXXXXXXXXX Street

Sealed bids will be received in the office of the Division of Central Purchasing, 200 East Main Street, Lexington, Kentucky, until **2:00 PM**, prevailing local time on **2/08/2019**. Bids must be received by the above-mentioned date and time. Mailed bids should be sent to:

**Division of Central Purchasing
200 East Main Street, Room 338
Lexington, KY 40507, (859) 258-3320**

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not addressed and delivered as indicated above. **Bids that are not delivered to the Division of Central Purchasing by the stated time and date will be rejected.** All bids must be signed and have the company name and address, bid invitation number, and the name of the bid on the outside of the envelope.

Bids are to include all shipping, handling and associated fees to the point of delivery located at: Lexington, KY

Bid Security and Performance Bond Required for all bids over \$50,000.

<p>Check One: _____ Bid Specifications Met _____ Exceptions to Bid Specifications. <i>Exceptions shall be itemized and attached to bid proposal submitted.</i></p>	<p>Proposed Delivery: _____ days after acceptance of bid.</p>
<p>Procurement Card Usage—The Lexington-Fayette Urban County Government may be using Procurement Cards to purchase goods and services and also to make payments. Will you accept Procurement Cards? _____ Yes _____ No</p>	

Submitted by: _____
Firm Name

Address

City, State & Zip

Bid must be signed: _____
(original signature) **Signature of Authorized Company Representative – Title**

Representative's Name (Typed or printed)

Area Code - Phone – Extension *Fax #*

E-Mail Address

The Affidavit in this bid must be completed before your firm can be considered for award of this contract.

AFFIDAVIT

Comes the Affiant, _____, and after being first duly sworn under penalty of perjury as follows:

1. His/her name is _____ and he/she is the individual submitting the bid or is the authorized representative of _____, the entity submitting the bid (hereinafter referred to as "Bidder")
2. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the bid is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.
3. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.
4. Bidder has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.
5. Bidder has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Bidder will not violate any provision of the campaign finance laws of the Commonwealth.
6. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as "Ethics Act."
7. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Further, Affiant sayeth naught. _____

STATE OF _____

COUNTY OF _____

The foregoing instrument was subscribed, sworn to and acknowledged before me
by _____ on this the _____ day
of _____, 20__.

My Commission expires: _____

NOTARY PUBLIC, STATE AT LARGE

Please refer to Section II. Bid Conditions, Item "U" prior to completing this form.

I. GREEN PROCUREMENT

A. ENERGY

The Lexington-Fayette Urban County Government is committed to protecting our environment and being fiscally responsible to our citizens.

The Lexington-Fayette Urban County Government mandates the use of Energy Star compliant products if they are available in the marketplace (go to www.Energystar.gov). If these products are available, but not submitted in your pricing, your bid will be rejected as non-compliant.

ENERGY STAR is a government program that offers businesses and consumers energy-efficient solutions, making it easy to save money while protecting the environment for future generations.

Key Benefits

These products use 25 to 50% less energy
Reduced energy costs without compromising quality or performance
Reduced air pollution because fewer fossil fuels are burned
Significant return on investment
Extended product life and decreased maintenance

B. GREEN SEAL CERTIFIED PRODUCTS

The Lexington-Fayette Urban County Government is also committed to using other environmentally friendly products that do not negatively impact our environment. Green Seal is a non-profit organization devoted to environmental standard setting, product certification, and public education.

Go to www.Greenseal.org to find available certified products. These products will have a reduced impact on the environment and on human health. The products to be used must be pre-approved by the LFUCG prior to commencement of any work in any LFUCG facility. If a Green Seal product is not available, the LFUCG must provide a signed waiver to use an alternate product. Please provide information on the Green Seal products being used with your bid response.

C. GREEN COMMUNITY

The Lexington-Fayette Urban County Government (LFUCG) serves as a principal, along with the University of Kentucky and Fayette County Public Schools, in the Bluegrass Partnership for a Green Community. The Purchasing Team component of the Partnership collaborates on economy of scale purchasing that promotes and enhances environmental initiatives. Specifically, when applicable, each principal is interested in obtaining best value products and/or services which promote environment initiatives via solicitations and awards from the other principals.

If your company is the successful bidder on this Invitation For Bid, do you agree to extend the same product/service pricing to the other principals of the Bluegrass Partnership for a Green Community (i.e. University of Kentucky and Fayette County Schools) if requested?

Yes _____ No _____

II. Bid Conditions

- A. No bid may be withdrawn for a period of sixty (60) days after the date and time set for opening.
- B. No bid may be altered after the date and time set for opening. In the case of obvious errors, the Division of Central Purchasing may permit the withdrawal of a bid. The decision as to whether a bid may be withdrawn shall be that of the Division of Central Purchasing.
- C. Acceptance of this proposal shall be enactment of an Ordinance by the Urban County Council.
- D. The bidder agrees that the Urban County Government reserves the right to reject any and all bids for either fiscal or technical reasons, and to award each part of the bid separately or all parts to one vendor.

- E. Minor exceptions may not eliminate the bidder. The decision as to whether any exception is minor shall be entirely that of the head of the requisitioning Department or Division and the Director of the Division of Central Purchasing. The Urban County Government may waive technicalities and informalities where such waiver would best serve the interests of the Urban County Government.
- F. Manufacturer's catalogue numbers, trade names, etc., where shown herein are for descriptive purposes and are to guide the bidder in interpreting the standard of quality, design, and performance desired, and shall not be construed to exclude proposals based on furnishing other types of materials and/or services. However, any substitution or departure proposed by the bidder must be clearly noted and described; otherwise, it will be assumed that the bidder intends to supply items specifically mentioned in this Invitation for Bids.
- G. The Urban County Government may require demonstrations of the materials proposed herein prior to acceptance of this proposal.
- H. Bids must be submitted on this form and must be signed by the bidder or his authorized representative. Unsigned bids will not be considered.
- I. Bids must be submitted prior to the date and time indicated for opening. Bids submitted after this time will not be considered.
- J. All bids mailed must be marked on the face of the envelope:

"Bid on #5-2019 Mid Mount Tower Apparatus"

and addressed to: Division of Central Purchasing
 200 East Main Street, Room 338
 Lexington, Kentucky 40507

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not addressed and delivered as indicated above. Bids that are not delivered to the Division of Central Purchasing by the stated time and date will be rejected.

- K. Bidder is requested to show both unit prices and lot prices. In the event of error, the unit price shall prevail.
- L. A certified check or Bid Bond in the amount of 5 percent of the bid price must be attached hereto for bids greater than \$50,000. This check must be made payable to the Lexington-Fayette Urban County Government, and will be returned when the material and/or services specified herein have been delivered in accordance with specifications. In the event of failure to perform within the time period set forth in this bid, it is agreed the certified check may be cashed and the funds retained by the Lexington-Fayette Urban County Government as liquidated damages. Checks of unsuccessful bidders will be returned when the bid has been awarded.
- M. The delivery dates specified by bidder may be a factor in the determination of the successful bidder.
- N. Tabulations of bids received may be mailed to bidders. Bidders requesting tabulations must enclose a stamped, self-addressed envelope with the bid.
- O. The Lexington-Fayette Urban County Government is exempt from Kentucky Sales Tax and Federal Excise Tax on materials purchased from this bid invitation. Materials purchased by the bidder for construction projects are not tax exempt and are the sole responsibility of the bidder.
- P. All material furnished hereunder must be in full compliance with OSHA regulations.
- Q. If more than one bid is offered by one party, or by any person or persons representing a party, all such bids shall be rejected.
- R. Signature on the face of this bid by the Bidder or his authorized representative shall be construed as acceptance of and compliance with all terms and conditions contained herein.
- S. The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, creed, national origin, sex or age, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.

- T. The Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any county, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;*
- (2) The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;*
- (3) The contractor will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and*
- (4) The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses.*

The Act further provides:

KRS 45.610. Hiring minorities - Information required

- (1) For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.*
- (2) Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.*

KRS 45.620. Action against contractor - Hiring of minority contractor or subcontractor

- (1) If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.*
- (2) If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 to 45.640.*
- (3) The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.*

KRS 45.630 Termination of existing employee not required, when

Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.

KRS 45.640 Minimum skills

Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.

It is recommended that all of the provisions above quoted to be included as special conditions in each

contract. In the case of a contract exceeding \$250,000, the contractor is required to furnish evidence that his work-force in Kentucky is representative of the available work-force in the area from which he draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the contract.

- U. Any party, firm or individual submitting a proposal pursuant to this invitation must be in compliance with the requirements of the Lexington-Fayette Urban County Government regarding taxes and fees before they can be considered for award of this invitation and must maintain a "current" status with regard to those taxes and fees throughout the term of the contract. The contractor must be in compliance with Chapter 13 from the Code of Ordinances of the Lexington-Fayette Urban County Government. The contractor must be in compliance with Ordinance 35-2000 pursuant to contractor registration with the Division of Building Inspection. If applicable, said business must have a Fayette County business license.

Pursuant to KRS 45A.343 and KRS 45A.345, the contractor shall

- (1) Reveal any final determination of a violation by the contractor within the previous five year period pursuant to KRS Chapters 136 (corporation and utility taxes), 139 (sales and use taxes), 141 (income taxes), 337 (wages and hours), 338 (occupational safety and health of employees), 341 (unemployment and compensation) and 342 (labor and human rights) that apply to the contractor; and*
- (2) Be in continuous compliance with the above-mentioned KRS provisions that apply to the contractor for the duration of the contract.*

A contractor's failure to reveal the above or to comply with such provisions for the duration of the contract shall be grounds for cancellation of the contract and disqualification of the contractor from eligibility for future contracts for a period of two (2) years.

- V. Vendors who respond to this invitation have the right to file a notice of contention associated with the bid process or to file a notice of appeal of the recommendation made by the Director of Central Purchasing resulting from this invitation.

Notice of contention with the bid process must be filed within 3 business days of the bid/proposal opening by (1) sending a written notice, including sufficient documentation to support contention, to the Director of the Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his/her contention with the bid process. After consulting with the Commissioner of Finance the Chief Administrative Officer and reviewing the documentation and/or hearing the vendor, the Director of Central Purchasing shall promptly respond in writing findings as to the compliance with bid processes. If, based on this review, a bid process irregularity is deemed to have occurred the Director of Central Purchasing will consult with the Commissioner of Finance, the Chief Administrative Officer and the Department of Law as to the appropriate remedy.

Notice of appeal of a bid recommendation must be filed within 3 business days of the bid recommendation by (1) sending a written notice, including sufficient documentation to support appeal, to the Director, Division of Central Purchasing or (2) submitting a written request for a meeting with the Director of Central Purchasing to explain his appeal. After reviewing the documentation and/or hearing the vendor and consulting with the Commissioner of Finance and the Chief Administrative Officer, the Director of Central Purchasing shall in writing, affirm or withdraw the recommendation.

LFUCG Non-Appropriation Clause

Contractor acknowledges that the LFUCG is a governmental entity, and the contract validity is based upon the availability of public funding under the authority of its statutory mandate.

In the event that public funds are unavailable and not appropriated for the performance of the LFUCG's obligations under this contract, then this contract shall automatically expire without penalty to the LFUCG thirty (30) days after written notice to Contractor of the unavailability and non-appropriation of public funds. It is expressly agreed that the LFUCG shall not activate this non-appropriation provision for its convenience or to circumvent the requirements of this contract, but only as an emergency fiscal measure during a substantial fiscal crisis, which affects generally its governmental operations.

In the event of a change in the LFUCG's statutory authority, mandate and mandated functions, by state and federal legislative or regulatory action, which adversely affects the LFUCG's authority to continue its obligations under this contract, then this contract shall automatically terminate without penalty to the LFUCG upon written notice to Contractor of such limitation or change in the LFUCG's legal authority.

SPECIAL INSTRUCTIONS TO THE BIDDER

(DO NOT SUBMIT PERFORMANCE SECURITY WITH BID)

Performance Security: The APPARENT LOW BIDDER shall furnish, before recommendation by the Division of Central Purchasing to the Urban County Council that the BIDDER'S bid be accepted, a Performance Bond, Certified Check or Cashier's Check, payable to the Lexington-Fayette Urban County Government, in the penal sum of 100% of the price of the materials and/or services proposed in the bid.

The performance bond will not be returned to the bidder after delivery of the materials/services specified herein unless the bidder requests that the performance bond be returned.

The certified / cashier's check will be returned when the materials and/or services specified herein have been delivered.

In the event of bidder's failure to perform as specified herein, it is agreed that the monies represented by the performance bond or certified / cashier's check shall be retained by the Lexington-Fayette Urban County Government as liquidated damages.

Contracts that are less than \$50,000 will not require a 5% bid security or a performance and payment bond.

EQUAL OPPORTUNITY AGREEMENT

Standard Title VI Assurance

The Lexington Fayette-Urban County Government, (hereinafter referred to as the "Recipient") hereby agrees that as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation, it will comply with Title VI of the Civil Rights Act of 1964, 78Stat.252, 42 U.S.C. 2000d-4 (hereinafter referred to as the "Act"), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, (49 CFR, Part 21) Nondiscrimination in Federally Assisted Program of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the "Regulations") and other pertinent directives, no person in the United States shall, on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Recipient receives Federal financial assistance from the U.S. Department of Transportation, including the Federal Highway Administration, and hereby gives assurance that will promptly take any necessary measures to effectuate this agreement. This assurance is required by subsection 21.7(a) (1) of the Regulations.

The Law

- Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and sub-contractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- Section 503 of the Rehabilitation Act of 1973 states:

The Contractor will not discriminate against any employee or applicant for employment because of physical or mental disability.

- Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal contracts.
- Section 206(A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:

The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractors may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, veteran status, disability and age.

Signature

Name of Business

GENERAL PROVISIONS OF BID CONTRACT

By signing the below, bidder acknowledges that it understands and agrees with the following provisions related to its bid response and the provision of any goods or services to LFUCG upon selection by LFUCG pursuant to the bid request:

1. Bidder shall comply with all Federal, State & Local regulations concerning this type of service or good. All applicable state laws, ordinances and resolutions (including but not limited to Section 2-33 (Discrimination due to sexual orientation or gender identity) and Chapter 13 (Licenses and Regulations) of the Lexington-Fayette Urban County Government Code of Ordinances, and Resolution No. 484-17 (Minority, Women, and Veteran-Owned Businesses)) and the regulations of all authorities having jurisdiction over the project shall apply to the contract, and shall be deemed to be incorporated herein by reference.
2. Failure to submit ALL forms and information required by LFUCG may be grounds for disqualification.
3. Addenda: All addenda and IonWave Q&A, if any, must be considered by the bidder in making its response, and such addenda shall be made a part of the requirements of the bid contract. Before submitting a bid response, it is incumbent upon bidder to be informed as to whether any addenda have been issued, and the failure of the bidder to cover any such addenda may result in disqualification of that response.
4. Bid Reservations: LFUCG reserves the right to reject any or all bid responses, to award in whole or part, and to waive minor immaterial defects in proposals. LFUCG may consider any alternative proposal that meets its basic needs.
5. Liability: LFUCG is not responsible for any cost incurred by bidder in the preparation of its response.
6. Changes/Alterations: Bidder may change or withdraw a proposal at any time prior to the opening; however, no oral modifications will be allowed. Only letters, or other formal written requests for modifications or corrections of a previously submitted proposal which is addressed in the same manner as the bid response, and received by LFUCG prior to the scheduled closing time for receipt of bids, will be accepted. The bid response when opened, will then be corrected in accordance with such written request(s), provided that the written request is contained in a sealed envelope which is plainly marked "modifications of bid response".
7. Clarification of Submittal: LFUCG reserves the right to obtain clarification of any point in a bid or to obtain additional information from any bidder.
8. Bribery Clause: By his/her signature on its response, bidder certifies that no employee of his/hers, any affiliate or subcontractor, has bribed or attempted to bribe an officer or employee of the LFUCG.
9. Additional Information: While not necessary, the bidder may include any product brochures, software documentation, sample reports, or other documentation that may assist LFUCG in better understanding and evaluating the bid response. Additional documentation shall not serve as a substitute for other documentation which is required by the LFUCG to be submitted with the bid response.
10. Ambiguity, Conflict or other Errors: If a bidder discovers any ambiguity, conflict, discrepancy, omission or other error in the bid request of LFUCG, it shall immediately notify LFUCG of such error in writing and request modification or clarification of the document if allowable by the LFUCG.
11. Agreement to Bid Terms: In submitting its bid response, the bidder agrees that it has carefully examined the specifications and all provisions relating to LFUCG's bid request, including but not limited to the bid contract. By submission of its bid response, bidder states that it understands the meaning, intent and requirements of LFUCG's bid request and agrees to the same. The successful bidder shall warrant that it is familiar with and understands all provisions herein and shall warrant that it can comply with them. No additional compensation to bidder shall be authorized for services, expenses, or goods reasonably covered under these provisions that the bidder omits from its bid response.
12. Cancellation: LFUCG may unilaterally terminate the bid contract with the selected bidder(s) at any time, with or without cause, by providing at least thirty (30) days advance written notice unless a different advance written notice period is negotiated prior to contract approval. Payment for services or goods received prior to termination

shall be made by the LFUCG provided these goods or services were provided in a manner acceptable to the LFUCG. Payment for those goods and services shall not be unreasonably withheld.

13. Assignment of Contract: The selected bidder(s) shall not assign or subcontract any portion of the bid contract with LFUCG without the express written consent of LFUCG. Any purported assignment or subcontract in violation hereof shall be void. It is expressly acknowledged that LFUCG shall never be required or obligated to consent to any request for assignment or subcontract; and further that such refusal to consent can be for any or no reason, fully within the sole discretion of LFUCG.
14. No Waiver: No failure or delay by LFUCG in exercising any right, remedy, power or privilege hereunder, nor any single or partial exercise thereof, nor the exercise of any other right, remedy, power or privilege shall operate as a waiver hereof or thereof. No failure or delay by LFUCG in exercising any right, remedy, power or privilege under or in respect of this bid proposal or bid contract shall affect the rights, remedies, powers or privileges of LFUCG hereunder or shall operate as a waiver thereof.
15. Authority to do Business: Each bidder must be authorized to do business under the laws of the Commonwealth of Kentucky and must be in good standing and have full legal capacity to provide the goods or services specified in the bid proposal. Each bidder must have all necessary right and lawful authority to submit the bid response and enter into the bid contract for the full term hereof including any necessary corporate or other action authorizing the bidder to submit the bid response and enter into this bid contract. If requested, the bidder will provide LFUCG with a copy of a corporate resolution authorizing this action and/or a letter from an attorney confirming that the proposer is authorized to do business in the Commonwealth of Kentucky. All bid responses must be signed by a duly authorized officer, agent or employee of the bidder.
16. Governing Law: This bid request and bid contract shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky. In the event of any proceedings regarding this matter, the bidder agrees that the venue shall be the Fayette County Circuit Court or the U.S. District Court for the Eastern District of Kentucky, Lexington Division and that the bidder expressly consents to personal jurisdiction and venue in such Court for the limited and sole purpose of proceedings relating to these matters or any rights or obligations arising thereunder.
17. Ability to Meet Obligations: Bidder affirmatively states that there are no actions, suits or proceedings of any kind pending against bidder or, to the knowledge of the bidder, threatened against the bidder before or by any court, governmental body or agency or other tribunal or authority which would, if adversely determined, have a materially adverse effect on the authority or ability of bidder to perform its obligations under this bid response or bid contract, or which question the legality, validity or enforceability hereof or thereof.
18. Price Discrepancy: When applicable, in case of price discrepancy, unit bid price written in words will prevail followed by unit price written in numbers then total amount bid per line item.
19. Bidder understands and agrees that its employees, agents, or subcontractors are not employees of LFUCG for any purpose whatsoever. Bidder is an independent contractor at all times related to the bid response or bid contract.
20. Contractor [or Vendor or Vendor's Employees] will not appropriate or make use of the Lexington-Fayette Urban County Government (LFUCG) name or any of its trade or service marks or property (including but not limited to any logo or seal), in any promotion, endorsement, advertisement, testimonial or similar use without the prior written consent of the government. If such consent is granted LFUCG reserves the unilateral right, in its sole discretion, to immediately terminate and revoke such use for any reason whatsoever. Contractor agrees that it shall cease and desist from any unauthorized use immediately upon being notified by LFUCG.
21. If any term or provision of this bid contract shall be found to be illegal or unenforceable, the remainder of the contract shall remain in full force and such term or provision shall be deemed stricken.

Signature

Date

WORKFORCE ANALYSIS FORM

Name of Organization: _____

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African- American (Not Hispanic or Latino)		Native Hawaiian and Other Pacific Islander (Not Hispanic)		Asian (Not Hispanic or Latino)		American Indian or Alaskan Native (not Hispanic or Latino)		Two or more races (Not Hispanic or Latino)		Total	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators																	
Professionals																	
Superintendents																	
Supervisors																	
Foremen																	
Technicians																	
Protective Service																	
Para-Professionals																	
Office/Clerical																	
Skilled Craft																	
Service/Maintenance																	
Total:																	

Prepared by: _____

(Name and Title)

Date: ____/____/____

Revised 2015-Dec-15

**DIRECTOR, DIVISION OF CENTRAL PURCHASING
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
200 EAST MAIN STREET
LEXINGTON, KENTUCKY 40507**

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE
EQUAL EMPLOYMENT OPPORTUNITIES AND DBE CONTRACT PARTICIPATION**

The Lexington-Fayette Urban County Government has set a goal that not less than ten percent (10%) of the total value of this contract be subcontracted to MBE/WBE's, and set a goal that not less than three percent (3%) of the total value of this contract be subcontracted to Veteran-Owned Small Businesses. The goal for the utilization of Certified MBE/WBE's and Veteran-Owned Small Businesses as subcontractors are recommended goals. Contractors who fail to meet such goals will be expected to provide written explanations to the Director of the Division of Central Purchasing of efforts they have made to accomplish the recommended goals and the extent to which they are successful in accomplishing the recommended goals will be a consideration in the procurement process.

For assistance in locating MBE/WBE Subcontractors contact Sherita Miller at 859/258-3320 or by writing the address listed below:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street – Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

Lexington-Fayette Urban County Government

MWDBE PARTICIPATION GOALS

A. GENERAL

- 1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE), Disadvantaged (DBE) Business Enterprises and Veteran-Owned Small Businesses (VOSB) as subcontractors or suppliers in their bids.
- 2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Minority-Owned, Woman-Owned and Disadvantaged Businesses on this contract.
- 3) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) for MWDBE participation and other requirements as outlined in this section.**
- 4) The LFUCG has also established a 3% of total procurement costs as a Goal for participation for of Veteran-Owned Businesses.
- 5) **It is therefore a request of each Bidder to include in its bid, the same goal (3%) for Veteran-Owned participation and other requirements as outlined in this section.**

B. PROCEDURES

- 1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all payments submitted to Minority-Owned, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
- 2) Replacement of a Minority-Owned, Woman-Owned or Veteran-Owned subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE Substitution Form)
- 3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:
 - a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)
- 4) The LFUCG will make every effort to notify interested MWDBE and Veteran-Owned subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

C. DEFINITIONS

- 1) A Minority-Owned Business Enterprise (MBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by persons of African American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage.
- 2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by one or more women.

- 3) A Disadvantaged Business (DBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by a person(s) that are economically and socially disadvantaged.
- 4) A Veteran-Owned Small Business (VOSB) is defined as a business which is certified as being at least 51% owned, managed and controlled by a veteran and/or a service disabled veteran.
- 5) Good Faith Efforts are efforts that, given all relevant circumstances, a bidder or proposer actively and aggressively seeking to meet the goals, can reasonably be expected to make. In evaluating good faith efforts made toward achieving the goals, whether the bidder or proposer has performed the efforts outlined in the Obligations of Bidder for Good Faith Efforts outlined in this document will be considered, along with any other relevant factors.

D. OBLIGATION OF BIDDER FOR GOOD FAITH EFFORTS

- 1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for MWDBE and Veteran-Owned subcontractors/suppliers. The failure to meet the goal shall not necessarily be cause for disqualification of the bidder; however, bidders not meeting the goal are required to furnish with their bids written documentation of their Good Faith Efforts to do so.**
- 2) Award of Contract shall be conditioned upon satisfaction of the requirements set forth herein.
- 3) The Form of Proposal includes a section entitled "MWDBE Participation Form". The applicable information must be completed and submitted as outlined below.
- 4) **Failure to submit this information as requested may be cause for rejection of bid or delay in contract award.**

E. DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS

- 1) Bidders reaching the Goal are required to submit only the MWDBE Participation Form." The form must be fully completed including names and telephone number of participating MWDBE firm(s); type of work to be performed; estimated value of the contract and value expressed as a percentage of the total Lump Sum Bid Price. The form must be signed and dated, and is to be submitted with the bid.
- 2) Bidders not reaching the Goal must submit the "MWDBE Participation Form", the "Quote Summary Form" and a written statement documenting their Good Faith Effort to do so. If bid includes no MWDBE and/or Veteran participation, bidder shall enter "None" on the subcontractor / supplier form). In addition, the bidder must submit written proof of their Good Faith Efforts to meet the Participation Goal:
 - a. Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.
 - b. Included documentation of advertising in the above publications with the bidders good faith efforts package

- c. Attended LFUCG Central Purchasing Economic Inclusion Outreach event
- d. Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned businesses of subcontracting opportunities
- e. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses.
- f. Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).
- g. Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.
- h. Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs and/or Veteran-Owned businesses soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.
- i. Followed up initial solicitations by contacting MWDBEs and Veteran-Owned Businesses to determine their level of interest.
- j. Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.
- k. Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce
- l. Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.
- m. Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.
- n. Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

- o. Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal
- p. Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.
- q. Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

Note: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to review by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.



LEXINGTON

MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA
Minority Business Enterprise Liaison
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507
smiller@lexingtonky.gov
859-258-3323

OUR MISSION: The mission of the Minority Business Enterprise Program is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long term economic viability of Lexington-Fayette Urban County Government.

To that end the city council adopted and implemented Resolution 484-2017 – A Certified Minority, Women and Disadvantaged Business Enterprise ten percent (10%) minimum goal and a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and Certified Service Disabled Veteran – Owned Businesses for government contracts.

The resolution states the following definitions shall be used for the purposes of reaching these goals (a full copy is available in Central Purchasing):

Certified Disadvantaged Business Enterprise (DBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a person(s) who is socially and economically disadvantaged as define by 49 CFR subpart 26.

Certified Minority Business Enterprise (MBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by an ethnic minority (i.e. African American, Asian American/ Pacific Islander, Hispanic Islander, Native American/ Native Alaskan Indian) as defined in federal law or regulation as it may be amended from time-to-time.

Certified Women Business Enterprise (WBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a woman.

Certified Veteran-Owned Small Business (VOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

Certified Service Disabled Veteran Owned Small Business (SDVOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a disabled veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

The term “Certified” shall mean the business is appropriately certified, licensed, verified, or validated by an organization or entity recognized by the Division of Purchasing as having the appropriate credentials to make a determination as to the status of the business.

To comply with Resolution 484-2017, prime contractors and minority, women and veteran owned businesses must enroll in the new Diverse Business Management Compliance system, <https://lexingtonky.diversitycompliance.com/>

We have compiled the list below to help you locate certified MBE, WBE and DBE certified businesses. Below is a listing of contacts for LFUCG Certified MWDBEs and Veteran-Owned Small Businesses in <https://lexingtonky.ionwave.net>

Business	Contact	Email Address	Phone
LFUCG	Sherita Miller	smiller@lexingtonky.gov	859-258-3323
Commerce Lexington – Minority Business Development	Tyrone Tyra	ttyra@commercelexington.com	859-226-1625
Tri-State Minority Supplier Diversity Council	Susan Marston	smarston@tsmsdc.com	502-365-9762
Small Business Development Council	Shawn Rogers UK SBDC	shawn.rogers@uky.edu	859-257-7666
Community Ventures Corporation	Phyllis Alcorn	palcorn@cvky.org	859-231-0054
KY Transportation Cabinet (KYTC)	Melvin Bynes	Melvin.bynes2@ky.gov	502-564-3601
KYTC Pre-Qualification	Sheila Eagle	Sheila.Eagle@ky.gov	502-782-4815
Ohio River Valley Women’s Business Council (WBENC)	Sheila Mixon	smixon@orvwbc.org	513-487-6537
Kentucky MWBE Certification Program	Yvette Smith, Kentucky Finance Cabinet	Yvette.Smith@ky.gov	502-564-8099
National Women Business Owner’s Council (NWBOC)	Janet Harris-Lange	janet@nwbo.org	800-675-5066
Small Business Administration	Robert Coffey	robertcoffey@sba.gov	502-582-5971
LaVoz de Kentucky	Andres Cruz	lavozdeky@yahoo.com	859-621-2106
The Key News Journal	Patrice Muhammad	production@keynewsjournal.com	859-685-8488



LEXINGTON

LFUCG MWDBE PARTICIPATION FORM

Bid/RFP/Quote Reference # _____

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.				
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Company

Company Representative

Date

Title



LEXINGTON

LFUCG MWDBE SUBSTITUTION FORM

Bid/RFP/Quote Reference # _____

The substituted MWDBE and/or veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Company

Company Representative

Date

Title



LEXINGTON

MWDBE QUOTE SUMMARY FORM

Bid/RFP/Quote Reference # _____

The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project. Failure to submit this form may cause rejection of the bid.

Company Name	Contact Person
Address/Phone/Email	Bid Package / Bid Date

MWDBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc)	Total dollars \$\$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female	Veteran

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/
NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Company

Company Representative

Date

Title



LEXINGTON

LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. The LFUCG also has a 3% goal plan adopted by cited council to increase the participation of veteran owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDBE and Veteran contractors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

Bid/RFP/Quote # _____

Total Contract Amount Awarded to Prime Contractor for this Project _____

Project Name/ Contract #	Work Period/ From: _____ To: _____
Company Name:	Address:
Federal Tax ID:	Contact Person:

Subcontractor Vendor ID (name, address, phone, email)	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

Company

Company Representative

Date

Title

LFUCG STATEMENT OF GOOD FAITH EFFORTS

Bid/RFP/Quote # _____

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE and Veteran-Owned business enterprises on the project and can supply the appropriate documentation.

_____ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.

_____ Included documentation of advertising in the above publications with the bidders good faith efforts package

_____ Attended LFUCG Central Purchasing Economic Inclusion Outreach event

_____ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned Businesses of subcontracting opportunities

_____ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses

_____ Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).

_____ Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

_____ Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

_____ Followed up initial solicitations by contacting MWDBEs and Veteran-Owned businesses to determine their level of interest.

_____ Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

_____ Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce

_____ Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

_____ Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

_____ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

_____ Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

_____ Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

_____ Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE **and Veteran participation.**

NOTE: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to approval by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Company

Company Representative

Date

Title

*Lexington Fire Department
Specification for Two (2) Mid Mount Tower Apparatus*

INTENT OF SPECIFICATION

It shall be the intent of these specifications to cover the furnishing and delivery of two (2) complete fire apparatus equipped as hereinafter specified. These specifications cover the requirements as to the type of construction and test to which the apparatus shall conform, together with certain details as to finish, equipment and appliances with which the successful bidder shall conform. Minor details of construction and materials, which are not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features. Apparatus and loose equipment proposed by the bidder shall meet the applicable requirements of the National Fire Protection Association (NFPA) as stated in current editions at time of contract execution. Loose equipment shall be provided only as stated in the following pages.

Bids shall only be considered from companies that have an established reputation in the field of fire apparatus construction and have manufactured single source aerial apparatus for a minimum of 10 years. Further, bidder shall maintain dedicated service facilities for the repair and service of products. Evidence of such a facility shall be included in bidder proposal.

Each bidder shall furnish satisfactory evidence of their ability to construct the apparatus specified and shall state the location of the factory where the apparatus is to be built. The bidder shall also show that the company is in position to render prompt service and to furnish replacement parts for said apparatus.

Each bid shall be accompanied by a set of "Contractor's Specifications" consisting of a detailed description of the apparatus and equipment proposed and to which the apparatus furnished under contract shall conform. These specifications shall indicate size, type, model and make of all component parts and equipment. Each bidder shall provide two hard copies and one electronic copy of their complete bid proposal.

QW00-04-5910,
QW00-04-5B10

A drawing of the proposed apparatus along with turn radius analysis report (including both curb to curb and wall to wall measurements) shall be provided with each bid.

Manufacturers shall provide specifics of construction, construction methods, components and operational data with bid.

NFPA STANDARDS

This unit shall comply with the current NFPA standards in effect at the time of bid, except for fire department specifications that differ from NFPA specifications. These exceptions shall be set forth in the Statement of Exceptions and shall be indicated in the proposal as "non-NFPA".

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

QW00-02-2510

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

QW20-25-8000

The manufacturer shall have programs in place for training, proficiency testing and performance for any staff involved with certifications. An official of the company shall designate, in writing, which is qualified to witness and certify test results.

*Lexington Fire Department
Specification for Two (2) Mid Mount Tower Apparatus*

PROJECT FUNDING

QW00-03-230A

Once the bid is submitted and opened at a time, date and location provided by the Lexington Fayette Urban County Government, the bid may not be withdrawn and will stand for ninety (90) calendar days.

Fifty percent (50%) of bid price will be issued upon completion of the chassis. Final payment will be issued upon apparatus delivery and satisfactory inspection by the Division of Fire. A percentage of discount will be included in bid price for chassis pre-pay.

Bidders shall provide an option for 100% pre-payment for the apparatus.

DELIVERY

QW00-04-8463

The delivery of the apparatus will remain the responsibility of the manufacturer. The apparatus shall be delivered under its own power. Rail or freight delivery is not acceptable.

DELIVERY SCHEDULE

The apparatus shall be delivered to the Lexington Fire Department within 300 days of the issue date of the Purchase Order or the bidder shall be penalized \$500 per day for each day over the number of specified days in the bid the apparatus is not delivered.

QW00-04-5710
QW00-04-6810

ACCEPTANCE TEST

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

QW00-05-4000

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

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

C) The apparatus, fully loaded, shall be capable of obtaining a speed of 60 mph on a level concrete highway with the engine not exceeding its governed rpm (full load).

D) The apparatus shall be able to maintain a speed of 20 mph on any grade up to and including 6%.

E) The apparatus shall be tested and approved in accordance with NFPA standard practices and Federal Motor Vehicle Safety Standards (FMVSS).

The manufacturer shall provide a complete demonstration of the fire fighting systems during the final

*Lexington Fire Department
Specification for Two (2) Mid Mount Tower Apparatus*

inspection of the completed apparatus. Final acceptance of apparatus is subject to passing all required third party tests.

FAILURE TO MEET TEST

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

LIABILITY

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

EXCEPTIONS TO SPECIFICATION REQUIREMENTS

All exceptions shall be stated no matter how seemingly minor. Any exceptions not taken shall be assumed by the purchaser to be included in the proposal, regardless of the cost to the bidder.

Bidders shall include document entitled "EXCEPTIONS TO SPECIFICATIONS" that will reference the page number and subheading for ALL exceptions to these specifications. Exceptions will be allowed if they are equal to, or superior to that specified and provided they are listed and fully explained. The decision as to whether any exception is approved as being equivalent shall be entirely that of the Chief of the Division of Fire.

PROPOSALS TAKING TOTAL EXCEPTION TO THESE SPECIFICATIONS SHALL NOT BE ACCEPTABLE.

Bidders shall submit a detailed proposal. Bid proposals shall be submitted in the same sequence as specifications for ease of evaluation, comparison and checking of compliance. A letter only, even though written on a company letterhead, shall not be sufficient. **An exception to this requirement shall not be tolerated.**

Any bid indicating that the manufacturer's proposal shall supersede these specifications will be immediately rejected.

*Lexington Fire Department
Specification for Two (2) Mid Mount Tower Apparatus*

SINGLE SOURCE MANUFACTURER

QW00-04-0430

Bids shall only be accepted from a single source apparatus manufacturer. The definition of single source is a manufacturer that designs and manufactures their products using an integrated approach, including the chassis, cab, body and aerial device being engineered and assembled on the bidder's premises. The warranties relative to the chassis, body and aerial design (excluding component warranties such as engine, transmission, axles, etc.) must be from a single source manufacturer and not split between manufacturers (i.e. body, chassis, and aerial). The bidder shall provide evidence that they comply with this requirement.

BID BOND

QW00-04-6210

All bidders shall provide a bid bond as security for the bid in the form of a 5% bid bond to accompany their bid. This bid bond shall be issued by a Surety Company who is listed on the U.S. Treasury Departments list of acceptable sureties as published in Department Circular 570. The bid bond shall be issued by an authorized representative of the Surety Company and shall be accompanied by a certified power of attorney dated on or before the date of bid. The bid bond shall include language, which assures that the bidder/principal shall give a bond or bonds as may be specified in the bidding or contract documents, with good and sufficient surety for the faithful performance of the contract, including the two (2) year limited warranty, and for the prompt payment of labor and material furnished in the prosecution of the contract.

Notwithstanding any document or assertion to the contrary, any surety bond related to the sale of a vehicle shall apply only to the two (2) year limited warranty for such vehicle. Any surety bond related to the sale of a vehicle shall not apply to any other warranties that are included within this bid (OEM or otherwise) or to the warranties (if any) of any third party of any part, component, attachment or accessory that is incorporated into or attached to the vehicle. In the event of any contradiction or inconsistency between this provision and any other document or assertion, this provision shall prevail.

PERFORMANCE BOND

QW00-04-6410

The successful bidder shall provide, within thirty (30) days after award of contract, and along with a signed copy of the contract, a performance bond, which guarantees performance of all terms and conditions of the contract and warranty agreement. The performance bond will specifically cover the performance of the contract according to its terms and conditions, as well as payment of all related bills and encumbrances. This performance bond shall be issued by a surety company who is listed by the U.S. Treasury Department's list of approved sureties, as published in Circular 570, as of the bid date. The performance bond shall be issued in an amount equal to 100% of the contract amount and shall be dated concurrent to, or subsequent to, the date of the contract.

AERIAL DEVICE INSPECTION CERTIFICATE

QW00-05-320U

A third party inspection certificate for the aerial device shall be furnished upon delivery of the aerial device. The certificate shall be Underwriters Laboratories Inc. Type 1, or other equivalent independent third-party, approved by the fire department, and shall indicate that the aerial device has been inspected on the production line and after final assembly.

*Lexington Fire Department
Specification for Two (2) Mid Mount Tower Apparatus*

The following tests shall be conducted:

- Magnetic particle inspection shall be conducted on every structural weld to assure the integrity of the weldments and to detect any flaws or weaknesses. Magnets shall be placed on each side of the weld while iron powder is placed on the weld itself. The powder shall detect any crack that may exist. This test shall conform to ASTM E709 and be performed prior to assembly of the aerial device.
- With aluminum structural components, visual inspection shall be performed on aluminum surfaces (non-magnetic). A liquid penetrant test shall be performed on any suspected defective area. This test shall conform to ASTM E165 and be performed prior to assembly of the aerial device.
- Ultrasonic inspection shall be used to detect any flaws in pins, bolts and other critical mounting components.

Functional tests, load tests, stability tests, and visual structural examinations shall be performed. These tests shall determine any unusual deflection, noise, vibration, or instability characteristics of the unit (no exception).

APPROVAL DRAWING

QW-00-04-7000

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

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

FINAL DRAWING

There shall be a revised drawing of the truck with all the changes made during production provided at pickup.

PRE-CONSTRUCTION AND INSPECTION TRIPS

QW00-04-813Z

The bidder shall provide three (3) factory inspection trips. The inspection trip(s) shall be scheduled at times mutually agreed upon between the manufacturer's representative and the customer, typically pre-construction, post paint and final inspection. All costs such as travel, lodging and meals shall be the responsibility of the bidder. Transportation is to be commercial air from Lexington, Kentucky, (locale acceptable to the fire department) to the nearest commercial airport and ground transportation from the time of arrival until departure.

Pre-construction

The bidder shall plan on four (4) LFD personnel traveling for the pre-construction conference. There should be adequate time provided to meet with engineers, project managers and conduct facility tours.

Mid-Point

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Four (4) LFD members will travel for the in-process inspection. Purchaser requires that this inspection occur when at least one of the units has the body and cab mounted to the chassis.

QW00-04-8200

Final

Four (4) LFD members will travel for the final inspection. Adequate time shall be provided for demonstration of firefighting systems and designated electrical options as specified.

MANUALS, CHASSIS AND AERIAL OPERATION

QW98-50-502C

Chassis operation manuals shall be provided. There shall be two (2) electronic copies of this material that shall contain the following:

- Descriptions, specifications and ratings of the chassis and aerial device
- Operating instructions for the chassis and any major components including auxiliary systems
- Instructions regarding the frequency and procedures recommended for maintenance
- Material Safety Data Sheets

MANUALS, FIRE APPARATUS PARTS

Custom parts manuals for the complete fire apparatus shall be provided. The manual shall be specifically written for the chassis and body model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies.

There shall be **two (2) electronic copies** of this material that shall contain at least the following:

- Job number
- Table of contents
- Part numbers with full descriptions
- Parts section sorted in functional groups reflecting a major system, component, or assembly
- Parts section sorted in Alphabetical order
- Third party part numbers cross reference
- Instructions on how to locate a part

MANUALS, CHASSIS SERVICE

QW98-50-503P

Chassis service manuals containing parts and service information on major components shall be provided with the completed unit. There shall be **two (2) electronic copies and a paper copy** of this material.

The manual shall be specifically written for the chassis model being purchased. It shall not be a generic manual for a multitude of different chassis and bodies. Additional electronic copies and paper documents, as provided by other equipment suppliers, shall also be included.

“As built” wiring diagrams specifically prepared for the apparatus shall be provided, including harness drawings for all wiring harnesses used on the chassis, body, and aerial, as well as all truck input and output programming sheets. Truck specific electrical compartment and instrument layouts for the chassis, body, and aerial shall be included.

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There shall be a detailed diagram of the air brake system included in the manuals. The diagram shall include airlines and parts that are located within the system.

The manuals shall contain at least the following:

- Job number
- Table of contents
- Troubleshooting
- Front Axle/Suspension
- Brakes
- Engine operations & maintenance instructions
- Tires
- Wheels
- Cab
- AC and DC Electrical
- Electrical diagrams including charts illustrating the individual wire color, number code, and function.
- Air Systems
- Plumbing
- Lubrication charts
- Operations & maintenance instructions for items on the vehicle, not including the bidder literature
- Certificates of independent test results
- Warranty documents from bidder or any component manufacturer
- Manufacturer's record of construction details and engine power curve
- Vehicle final alignment report
- Vendor literature provided by the manufacturer that arrives with the purchased component

MAINTENANCE SOFTWARE

Software required to diagnose, maintain, or program settings for the apparatus or any of its components or systems, including the aerial, shall be provided by the bidder. **A list of such software and their operating system requirements shall be provided with the bid.**

APPARATUS AND RELATED COMPONENT TRAINING

Training shall be provided by the manufacturer for three consecutive days at a designated time and location determined by the fire department on the operation of the apparatus and associated components. Target audience to include service and operational personnel. The fire department shall be allowed to record video of the training for internal use. ~~A power point or video shall accompany the apparatus for training at the time of delivery.~~

EXCEPTION

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ADDITIONAL MECHANIC TRAINING

One (1) extra day of factory level or equivalent repair and maintenance training on fire apparatus and or apparatus components will be provide to the Lexington KY Division of Fire Mechanical Bureau's fire apparatus mechanics in Lexington, KY. It may be scheduled consecutive to the standard three (3) day familiarization of the aerial device.

EXCEPTION

AFTERMARKET SUPPORT

Service Parts Internet Site

The service parts information included in the parts manual shall also available to fire department maintenance personnel on a website. The website shall offer additional functions and features not contained in the manual, such as digital photographs and line drawings of select items. The website shall feature electronic search tools to assist in locating parts quickly.

Dealer Website

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

This website shall also be accessible to the end user through the guest login. The website shall provide the following to the designated individuals:

- Ability to access truck detail information on the major components of the vehicle, warranty information, available vehicle photographs, vehicle drawings, sales options, applicable vehicle software downloads, etc.
- Parts look-up capability, with the aid of digital photographs, part drawings assembly drawings.
- Ability to electronically submit warranty claims directly to the factory for reimbursement.
- Accessibility to multiple dealer reports that allow the dealership to maintain communication with the customer on the status of orders, claims, and phone contacts.
- Access to all currently published Operation and Maintenance and Service publications.
- Access to manufacturer Service Bulletins and Work Instructions containing information on current service topics and recommendations provided.
- Access to upcoming training classes offered by the manufacturer.
- Access to interactive electronic learning modules (Operators Guides) covering the operation of major vehicle components.
- Access to customer service articles, corporate news, quarterly newsletters, and key contacts.

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SERVICE CENTER

In order to maintain this complex piece of apparatus, the experience and reliability of the factory authorized service center is of major concern to purchaser. The service facility must comply with the following criteria in order to be considered:

Must have a minimum of five (5) years experience repairing and maintaining fire apparatus of the make and type of apparatus being bid.

Must have adequate indoor heated facilities and factory-trained technicians to perform repairs, including power train, chassis, generator, aerial and controls.

Must have fully equipped mobile shop vehicles available for warranty work in Lexington, KY.

The bidder shall submit the location and recent photos of the service center and mobile service units along with the bid. Purchaser reserves the right to visit and inspect the service center prior to awarding bid.

The contractor is required to provide all warranty service at the Lexington fire vehicle maintenance facility whenever major shop work is not involved. For warranty service involving transportation to the shop, the apparatus shall be picked up in Lexington, KY and returned from the contractor's facility by their personnel.

While under warranty, if towing or flat bedding of the apparatus to the repair facility is required, it shall be the responsibility of the bidder to provide such service at their cost.

The contractor agrees to keep the apparatus in a secure, indoor heated area at all times while in their possession. It shall be understood that the contractor is responsible for the apparatus and all articles of equipment from the time the apparatus is picked up until it is returned to Lexington, KY.

The contractor shall provide proof of insurance coverage of the apparatus to LFD before the apparatus is transported.

GENERAL CONSTRUCTION, QUALITY AND WORKMANSHIP

QW00-05-2000

The design and construction of the apparatus shall embody standard automotive heavy vehicle engineering practices. The apparatus shall be designed, engineered and constructed with due consideration for the severe nature of the fire service. All parts of the apparatus shall be installed in accordance with the OEM specifications.

The workmanship shall be of the highest quality in its respective field. Special consideration shall be given to the following points: Accessibility of the various units that require periodic maintenance, ease of operation (including both PTO driven accessories and driving) and symmetrical proportions. Construction shall be rugged and ample safety factors shall be provided to carry the loads specified and to meet both on and off road requirements and speed conditions as set forth under "Performance Tests and Requirements".

Distribution of load between the front and rear axles shall be engineered so that all specified equipment and full complement of personnel shall be carried without damage to the apparatus. Weight balance and distribution shall be in accordance with the recommendations of the National Fire Protection Association

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and current standard automotive practices.

Welding shall not be employed in the assembly of the apparatus in a manner that shall prevent the ready removal of any component part for service or repair. All steel welding shall follow American Welding Society recommendations for structural steel welding. All aluminum welding shall be done to American Welding Society and ANSI recommendations for structural welding of aluminum.

All welding personnel that shall be utilized in the fabrication and construction of structural components of the apparatus chassis, body and aerial device shall hold a valid certificate from the AWS - American Welding Society. The manufacturer is required to have an American Welding Society certified welding inspector in plant during working hours to monitor weld quality.

The apparatus shall be designed to conform to applicable ANSI and NFPA 1901 standards. The following design criteria shall be applicable to this specification to the extent specified herein:

- American Society for Testing Materials (ASTM) - A-36, Specification for Structural Steel
- Society of Automotive Engineers, Inc. (SAE) - SAE Handbook
- American Welding Society (AWS) - AWS014.4-77 Classification and Application of Welded Joints for Machinery and Equipment
- American Society for Non-Destructive Testing (ASNT)

All sensitive components shall be protected against adverse weather conditions. Any exposed metal surface which is not painted or otherwise coated shall have a bright finish. Corrosion protection shall be provided between any dissimilar metals joined in the construction of this apparatus.

VEHICLE PERFORMANCE ANALYSIS

QW-00-05-0420

A performance analysis report shall be run on the vehicle, as ordered, using computer software to determine top speed, gradeability, optimum shift points and acceleration on various grades. The report shall be delivered with the completed vehicle, but shall be available prior to engineering of the vehicle.

SCAAN Analysis of the proposed vehicle will be supplied by the bidder and available during the pre-construction conference.

CHASSIS

QW10-00-0740

Chassis shall be a new, heavy duty, custom fire apparatus design built expressly for the fire service. All standard components that have not been specified shall be provided. Chassis shall be designed, engineered and built by the bidder and be the manufacturer's first line custom chassis.

The chassis shall be suitable for heavy duty service with all components having adequate strength and capacity for the intended load to be sustained and the type of severe service required.

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WHEELBASE

QW10-00-9910

The wheelbase shall be no greater than 250 inches.

HEIGHT

QW00-05-1010

The overall height of the completed apparatus shall be no greater than 130 inches.

LENGTH

QW00-05-1110

The length of the completed apparatus shall be no greater than 567 inches.

SEATING CAPACITY

QW10-00-9920

The safe seating capacity of the cab for properly belted passengers shall be: Five (5)

APPROACH - DEPARTURE ANGLES

QW10-00-9935

An angle of approach and an angle of departure of at least 8 degrees shall be maintained at the front and the rear of the vehicle when it is loaded to the estimated in-service weight, as defined by NFPA 1901 current edition.

GROSS VEHICLE WEIGHT

QW10-00-9940

Front Vehicle Weight Rating shall be: [22,800#]

Rear Vehicle Weight Rating shall be: [57,200#]

Gross Vehicle Weight Rating shall be: [80,000#]

QW00-05-0210

The manufacturer shall be responsible for proper weight distribution upon the chassis and axles.

The apparatus when loaded shall have not less than 25% nor more than 45% of the weight on the front axle and not less than 55% nor more than 75% on the rear axle. A certified weight certificate showing weights on the front axle, rear axle and total weight for the completed apparatus with the fuel tanks full, but without personnel, equipment and hose shall be provided at the time of delivery.

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FRAME

QW10-10-1350

The frame is to be specifically designed and produced for the vehicle as specified. Each hole made in the frame rails must be used for a specific chassis component and any holes for non-required options are not acceptable.

The chassis frame shall be built using two variable section steel channels and a minimum of six (6) formed steel cross members. The frame rails shall be 120,000 psi heat treated steel alloy with tapering measurements and continuous top and bottom flanges. The cross members shall be of heavy duty, fabricated, all-welded design, made out of a minimum of 50,000 psi material.

A full length "C" straight channel frame inner liner with top and bottom flanges shall be provided.

At the narrow rail section, each rail shall have a combined minimum section modulus of 39.44 and a combined minimum resisting bending moment of 4,413,538 inch pounds.

At the deep rail section, each rail shall have a maximum section modulus of 46.26 at the largest cross section, which shall provide a resisting bending moment of 5,551,200 inch pounds.

The frame rails and cross members shall be assembled using 5/8" flange head, grade eight bolts and "Spiralock®" flanged nuts. Spiralock® nuts shall be used exclusively in the frame assembly for mounting spring hangers, steering gear, engine, transmission, etc. to maintain constant torque tension and prevent loosening from vibration. Spiralock® nuts shall provide even thread load over the bolt, increasing fatigue strength and clamping torque.

Corrosion protection for the frame rails, frame liner, and cross members shall meet 1000 hours of salt spray testing per ASTM B117 test procedure.

BUMPER

QW10-11-0015

A heavy duty 10.25" high 1/4" thick painted steel bumper shall be mounted to the front of the chassis. It shall be fabricated in the factory of the bidder. Bumper shall be channel shaped with 2-1/4" flanges. It shall be painted to match the lower cab color.

As part of the bumper extension, a second 1/4" thick by 9.44" high formed channel with 2" flanges shall be provided directly behind the full width of the bumper. The bumper extension support shall be of channel (minimum 9-7/16" x 3" x 3/8") construction, bolted to the chassis frame. A 3/16" aluminum tread plate gravel pan (deck) contoured to fit just below the front face of the cab and just below the upper bumper flange shall be provided. Sides (between bumper and cab corners) of the deck shall be boxed in and tapered up to meet bottom of front cab face. Pan shall not be fastened to the top flange of the bumper.

LINE-X EDGE

QW10-11-0095

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Black LINE-X shall be applied to the top flange of the bumper and shall terminate 1" down on the front and sides of the extension.

18" BUMPER EXTENSION

QW10-12-001A

A bumper extension shall be installed at the front of the cab. The front of the bumper shall be approximately 18" from the front face of the cab. A gravel pan made of 3/16" aluminum tread plate shall be installed between the front bumper and the cab. The bumper extension shall be designed and constructed so that the apparatus can be pulled by the extension.

LIFTABLE AND TOWABLE BUMPER EXTENSION

QW10-12-00A0

The bumper extension shall be designed and constructed so that the apparatus can be lifted and towed by the extension.

BUMPER PREPPED FOR Q2B SIREN

QW10-12-153P

The center of the bumper shall be prepared to accommodate a surface-mounted Federal Q2B siren. When installed, the Q2B vanes shall stick out in front of the bumper.

FRONT TOW EYES

QW10-20-0550

Two (2) chrome plated "cut plate" type tow eyes shall be furnished. They shall be installed through the top of the aluminum tread plate "gravel" pan, directly behind bumper, and securely attached to the bumper extension frame. The eyes shall be fabricated of 1" thick steel plate with a 3" diameter opening.

REAR TOW EYES

QW10-22-0500

Two (2) rear tow eyes, bolted to the frame rails, one (1) each side shall be provided. The eyes shall be fabricated of 1" chrome plated, heavy duty steel plate, with a 3" diameter opening designed so that stress will be applied to each chassis frame rail, when utilized.

STEERING

QW10-25-0100

A heavy duty 18,000 lb. capacity power steering system shall be provided. The hydraulic pump shall be engine gear driven. The steering gear "box", or fixture that the gear is mounted to, shall be fabricated in the factory of the bidder. It shall be a welded assembly constructed of 3/8" formed steel with a 3/4" face

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plate. Vertical gussets shall be provided between the face plate and the frame mounting plate to insure against frame flex while the vehicle is stationary.

POWER STEERING COOLER

QW10-25-1300

A Hayden 1215 power steering cooler, or equivalent, shall be provided in addition to the power steering reservoir.

CHASSIS ALIGNMENT

QW10-25-2000

The chassis frame rails shall be cross checked for length and square. Front and rear axles shall be laser aligned. The front axle shall be aligned at the manufacturer's facility.

AIR PIPING

QW10-28-0200

The service brake system shall be full air type. The system is to meet or exceed current FMVSS-121 requirements. Other components or accessories shall be as follows:

Pressure protection valve

Quick build up system

Engine mounted, gear driven air compressor

Bendix Model E-6 dual circuit brake treadle valve

Two (2) air pressure gauges on cab dash with indicator light and buzzer

Air reservoirs with capacity to meet FMVSS-121

The Bendix SR-7 valve, in conjunction with the double check valve, shall enable modulation of the spring brakes in the event of a service brake air system failure to allow the vehicle to be stopped.

Brake piping shall consist of SAE approved, DOT rated "Synflex" reinforced colored nylon tubing. The lines shall be wrapped in a heat protective loom where necessary in the chassis. Braided hoses shall provide flexibility between axle and frame connections. Brake air lines shall be color-coded. Air inlet to air brake compressor shall be from the engine intake manifold, i.e. after transition through the engine air cleaner. A stainless braided Teflon hose and/or copper tubing shall be provided from the compressor to the air dryer. Fittings shall be brass.

The parking brake system is to be the spring set type operated by control valve on driver's console. A brake indicator light shall also be provided.

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AIR LINES

QW10-28-0290

All air lines used in the chassis air brake system shall utilize compression fittings (no exception).

MAIN AIR SYSTEM DRAIN VALVE(S)

QW10-28-0410

The drain valve(s) on the main air system reservoirs shall be cable controlled. The pull cable shall be extended to the side of the truck with a loop provided at its end. It shall be labeled: Drain Daily.

WET TANK

QW10-28-0600

A 1250 cubic inch wet air tank shall be provided with the air system.

A cable controlled drain valve shall be provided on the wet tank. The pull cable shall be extended to the side of the truck with a loop provided at its end. It shall be labeled: Drain Daily.

QW10-28-0610

ADDITIONAL AIR RESERVOIR

QW10-28-2800

One (1) additional 1250 cubic inch air reservoir shall be provided and installed to increase the capacity of the air system. The extra reservoir shall be isolated and be plumbed with an 85 PSI pressure protection valve on the reservoir supply side.

OFFICER'S EMERGENCY BRAKE CONTROL

QW10-28-3120

An additional emergency brake control shall be provided on the right hand side of the cab dash in easy reach of the officer. Control shall actuate the rear axle spring brakes only. In addition, the control shall disable the driver's accelerator pedal and shift the transmission into neutral. Brake control shall be a heavy duty toggle type electrical switch equipped with a spring loaded safety cover to prevent accidental brake engagement. Cover shall be red in color. Control switch shall have an identification label and a warning that it is "For Emergency Use Only".

AIR DRYER

QW10-28-3820

A Meritor WABCO 1200 System Saver air dryer with spin-on coalescing filter cartridge shall be installed in the air brake system. It shall have a minimum capacity of 30 cfm air flow. Dryer shall be equipped with an integral, automatic, 12 volt heated moisture ejector which is thermostatically controlled. System shall include a pressure controlled check valve installed between the wet tank and the secondary air reservoir.

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AUXILLIARY AIR INLET

QW10-28-56SW

An auxiliary air inlet with a male ~~type "A" coupling~~ shall be installed towards the front of the driver's side step well. The auxiliary air inlet shall be plumbed to maintain the chassis air pressure while the engine is not running. A check valve shall be provided to prevent reverse flow of air, and the inlet shall discharge into the "wet" tank of the brake system.

~~A mating female Type "A" coupling shall also be provided with the loose equipment.~~

EXCEPTION--NPT PLUG

AUXILIARY AIR OUTLET

QW10-28-48SW

There shall be a 1/4" NPT female air outlet mounted towards the front of the driver's side step well. A 1/4 turn shutoff valve shall be located adjacent to the outlet. The outlet shall be connected to the apparatus air reservoir tank.

~~The outlet shall be plumbed with a female type "A" coupling. A mating male Type "A" coupling shall also be provided with the loose equipment.~~

EXCEPTION--NPT

FRONT AXLE

QW11-00-501A

A Dana D2200 front axle with a 22,800 pound rating shall be provided. It shall include composite low-friction bushings with diagonal grooves to better distribute lube, camber settings of +1/4 degree for both left and right sides to help improve tire life and a large diameter, heat treated kingpin with a lube retaining seal.

FRONT AXLE OIL SEALS

QW11-00-9500

The front axle shall be equipped with oil type seals with viewing windows.

DISC BRAKES

QW11-00-501A

The front axle shall be provided with Meritor #EX225H air disc brakes with internal automatic adjustment, sealed synchronized twin pistons and robust sealing of slide pins for environmental protection. The #EX225H air disc brakes shall have 17" rotors and a fully sealed lever mechanism with variable mechanical ratio. A visual indicator of brake wear shall also be provided.

FRONT SEMI-ELLIPTICAL SPRING SUSPENSION, 4" X 52"

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The front suspension shall be semi-elliptical 4" x 52" constant rate type springs with a military wrapped eye. The correct material, spring length, width, thickness and number shall be provided to match the leaf spring rating with that of the gross axle weight rating of the vehicle.

SHOCK ABSORBERS

Gabriel heavy-duty telescoping shock absorbers shall also be provided on the front axle.

AUXILIARY AIR APPLIED FRONT AXLE PARKING BRAKE

QW11-00-9000

An auxiliary air applied front axle parking brake shall be supplied with a separate control switch and properly labeled indicator light in the cab. This front parking brake will only be able to be activated when the parking brake for the rear axle is set.

REAR AXLE

QW11-10-507T

The rear tandem drive axle shall be a Dana model D/R60-190 with a capacity of 60,000 pounds at the hub. Each rear axle shall include Bendix 16 1/2" x 7" S-Cam brakes with dust shields and automatic slack adjusters. Stroke indicators shall be incorporated to provide a visual indicator of brake wear.

An inter-axle differential control switch shall be provided on the cab dash, easily accessible from the driver's seating position.

All axles shall be purchased complete from and certified by the axle manufacturer for the specific application. Brake chamber brand and size shall be determined by the axle manufacturer.

All the axle applications must be certified by the axle manufacturer.

QW11-10-9910

REAR AXLE RATIO

QW11-10-9998

The rear axle ratio shall be determined at the time of order.

ANTI-LOCK BRAKING SYSTEM (ABS)

QW11-20-2500

The vehicle shall be equipped with a WABCO 6S6M anti-lock braking system (ABS). The ABS shall provide six (6) channel anti-lock-up braking control on the (2) front and (4) rear wheels. The system shall employ a digital electronics system with microprocessor controls divided into two (2) diagonal circuits. In the event of one circuit malfunction the second circuit shall operate unaffected. Each wheel shall be constantly monitored by the system when the vehicle is in motion. When any wheel begins to lock-up during braking, a signal shall be transmitted to the processor from the wheel sensor. The control unit shall

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instantly reduce the braking force applied to the wheel and immediately re-apply braking force so that the wheel rapidly slows without locking. The system shall control all wheels simultaneously to provide maximum vehicle braking in a relatively straight line.

An ABS warning light shall be installed in the warning light panel of the driver's dash.

The ABS system shall automatically disengage the auxiliary braking system whenever the anti-lock braking mode is active.

INTER-AXLE DIFFERENTIAL LOCK

QW11-20-4000

The rear tandem axle set shall be equipped with an air actuated primary traction device that allows for speed differences between the forward and rear tandem axles while providing equal pulling power from each axle. When disengaged, one wheel set of the forward drive axle and the opposite side wheel set of the rear drive axle shall operate in drive action to minimize wear on drive components. When the IAD lock is engaged, both wheel sets of each tandem axle provides drive action and does so until one side encounters slip or the vehicle is turning, thereby maximizing traction without diminishing turn radius.

A dash mounted locking rocker switch shall engage and disengage the IAD lock. While the IAD lock may be engaged or disengaged at rest or at road speed, it should not be engaged whenever any drive wheel is slipping.

It is understood that the IAD should be unlocked for normal dry road condition operation to avoid premature ring gear, clutch and tire wear.

VEHICLE STABILITY COMPLIANCE – ELECTRONIC CONTROL

QW11-20-2760

In compliance with NFPA 1901, current edition standard 4.13.1, the vehicle, as specified, shall be equipped with a Meritor-WABCO electronic Roll Stability Control system that shall utilize a centrally mounted pitch and yaw sensor and steering shaft position sensor interacting with the chassis' ABS traction control, auxiliary braking system and the engine ECM to minimize the vehicle's potential for rollover in a turning at speed maneuver.

AUTOMATIC TRACTION CONTROL WITH DEEP SNOW AND MUD SWITCH

QW11-20-2795

Automatic Traction Control, working in concert with the ABS system, shall be provided which shall reduce wheel slip on acceleration on wet or slippery road conditions. A light shall illuminate on the driver's dash when the drive wheels slip during acceleration.

A deep snow and mud option switch shall be provided in addition to the ATC option. This function increases available traction on extra soft surfaces like snow, mud or gravel by slightly increasing the permissible wheel spin.

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REAR SUSPENSION, HENDRICKSON ULTIMAXX, TANDEM - 58,000#

QW11-30-7800

The rear suspension shall be a Hendrickson Ultimxxx rated for a minimum of 58,000 pounds.

FRONT TIRES

QW12-18-0120

The two (2) front tires shall be Continental 425/65R22.5, HTC1, load range "L", with a nominal rating of 11,400 pounds at a top speed of 68 mph.

REAR TIRES

QW12-19-0070

The eight (8) rear tires shall be Continental 315/80R22.5, HDR2, load range "L", with a nominal rating of 8,270 pounds at a top speed of 75 mph.

WHEELS

QW12-50-1500

Wheels shall be Alcoa polished aluminum disc type and hub piloted. Chrome plated nut covers shall be furnished, and stainless steel "Baby Moon" type hub caps shall be provided on the front axle. Stainless steel "High Hat" type hub caps shall be provided on the rear axle(s).

QW12-80-01C0
QW12-90-0200

TIRE PRESSURE INDICATORS

Tires shall have non-pressure indicators installed for shipment.

QW12-90-1020

Accu-Pressure Heavy Duty Safety Caps shall be provided and shipped loose. This valve stem inflation pressure sensitive monitor shall provide a visual color indication of when the tire pressure is below the manufacturers recommended level. The chrome safety cap shall show green when the tire is properly inflated and red once the tire becomes under inflated.

All inner wheels shall be equipped with a valve stem extension that shall allow the inner wheel to be filled without removing the outer wheel.

TIRE BALANCE

QW12-90-1210

EQUAL Tire Performance Balancing Compound shall be inserted into the front tires to balance and maintain a vibration-free rotation.

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ENGINE

QW13-00-5320

The chassis shall be powered by an EPA17/OBD17 certified and compliant Cummins X12 diesel engine, as described below:

Model	X12
Number of Cylinders	Six
Bore and Stroke	5.2 x 5.67 in
Displacement Liter (Cu. In.)	11.8 (720)
Rated BHP	500 @ 1800 RPM
Torque	1695 ft.lb. @ 1000 RPM
Governed RPM	2000
Oil Capacity / Type	11.5 gallons / SAE CK-4
Fuel Requirement	Ultra low sulfur diesel (15 ppm max.)

Standard equipment on the engine shall include the following:

- Selective Catalytic Reduction (SCR) after treatment
- Cooled Exhaust Gas Recirculation system
- Fan – 32”, 11 blade
- Charge air cooling
- High pressure, common rail fuel system
- Fuel filter with check valve and water separator
- Fuel strainer
- Governor – electronic, interact system
- Injectors – electronically controlled full authority injection
- Lube oil cooler – integral
- Lube oil filter – full flow
- Turbocharger – variable geometry type
- Air compressor – Wabco 26.0 CFM

The engine exhaust system shall be a horizontal design constructed from heavy-duty truck components. Flexible couplings shall be utilized to absorb the torque and vibration of the engine. The outlet shall be directed to the forward side of the rear wheels, exiting the right side, with a straight tip. A heat-absorbing sleeve shall be used on the exhaust pipe in the engine compartment area to reduce stored heat, providing protection for the alternator, and also to protect hands when checking or adding oil in the engine compartment.

ENGINE AND CHARGE AIR COOLING SYSTEMS

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A serpentine core type radiator with continuous louvered copper fin design shall be provided. Radiator shall be fitted with formed steel side frames. The top tank shall have a built-in de-aeration system. A drain shall be located at the lowest point.

The engine charge air heat exchanger shall be located directly in front of the radiator and be bolted to its side rails. It shall be all aluminum-brazed construction. Air cooler shall be cross flow design with cast aluminum side tanks, horizontal inlet and outlet at top and aluminum louvered serpentine external air fins. Plastic tanks shall not be acceptable (no exceptions). Cooler tubers shall also be constructed of aluminum and have internal fins that eliminate laminar airflow.

The charge air cooler and the radiator shall be produced by the same manufacturer as a single assembly to provide continuity throughout the cooling system. This shall ensure a certified "balanced" package for the chassis engine air and fluid cooling systems.

The radiator and charge air cooler shall be mounted to the chassis stub. Fabricated mounting bracket for the fans ring shall be attached to the front of the engine in a manner so that it "floats" with the engine and increases the fan's efficiency by tightening the tip clearance. This mounting design eliminates engine fan and radiator shroud contact due to engine torque movement and promotes more efficient airflow. The radiator and charge air cooler shall be held in place at the bottom by two (2) large bolts equipped with anti-stress rubber biscuits. The top of the radiator shall be supported by two (2) $\frac{3}{4}$ " tubular braces, bolted to the chassis stub. Anti-vibration rubber biscuits shall be installed at the top threaded end of the braces where they attach to the radiator.

ENGINE COOLING CERTIFICATION

QW-13-00-7000

"EPQ" (End Product Questionnaire) certification shall be provided by the chassis manufacturer. Certification shall be documented with reference to each specific chassis model by the chassis manufacturer.

FAN CLUTCH

QW13-00-7520

A fan clutch shall be provided for the engine cooling fan. The clutch shall be of a failsafe design, in that it shall fail in the "on" mode and thus prevent overheating in the event of component or air line failure.

SKID PLATE

QW13-01-2400

A radiator skid plate shall be provided to protect the radiator from debris. The skid plate shall cover the lower radiator tank and shall be painted to match the frame rails.

QW13-03-1200

TRANSMISSION

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An Allison, Model 4000 - EVS, electronically controlled, 5 speed automatic transmission with integral fluid filter shall be provided. A transmission cooler shall be installed in the radiator bottom tank. A warning light and buzzer shall be provided on the cab dash to alert the driver should the transmission overheat.

The transmission shall include the following: an oil life monitor, a filter life monitor, and a transmission health monitor. The oil life monitor determines fluid life remaining by monitoring various operating parameters. The filter life monitor determines when fluid filter(s) need to be replaced. The transmission health monitor determines when clutch system inspection is required. The monitors send a message via a blink code to a special prognostic light on the shift pad. Also on the shift pad shall be installed a digital, double-digit display that identifies the level of transmission oil. The display shall identify the oil level as "Ok", "Lo" or "Hi", also indicating the number of quarts lo or hi.

The transmission shall include the following emergency vehicle specifications:

Maximum gross input power: 600 hp

Maximum gross input torque: 1850 ft.lb.

Input speed range: 1700 to 2300 rpm

Direct gear lock-up: 4th @ 1.00 to 1.00

Overdrive gear and ratio: 5th @ 0.74 to 1.00

Gear ratios shall be as follows:

1st	3.51 to 1
2nd	1.91 to 1
3rd	1.43 to 1
4th	1.00 to 1
5th	0.74 to 1
6th	0.64 to 1
Rev	-4.80 to 1

The transmission shall automatically shift into neutral whenever the chassis parking brake is applied.

TRANSMISSION FLUID

QW13-03-2015

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The Allison 4000-EVS transmission shall be delivered from the factory with a synthetic SAE standard ATF.

TRANSMISSION PROGRAMMING

QW13-03-3000

The transmission shall be programmed as a 5-speed with 5th gear (overdrive) selected by mode button only.

TOUCH PAD TRANSMISSION SHIFT CONTROL

QW13-03-4000

Touch pad control shift module shall be mounted to the right of the driver on the console and be indirect lighted for after dark operation.

DRIVELINE

QW13-05-0240

Drivelines shall be built with heavy-duty metal tubes and utilize Spicer 1810 series or "Equal" mechanics type universal joints with "half round" end yokes. This quick disconnect strap and bolt design type end joint shall allow the driveline to be easily disassembled and dropped straight down for ease of service and maintenance. They also shall be dynamically balanced by the truck manufacturer before installation in the chassis. A splined slip joint is to be provided in each shaft assembly.

ENGINE STARTER

QW13-09-0020

A Delco, 12 volt, 39 MT-HD starter shall be installed.

AIR COMPRESSOR

QW13-11-0410

A Wabco 26.0 cfm air compressor shall be furnished. The air compressor shall be gear driven off the engine.

EXHAUST

QW13-13-0008

A single exhaust module containing an SCR chamber and a DPF chamber shall be installed on the right side of the vehicle, immediately behind the cab. The exhaust module shall ingest urea from a remote storage tank to remove NOx from the exhaust. The exhaust assembly shall be mounted outboard of the frame rail.

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TAILPIPE EXTENSION

QW13-13-0900

The tailpipe shall terminate with a magnetic flange for a Plymovent exhaust evacuation system. The tailpipe shall be mounted perpendicular to the side of the truck and be flush with the body. 12" of clearance between the pipe and the tire will be provided. The tailpipe mounting shall be straight out from the body.

ENGINE BRAKE

QW13-15-1530

A Jacobs engine brake shall be installed with controls within easy reach of the driver. Brake shall automatically be actuated when the accelerator pedal is released. The engine brake shall be wired in conjunction with the rear brake lights so that they are activated when the engine brake is engaged. It shall have a three position switch; "LOW", "MEDIUM" and "HIGH" along with an "OFF" and "ON" switch.

TELMA FOCAL RETARDER

QW13-15-1530

A Telma Focal retarder shall be installed in the drive line to provide an auxiliary braking device for the vehicle. Telma application shall be achieved by depressing the brake pedal. There shall also be a four lamp indicator system to indicate the progressive stages of vehicle retardation. A momentary on/off switch with indicator light defaults on, resetting with the battery switch. The retarder shall be reset with the ignition or by pressing the switch a second time. The Telma relay box shall be mounted at the manufacturer's discretion in an easily accessible location for service.

The Telma operation shall be determined at the pre-construction conference.

COOLANT OVERFLOW RESERVOIR

QW13-00-760S

A six (6) quart coolant overflow reservoir shall be provided. It shall be accessed in the officer's step well. A hinged aluminum tread plate door with small D-ring handle shall be provided for access. A visual inspection shall be possible without tilting the cab (no exceptions). The aluminum tread plate door shall be properly labeled.

SILICONE HOSES

QW13-01-2100

All hoses in the cooling system shall be silicone type with stainless steel constant torque Oetiker clamps.

FUEL SYSTEM

QW13-02-2800

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Clarify: 85 gallon

The vehicle shall be furnished with a minimum 65 gallon fuel tank mounted behind the rear axle and just below the frame rails using steel rods and cradle. The tank shall be constructed of stainless steel and equipped with a swash partition and vent. The fuel tank shall meet all FHWA requirements and all DOT and FMVSS regulations for rollover protection. A 2" diameter fill inlet shall be provided. The fuel cap shall be chained to inlet tube or to the body sheet metal to prevent loss. Braided hoses shall be provided for the fuel lines. A 1/2" NPT drain plug shall be located at the lowest point of the bottom of the tank.

The stainless steel fuel fill inlet shall be located on the left (drivers) side of the apparatus in the step well cavity. It shall be concealed behind a door. The inside of the door shall be marked "ULTRA LOW SULFUR DIESEL FUEL ONLY". The fuel inlet area, recessed behind the door, shall be completely enclosed to prevent dirt and debris from entering. Provision shall be provided inside the fill recess for drainage of any spilled fuel within the cavity.

Fuel lines shall have an additional four (4) feet of length at the fuel tank. This additional hose shall be coiled and secured to the top of the fuel tank.

The fuel door shall be constructed of stainless steel and shall have a brushed finish.

QW13-08-3040

~~FUEL WATER SEPARATOR WITH ALARM & HEATER~~

QW13-08-5630

~~A Racor 490 spin-on 10 micron filter with fuel water separator with water sensor alarm and heater shall be mounted in a serviceable and accessible location, that the cab may need to be tilted for.~~

EXCEPTION: Racor Greenmax

FUEL LINE SHUTOFF VALVES

QW 13-08-5100

Fuel line shutoff valves shall be provided to prevent fuel from draining back while changing fuel filters.

CLARIFICATION: One valve

ENGINE FUEL COOLER

QW 13-08-5410

An engine fuel cooler shall be provided on the apparatus. The engine fuel cooler shall cool the returning fuel from the engine.

ELECTRIC FUEL PUMP

QW-13-08-5600

An auxiliary electric fuel pump shall be provided in the fuel line to assist in priming the fuel system. Switch for pump shall be located on cab instrument panel and labeled "For Priming Only".

ALTERNATOR

QW 13-10-2500

A 430 amp Delco alternator, model 55SI, shall be provided.

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AIR CLEANER

QW13-12-0510

A Racor Ecolite® dry type engine air cleaner shall be provided. It shall be installed in a location above the chassis frame rails and no less than 40" above the ground. A visual inspection shall be possible without tilting the cab (no exceptions). The air cleaner shall be serviceable through an access opening of no less than 30" wide by 13" high.

AIR RESTRICTION INDICATOR IN INFORMATION DISPLAY CENTER

QW13-12-5500

An electrical engine air restriction indicator shall be provided and installed in the cab information display center.

DPF REGENERATION PROCESS

QW13-13-0030

NFPA 12.2.6.7.1 The regeneration process shall be activated by two methods:

- 1) Automatically by the engine system but only when the transmission is in gear and the speedometer indicates a speed above 5 mph (8km/hr).
- 2) Manually when initiated by activation of a switch located in the driver's area of the driving compartment.

There shall also be an inhibit switch placed near the driver to inhibit an automatic reburn.

DEF & DEF ACCESS

QW13-13-0055

The urea mixture, a solution of 2/3 water and 1/3 urea which reacts with NO_x to create nitrogen and water, shall be stored in a 10 gallon tank equipped with a level sensor and alarm to prevent run-out.

The filling or adding of DEF to the DEF tank shall be available without tilting the cab (no exceptions). Access to the urea tank fill connections and level sensor shall be available without tilting the cab.

DEF FILL ACCESS DOOR

QW13-13-0059

A hinged door shall be provided for access to the DEF fill cap and neck. The DEF fill access shall be located on the left hand side of the cab, under the crew cab floor behind the crew cab step well battery access hinged door.

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EXHAUST HEAT SHIELDS

QW13-13-1130

Heat shields shall be provided as needed to prevent damage to body and wiring from excessive exhaust temperatures. The exhaust pipe shall be wrapped in multi-layered insulation blankets, from just aft of the turbo down to inlet side of the DPF. Each blanket shall have a fiberglass inner layer and a silicone impregnated fiberglass cloth outer layer

The cab shall receive 1.25" thick foil back insulation blanket under the crew floor to reduce floor temperatures.

All harnesses and cables in proximity to exhaust system components shall be protected with insulation.

FAST IDLE SWITCH

QW13-15-4100

A fast idle switch shall activate an engine high idle. The circuit shall be wired through the neutral safety/parking brake interlock to prevent activation when the transmission is in the road mode. Fast idle shall be set at 1000 RPM's. A switch located inside the cab convenient to the driver shall be provided for this system.

LUBRICATION NAMEPLATE

QW13-15-5010

A nameplate shall be installed that specifies the quantity and type of the following fluids used in the vehicle and tire information:

Engine oil

Engine coolant

Chassis transmission fluid

Drive axles lubrication fluid

Air condition refrigerant

Air conditioning lubrication fluid

Power steering fluid

Cab tilt mechanism fluid

Aerial hydraulic system fluid

Generator system lubricant

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Front tire cold pressure

Rear tire cold pressure

Maximum tire speed ratings

A layer of Velvet Polycarbonate shall overlay the lettering to protect it. The lubrication nameplate shall be installed on the interior face of the driver's door.

STAINLESS STEEL FULL TILTING CAB

QW20-00-550D

The cab shall be designed specifically for the fire service and shall provide a heavy gauge stainless steel cage for strength and safety. The cab shall be made in the factory of the bidder and must be constructed from stainless steel (no exceptions). The cab shall be of the open interior design. The entire cab shall tilt forward for engine access and allow the removal of the engine from the chassis without dismantling or removing the major components of the engine. No plastic or fiberglass shall be used in the construction of the cab sub-frame, floor assembly, front assembly, side assemblies, back wall assemblies or roof assembly.

FRONT CAB DIMENSIONS

The front face of the forward cab shall measure 68" from the center of the front axle. The cab shall have an inside width of 91" and outside width of 96". Entrance step wells to the driver's and officer's positions shall be a minimum of 26" wide. Entrance steps shall be made of expanded grating.

CREW CAB DIMENSIONS

The back wall of the cab shall measure 74" from the center of the front axle. The cab shall have an inside width of 91" and outside width of 96". Entrance step wells to the crew cab positions shall be a minimum of 34" wide. Entrance steps shall be made of expanded grating.

CAB MOUNTING

A four point mounting system shall be provided for the front cab. The mounting system shall consist of two (2) front pivot mounts fabricated of steel and two (2) rearward lock plates attached to the rear cab sub-structure. Each front pivot mount shall consist of a greaseless pin and a multi-layered, self-lubricating, composite bearing. The outer layer of the bearing shall be high-durometer rubber to isolate road vibrations and shock. Each rear lock plate assembly shall consist of two hydraulic actuated locks isolated from the chassis by center bonded rubber mounts.

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SUB-FRAME

The sub-frame shall be stainless steel reinforced welded safety-cage construction utilizing a 3" x 4" rectangular structural steel tube sub-frame. All joints shall have continuous welds; stitch welding shall not be acceptable. The sub-frame shall be designed as a one-piece structure from the front to the back of the cab. It shall be used to support the cab while tilting, join front pivots to the cab locks, and to join the cab to the chassis. Pocketing of the sub-frame shall not be acceptable.

FRONT ASSEMBLY

The safety-cage section at the front of the cab shall be constructed of 1.25" stainless steel tubing and shall join the front door posts together with the main sub-frame. There shall be a 2.50" x 1.50" x .25" heavy wall lower cross tube that joins the cab sills together to prevent cab twisting when tilting the cab. The front fire walls shall be set back from the front assembly structure to provide added protection in a frontal crash. The outer cab skin shall not be an integral structural member, although it shall help stiffen the cab front face.

The front cab door hinge mount (aka "A" pillar) shall be a 2" x 2" tube with a .19" thick wall.

CAB FLOORS

All floor components shall be welded directly to the sub-frame. The floor shall be constructed of 50,000 psi stainless steel. Cab floors shall be covered with a sound barrier mat with a heavy-duty wear surface.

SIDE WALL ASSEMBLIES

The safety-cage on the sides shall be constructed of 1.25" stainless steel tubing. Both side wall assemblies shall be joined to the sub-frame via thick tubular structures, using heavy fillet welds. This shall strengthen the walls to withstand high roof loading. The side wall outer skins shall be integral with the cab structure as well as additional formed components to help stiffen side wall assemblies. There shall be 1.25" of insulating foam between the exterior and interior side walls. The structure shall be reinforced for cab entry grab handle mountings.

The rear cab door hinge mount (aka "C" pillar) shall be equivalent to a 2.5mm formed channel with .19" thick tapping bar.

ROOF ASSEMBLY

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The 1.25" stainless steel tubing used in the construction of the roof section of the safety-cage shall support 2 psi of loading across the whole roof. The fabricated and welded roof sills and front header shall be made of 50,000 psi stainless steel material. The corner caps shall utilize spun metal technology thus retaining the metal's strength while producing a very rigid corner joint. The side roof covering (rolled edges) shall be constructed of stainless steel formed in a quarter round. It shall form a hollow double wall, angle reinforced roof edge with an integral drip rail. The roof top outer wall shall not be an integral structural member, although it shall stiffen the roof. There shall be 1.25" of insulating foam between the exterior roof and interior ceiling.

CAB DOOR CONSTRUCTION - BARRIER CLEARING

QW20-00-821C

The forward and crew cab doors shall be barrier clearing and fabricated from stainless steel (no exceptions). The forward and crew cab doors shall be 34.5" wide. The interior and exterior door handles to be flush mounted paddle style with a keyed lock incorporated in the exterior handle and lever control lock incorporated in the interior handle. The crew cab doors shall not include a taper and maintain full width from top to bottom for maximum crew entry and exit access.

The door check straps shall be six (6) inch wide 9800 lb woven nylon strap with sewn integral steel reinforcement bars for attachment to cab and cab door. The door's latch locking mechanism shall make it impossible to lock oneself out of the cab unless locked with the supplied key. The door rotary latch mechanisms latch linkage shall be accessible through an access panel integral to the interior door panel. Doors shall be hung on stainless steel full length hinges attached to cab and door with .25" bolts. The hinges for each door shall be of one-piece 304-2B stainless steel construction with stainless steel pins and 0.090 gauge leaves with 2" joints and a 3" width opening. Doors shall meet Federal Motor Vehicle Safety Standard #206. The doors shall be designed so as to allow the tempered laminate windows to roll completely down

EXCEPTION: Front Doors to open 70 degrees due to front jacks

The cab doors shall open approximately 90 degrees. The upper inside bolt-on panel on each cab door shall be removable and shall be constructed of aluminum.

All four (4) cab passenger compartment doors shall have at least 96 square inches of reflective material affixed to the inside of each door to alert traffic when the door is open. The reflective material shall be a chevron design that complies with NFPA requirements.

QW20-50-6000

CAB TILT

QW20-00-850C

The cab shall tilt a minimum of 45 degrees for normal servicing of the engine and other equipment. The tilt cab locking system shall be a two-point type that locks automatically when the cab is lowered into its nested position. The cab tilt package is custom designed for safety and ease of vehicle maintenance. The hydraulic tilting system consists of two (2) heavy-duty single acting cylinders. The power supply is a high efficiency electric over hydraulic system with an integral mechanical override in case of battery failure. All components and parts are designed for installation with a minimum of 3 to 1 safety factor based on current S.A.E. standards.

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In addition to the velocity fuses, a secondary safety system shall be provided to hold cab in the fully raised position in the event of a failure in the primary lift mechanism. It shall consist of a metal channel device, which automatically drops over the extended rod of the right side hydraulic lift cylinder thereby preventing its retraction. The safety channel can only be released through an overt action made by the operator such as pulling a lever or cable from the right side of the apparatus, near the safety channel. Automatic release of the safety system shall not be acceptable.

~~The cab tilt system shall be remotely controlled utilizing a fifteen foot cable with a hand held push button device which is located, stored, and tethered directly to a compartment beneath the officer side floor, forward step well area. The compartment shall have a hinged door with a latch. The door shall have the same finish as the surrounding step well area.~~

EXCEPTION--Due to steps

FORWARD CAB FLOOR

QW20-25-4700

The forward cab floors shall be covered with a black mat that functions as a sound barrier. The mat shall have a pebble textured heavy-duty wear surface and be laminated to a foam underlay. The mat shall be composed of a vinyl-nitrile blend, which is the base material used in IV tubes and blood bags; it is not affected by blood or other body fluids.

CREW CAB FLOOR

QW20-25-482A

The crew cab floors shall be covered with a black mat that functions as a sound barrier. The mat shall have a pebble textured heavy-duty wear surface and be laminated to a foam underlay. The mat shall be composed of a vinyl-nitrile blend, which is the base material used in IV tubes and blood bags; it is not affected by blood or other body fluids.

ATP OVERLAY ON BACK OF CAB

QW20-00-68B1

An aluminum tread plate overlay shall be provided over the entire exterior rear wall of the cab.

CAB GRILLE - VERTICAL BARS AND RAISED BEZEL SURROUND

QW20-00-6910

The cab front opening shall be covered with a custom made polished stainless steel grille. The grille shall have formed vertical bars spaced apart on 2" centers. The upper polished stainless steel grille shall have a matching lower counterpart to further facilitate engine cooling. The two (2) stainless grilles shall be housed in a raised bezel.

ENGINE AIR INTAKE GRILLE WITH WATER/EMBER SEPARATOR

QW20-00-69MX

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A highly polished stainless steel removable grille for engine air intake shall be provided. The air intake grille shall contain the replaceable water and ember separator filter in an integral housing.

The air intake grille and water/ember separator cartridge shall be located on the side of the fixed crew cab, above and to the rear of the driver's side steer axle. The engine air intake grill shall be no less than 60" above the ground.

FLAT ROOF

QW20-00-741S

A flat roof shall be provided with an interior floor to ceiling height of a minimum of 59".

PAINTED CAB ROOF

QW20-00-78A1

The exterior surface of the cab roof shall be painted in compliance with the cab paint specifications detailed elsewhere in this specification document.

AUXILIARY ENTRANCE STEPS

QW20-00-9100

Auxiliary cab entrance steps shall be provided at each cab door opening, below the cab, to reduce the cab entrance step height by approximately 9.5 inches.

FOLDING INTERMEDIATE CAB STEPS

QW20-00-910X

Four (4) fold up intermediate cab steps shall be provided in the step well beneath each door. One (1) step shall be mounted on the forward vertical surface of the step well for each of the rear doors and on the rear vertical surface of the step well for each of the front doors. The steps shall not interfere with the operation of any access doors built into the step wells when folded.

The folding intermediate step shall be positioned to divide the height of the step well in half.

EXCEPTION/CLARIFICATION on exact placement

CAB SIDE ACCESS DOOR

QW20-00-951C

Two (2) stainless steel cab side access doors shall be provided on the cab, one each side, to the rear of the front cab entrance doors. Door openings shall be approximately 13.00" wide x 27.00" high. The doors shall fit flush with the exterior skin of the cab and be hung on 304 stainless steel full length hinges attached to the cab and door by 0.25" bolts. The doors shall open a minimum of 90 degrees.

QW20-00-960A
QW20-00-960Q

The cab side access doors shall be vertically hinged at the front edge, and the doors shall each have a chain style door stay. The "D" handle type latches shall be provided on the upper part of the door.

QW20-00-960F

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CAB SIDE ACCESS DOOR SILL PROTECTORS

QW20-00-9640

Brushed stainless steel sill protectors, approximately .50" wide, shall be provided on the cab side access door sills to protect the painted finish.

FRONT ALUMINUM INNER LINERS

QW20-05-2020

Semi-circular inner liners shall be provided in each front wheel housing. They shall be constructed of aluminum and shall be bolted in place so they may be removed if damaged. Self-tapping sheet metal screws are not acceptable. The outside edge of the inner liner shall be bolted along its entire length. The bottom edge of liner shall not have a formed reinforcement flange to avoid trapping dirt and debris.

FRONT FENDERETTE

QW20-05-2120

Black rubber fenderettes shall be installed in the front wheel openings. They shall be sufficiently wide to completely cover the outside rear tire and reduce wheel splash along the sides of the cab. They shall be installed with 1/4" hex head bolts (self-tapping sheet metal screws are not acceptable). There shall be a stainless steel backing strip between the rubber and the mounting flange to add support. Fenderette shall incorporate a vertical flange to cover the area where the cab side and wheel opening mounting surface meet. The fenderettes shall be a minimum of 1/4" thick, have a mold formed outer radius and a rounded bead at the wheel opening edge.

FRONT MUD FLAPS

QW20-07-010R

Heavy duty mud flaps shall be provided and installed to the rear of the front wheels. Flaps shall be 14" wide and be made of 0.38" heavy duty rubber material to prevent "sailing".

REAR MUD FLAPS

QW20-07-020R

Heavy duty rear mud flaps shall be provided and installed to the rear of the rear dual wheels. Flaps shall be 24" wide and be made of 0.38" heavy duty rubber material to prevent "sailing".

CROSSOVER MIRRORS

QW20-10-1800

An approximately 8" diameter mirror with polished stainless steel housing shall be provided on the right front of the cab above the windshield. The main adjustment bar shall be mounted to the cab roof.

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The crossover mirror shall be convex and have an inboard location.

QW20-10-2070
QW20-10-2050

MIRRORS

QW20-10-1500

Two (2) Rosco Accustyle heated mirrors with remote shall be installed on the cab doors, one on each side of the cab. The flat upper mirror shall measure 7" x 14" and the lower convex section shall measure 6.5" x 6". The mirrors shall have a black finish.

REAR MIRROR

QW20-10-4600

A K-10, 10" stainless steel eyeball mirror shall be installed on the outside of the rear wall on the curb side of the cab for viewing of mid-body outrigger on that side. The bracket holding the mirror shall be constructed of 3CR12 and shall be painted job color.

ADDITIONAL MIRRORS

QW20-10-460X

Two (2) additional mirrors shall be installed on each of the rear crew cab doors so crew members can see traffic hazards approaching from the rear of the apparatus before exiting.

WINDSHIELD

QW20-12-0300

The windshield shall be of tinted automotive laminated safety plate glass with a curved two-piece design. Right and left hand windshield glass shall be symmetrical and interchangeable from side to side to minimize spare parts stock and expense. Windshield shall be installed and held in place by an extruded rubber molding with a bright finish, decorative, locking bead. Cab shall be finish painted prior to windshield glass being installed.

Economical windshield replacement glass shall be readily available from local auto glass suppliers.

WINDSHIELD WIPERS AND WASHERS

QW20-12-0308

One (1) wet arm operated windshield wiper shall be provided for each plate of windshield glass for accessibility and optimum windshield wiping surface areas. Wipers shall be two speed type with intermittent wiping feature. One (1) control switch shall be provided and located on the self-canceling directional switch for both wiper arms. The switch shall combine the on/off (automatic park position), two speed, intermittent and washer functions in one control. The turning switch shall activate the wipers and control speed, and pushing it shall operate the washers. The wiper arms shall park in a low, horizontal position to provide an unobstructed view when not in use.

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The wipers shall be wired through the parking brake, so they discontinue operation when the parking brake is applied.

QW20-12-0309

WINDSHIELD WASHER RESERVOIR

QW20-12-301S

A five (5) quart windshield washer fluid reservoir shall be provided. It shall be accessed in the officer's step well. A hinged aluminum tread plate door with small D-ring handle shall be provided for access. A visual inspection shall be possible without tilting the cab. The aluminum tread plate door shall be properly labeled.

DOOR WINDOWS

QW20-12-271S

A retractable window with automotive type laminated safety glass shall be provided in all four (4) forward hinged cab doors. All glass shall be tinted. Glass shall slide in stainless steel side channels with cloth/fiber liners. Rubberized fiber seals shall be located at the bottom of the window opening to prevent water and debris from entering the interior of the door when the glass is up (or down). A seal shall be placed on both sides (interior and exterior) of the glass. The front door glass shall be 23.75" high x 25.75" wide upper and 27.50" wide lower. The rear door glass shall be 23.75" high x 30" wide. The door window openings shall be trimmed on the exterior side with a smooth, black, poly vinyl chloride (PVC) molding

Electric power window regulator shall be the enclosed, sliding flexible shaft, gear type for ease of operation and reliability. The shaft shall enter a vinyl plastic protective sheath whenever it is exposed. A 12 volt electric motor with gear reduction box to slow driven gear rpm and increase power transmission shall be provided. Individual switches shall be provided so that the driver controls the left side forward door window, officer the right side and crew occupants the rear.

Aftermarket add-on type electric power window conversion devices like the type that replaces the crank arm will not be acceptable.

DRIVER'S DOOR GLASS SWITCH

QW20-12-2792

An individual switch for the driver's electric door window shall be provided on the driver's dash.

OFFICER'S DOOR GLASS SWITCH

QW20-12-2796

An individual switch for the officer's electric door window shall be provided on the officer's dash.

CREW DOOR GLASS SWITCHES

QW20-12-2798

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An individual switch for the crew electric door windows shall be provided on the crew doors.

ADDITIONAL SWITCHES

QW20-12-3000

Three (3) additional switches shall be provided to allow driver to operate all power cab door windows.

CREW CAB SIDE GLASS

QW20-12-111S

There shall be a side window on each side of the cab between the doors. They shall be tinted and be manufactured of automotive laminated safety glass. The curb side window shall measure 23" high x 12" wide. The street side window shall measure 23" high x 12" wide. They shall be installed and held in place by an extruded rubber molding with a chrome plated, decorative, locking bead. The cab shall be finish painted prior to window glass being installed.

CAB DOOR FRAME SCUFF PLATES

QW20-16-5000

A highly polished stainless steel scuff plate shall be installed on the striker side of each cab door frame and shall run the full height of the door opening. The scuff plate shall be a single bend configuration that guards the outer door frame post from damage and chips to the paint.

CAB DOOR HINGES

QW20-16-9020

All piano hinges on the exterior cab doors shall be mill finished.

CAB HANDRAILS AND GRAB HANDLES

QW20-18-030R

Handrails shall be 1-1/4" diameter knurled stainless steel.

Handrails shall be installed as follows:

Four (4) 17" handrails shall be installed in the side of the cab, one just to the rear of each cab door.

Two (2) handrails shall be placed horizontally across both of the rear crew cab doors. The height of these handles on the door will be determined at the pre-construction conference.

20-18-010X

Grab Handles shall be installed as follows:

EXCEPTION--interior
Handrails are Alum.

Two (2) 6" chrome grab handles shall be provided, one on the inside of each front cab door.

Two (2) 12" rubber covered grab handles shall be provided, one on the inside of each crew cab door.

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Two (2) 12" rubber covered grab handles shall be provided, one on the driver's side and officer's side front A-pillar, above the door hinge, to assist in entry to the cab.

Two (2) 12" rubber covered grab handles shall be provided, one on each rear crew door hinged-pillar, on the hinged side of the door, to assist in entry to the cab.

REAR CAB HANDRAIL

QW20-18-1020

One (1) 18" handrail shall be installed on the rear of the cab on the driver's side at a 30 degree angle to provide a 3-point stance for accessing the turntable. The handrail shall be 1-1/4" diameter extruded aluminum, knurled, with a bright anodized finish.

All handrail stanchions shall be chrome plated. They shall be bolted to the body with 1/4" stainless steel hex head bolts. Stanchions shall have a rubberized gasket placed between them and the body surface they are mounted on. A drain hole shall be provided in each bottom stanchion

EXCEPTION: (1)
one 18" on center

ADDITIONAL GRAB RAILS

QW20-18-1015

Two (2) 8" knurled aluminum grab rails shall be provided and installed on/in the cab.

Handrails shall be located at: Below windshield and above upper light panel, one (1) each side.

REAR CAB FOLDING STEP

QW20-19-0010

One large polished, chrome plated, cast aluminum folding step with integral LED light shall be installed on the rear of the cab on the driver's side to assist in accessing the turntable.

CRASH TEST

QW20-20-0100

The cab shall be certified for the following tests:

SAE J2420: Cab Over Engine (COE) Front Strength Evaluation - Dynamic Loading - Heavy Trucks

SAE J2422: Cab Roof Strength Evaluation - Quasi Static Loading - Heavy Trucks

ECE Regulation 29: Protection of Occupants of Cab in Commercial Vehicle

Performance Measure:

1. After undergoing each test, the cab of the vehicle shall exhibit a survival space accommodating a 50th percentile male ATD in the median position without contact between the manikin and non-resilient parts for all seating positions.

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2. None of the doors shall open during the tests.
3. The cab attachments may be distorted or fractured, however, the cab shall remain attached to the vehicle frame in at least one attachment location.

HELMET HOLDER

QW20-20-4010

The helmets shall be stored in the body in accordance with NFPA 1901. There shall be five (5) Zico ~~UHH-1~~ helmet holder brackets provided in the cab. The brackets shall provide quick access and secure storage of the helmets. The bracket locations shall be determined at time of final inspection.

EXCEPTION UHH2

HEADLINER

QW20-25-080G

The cab shall be provided with a removable gray headliner for ease of servicing the electrical wiring placed in the cab roof. The headliner shall consist of 3 layers of material. Next to the roof shall be a layer of acoustical insulation made of polyester and polypropylene fibers. The next layer is 1/4" thick Luann. Finally, there is a 1/4" thick layer of foam/perforated acoustical vinyl.

The headliner shall be the multi-piece type (minimum of three (3) sections) so that the entire liner does not have to be removed for localized maintenance.

BACK LINER

QW20-25-0910

The cab shall be provided with an aluminum tread plate removable back liner. The back liner shall be the multi-piece type (minimum of three (3) sections) so that the entire liner does not have to be removed for localized maintenance.

HEAD BUMPERS

QW20-25-094G

Two (2) padded gray vinyl head bumpers shall be provided each side on the interior of the cab above the crew doors in the header area.

FRONT CAB ENGINE ENCLOSURE

QW20-25-102B

The engine enclosure structure shall have a 1-1/4" thick inner lining, on the engine side, comprised of aluminized foil and foam/barrier composite for heat insulation. The tunnel cover shall have 1/2" decoupled foam lower and 1" decoupled foam upper covering, on the cab interior side, for noise insulation. The top forward portion of the hood shall have a full-width riser with a sloped face for the installation of the switch panel. The sloped panels shall be used for vehicle accessory controls. A minimum of 1" shall be provided between the right edge of the accelerator pedal and the side of the

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engine hood. A removable cover over the engine enclosure and insulation shall be coated with black LINE-X to act as an insulator for sound and engine temperature, as well as to provide an easy-to-clean work surface.

ACCESSORY MOUNTING STRUCTURE

The top portion of the engine enclosure shall have a stainless steel channel frame located between the engine tunnel structure and the cover to support the cover and facilitate mounting of accessories and equipment.

CREW CAB ENGINE COMPARTMENT ACCESS DOOR

An access door shall be provided at the rear of the engine enclosure for routine engine fluid checks. This door shall be large enough to accommodate changing the air filter without tilting the cab. The access door shall be insulated from engine heat with aluminized foil/foam/barrier composite and sealed to prevent exhaust fumes from entering the crew cab.

STEERING WHEEL WITH TILT/TELESCOPE

QW20-25-3000

A padded steering wheel with center horn ring shall be provided. The upper steering column shall be of the tilt and telescopic type. A self-canceling directional switch with wiper control and headlight dimmer control shall be mounted on the steering column with an ICC four way flash switch. The self-canceling directional switch shall be easily removable and replaceable without removing the steering wheel or column assembly. The junction of the shaft and the cab floor shall be sealed to prevent air exchange between the cab interior and exterior.

BLACK LINE-X FOR CAB DASH

QW20-25-400B

The cab dash shall be sprayed with black LINE-X having a high resistance to abrasion and tearing. A vinyl cloth glued or laminated in some manner to a metal backing surface shall not be acceptable.

The LINE-X shall absorb impact without surface damage. The LINE-X shall be resistant to gasoline, diesel fuel, paints, bleaches, organic solvents and other cleaning agents and chemicals. It shall include sound dampening and vibration elimination properties.

The LINE-X shall be solvent free and be environmentally safe to apply with no VOC or CFC hazards. Its surface shall have a non-glare, non-granular texture and be easily cleaned with common cleansing compounds.

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OFFICERS DASH MDT RECESS

The top of the officer's dash shall include a recess for a laptop computer. The recess shall measure at least 15" wide by 8.5" deep by 3" high at the rear. An access panel shall be cut into the recess to allow for the installation of wiring for the computer.

EXCEPTION: NA

OVERHEAD DASH

The overhead dash shall have a dark gray LINE-X finish.

QW20-25-407G

SUN VISORS

QW20-25-5100

Two (2) approximately 8" x 28" dark smoke colored transparent polycarbonate Lexan sun visors shall be provided, one on the driver's side and one on the officer's side. Visor shall be supported at both ends to prevent drooping.

CUP HOLDER

QW20-25-6010

Four (4) cup holder(s) with a black Line-X finish shall be installed in the cab. The cup holder shall be designed for mounting on top of the engine tunnel.

The cup holder shall be located and mounted after final inspection.

VEHICLE DIMENSION SIGN

QW20-25-8000

A sign shall be provided in the front cab area indicating the height of the completed apparatus in feet and inches, length of the completed apparatus in feet and inches, and the gross vehicle weight rating (GVWR) in tons.

DRIVER'S SEAT

QW21-00-BOAR

The driver's seat shall be an H.O. Bostrom Sierra Air-100 reclining high back seat with air suspension. This seat shall have 5" horizontal adjustment.

The driver's seat shall be held at NFPA regulated height by a 3CR12 stainless steel frame that measures approximately 18" wide x 5" high x 17" deep, front to back at the top and 13.5" deep, front to back at the bottom.

QW21-05-030A

The driver's seat shall have a 3-point vertically adjustable D Loop style shoulder harness seat belt, to meet FMVSS and NFPA 1901 current edition requirements. The seat belt shall be red in color. The seat belt

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buckle shall be mounted on a rigid stalk that is as long as allowed under NFPA 1901 so that the buckle remains positioned in an accessible location.

QW21-01-BSAF
QW21-05-0300
QW21-08-0200
QW21-12-701D

OFFICER'S SEAT

An H.O. Bostrom Tanker 450 Air-100 SCBA seat shall be provided for the officer. This seat shall have no forward/aft adjustment.

The officer's seat shall be held at NFPA regulated height by a 3CR12 stainless steel frame that measures approximately 18" wide x 5" high x 17" deep, front to back at the top and 13.5" deep, front to back at the bottom.

NFPA compliant H. O. Bostrom SecureAll™ universal SCBA bracket shall be installed in the seat.

The officer's seat shall have a 3-point vertically adjustable D Loop style shoulder harness seat belt, to meet FMVSS and NFPA 1901 current edition requirements. The seat belt shall be red in color. The seat belt buckle shall be mounted on a rigid stalk that is as long as allowed under NFPA 1901 so that the buckle remains positioned in an accessible location.

QW21-11-6D00
QW21-11-7B0A
QW21-08-0200

REAR SEATING

The rear crew cab section shall contain one (1) center forward facing H.O. Bostrom 400CT SCBA flip-up passenger seat. The seat shall be installed in the center of the rear wall of the cab directly behind the engine enclosure.

The rear crew cab section shall contain two (2) outboard forward facing H.O. Bostrom 400CT SCBA flip-up passenger seats. The seats shall be installed on the rear wall of the cab.

An NFPA compliant H. O. Bostrom SecureAll™ universal SCBA bracket shall be installed in each seat.

The seating area shall allow maximum room for fire fighters in full turn out gear with the outboard seat's distance from the side wall of the cab to be determined at the pre-construction conference.

The 3 rear forward facing seat(s) shall have a 3-point vertically adjustable D Loop style shoulder harness seat belt, to meet FMVSS and NFPA 1901 current edition requirements. The seat belts shall be red in color. The seat belt buckle shall be mounted on a rigid stalk that is as long as allowed under NFPA 1901 so that the buckle remains positioned in an accessible location.

~~An IMMI ReadyReach shall be attached to each of the three (3) forward facing seat belts. The ReadyReach positions the seat belt forward making the seat belt easier to reach.~~

EXCEPTION: no readyreach for outboard seats

SEAT UPHOLSTERY

QW21-12-7400

All cab seats shall be upholstered in black colored vinyl material.

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STORAGE COMPARTMENTS

QW21-15-1113

Two (2) storage compartments shall be provided in the cab. The compartments shall be rear facing and in the outboard position. The openings shall be covered with a webbing cargo net with metal buckles to secure the contents. The overall outside dimensions of each compartment shall be 21" wide x 18" deep x 21" high. The compartment(s) shall be constructed of 1/8" smooth aluminum. The exterior(s) shall have a LINE-X finish that shall match the lower cab dash/engine tunnel.

18" w x 21" deep x 24" tall

ELBOW PADS

QW21-12-7160

Two (2) "head bumper style" elbow pads shall be installed on the engine tunnel inboard of the officer and the driver. They shall be covered in vinyl and be attached to the engine tunnel. The color of the elbow pads shall be black.

QW21-12-719B

CAPACITY SIGN

A sign visible to the driver, that states the number of personnel the vehicle is designed to carry, shall be provided.

HEATER/DEFROSTER/AIR CONDITIONING-FORWARD CAB

QW21-23-071S

A front cab heater / defroster / air conditioning unit shall be provided. The HVAC unit shall distribute filtered, heated or cooled, fresh and / or recirculated, air through ducting of the cab front dash panels.

Heating capacity shall be rated at 46,000 BTU minimum.

Cooling capacity shall be rated at 33,000 BTU minimum.

The HVAC unit shall be located in the cab RH firewall and have a variable speed 625 CFM blower assembly. The HVAC unit shall be designed for serviceability and be located behind a removable panel. Access to air intake filter, heater core, evaporator core, and fan assembly shall be provided without removing the HVAC housing from the installed location.

Intake air shall be filtered by a commercially available filter and can be mixed between fresh and recirculated for vent / defrost and heat / cool selections.

Output air can be distributed between the four (4) defroster vent located at the base of the windshield, four (4) rear facing dash vents, and two (2) lower rear facing vents.

Defrost function selection can provide heated or cooled output air, fresh or recirculated intake air, and utilizes the AC system for drying air to the windshield. Output air will be directed through six (6) vents. Four (4) fixed flow vents located at the base of the windshield positioned and designed to distribute the

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air up. Two (2) adjustable vents located, one (1) at the LH edge of the dash directed at the LH driver's door glass and one (1) at the RH edge of the RH passenger's door glass.

Vent function selection can provide heated or cooled output air, fresh or recirculated intake air. Output air shall be directed rearward through four (4) adjustable vents. Two (2) adjustable vents shall be located in the center dash panel with positioning optimized for LH driver and RH passenger air flow direction to the upper torso. Two (2) adjustable vents shall be located, one (1) each forward seating position, in the upper outboard area of each forward seating kick panel, below the dash.

The front HVAC unit shall utilize a dedicated condenser located on the forward cab roof. The condenser shall be a stacked type, low profile and feature two fans. All connections, hose and harness, shall be through weatherproof bulkheads. The condenser assembly shall include a white powder coated cover over the stacked condenser coils and a white painted protective cover over the Freon hoses, dryer, valves, switches and / or solenoids above the cab roof and connected to the condenser body. Condenser and cover mounting shall be made without perforating the cab roof skin for maximum resistance to water intrusion to the cab interior.

Condensate from the forward HVAC unit shall be removed through a gravity drain system of tubing plumbed to exit below the frame rails. A pump shall not be allowed in the condensate drain system (no exceptions). Condensate draining into the interior of the cab or onto the occupants, headliner, roof or windshield will not be acceptable under any conditions. A detailed description of how builder proposes to drain HVAC condensation is required.

FRONT CONDENSER COVER

QW21-23-079L

The condenser body shall have one fabricated cover assembly providing complete protection for, and above the condenser fans. The design shall be modular to allow access to condenser components without removing the entire cover assembly.

The main condenser body and fan cover shall be approximately 10.5" high x 46" long x 19.75" wide with a base and sides fabricated from 3/16" wall 5052-H32 aluminum plate. Two removable covers, each over the top of each condenser fan, shall be constructed with 3/16" wall x 1" high aluminum expanded grating.

Condenser cover mounting shall be made without perforating the cab roof skin for maximum resistance to water intrusion to the cab interior.

MANUAL COOLANT SHUTOFF VALVE - INLET

QW21-23-0820

The forward cab heater inlet flow shall be interrupted by one (1) manual engine coolant shutoff valve mounted on a plate utilized specifically for auxiliary engine coolant flow control. The mounting plate and valve location shall be in the forward, RH side of the chassis engine area. Valve to be 1/4 turn style with label for ease of identification.

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MANUAL COOLANT SHUTOFF VALVE - RETURN

QW21-23-0900

The forward cab heater return flow shall be interrupted by one (1) manual engine coolant shutoff valve mounted on a plate utilized specifically for auxiliary engine coolant flow control. The mounting plate and valve location shall be in the forward, RH side of the chassis engine area. Valve to be 1/4 turn style with label for ease of identification.

REAR HEAT ADDITION CENTER REAR CREW CAB, 3 SPEED / ELECTRONIC CONTROL

Q21-23-271T

A crew cab heater shall be provided. The heater unit shall provide filtered, engine coolant heated, air to the crew cab area through a ducted enclosure.

Crew heating capacity shall be rated at 35,000 BTU minimum and the combined heating capacity of the cab HVAC units shall be 81,000 BTU minimum.

The heater unit shall have a variable speed 430 CFM blower assembly. The heater unit shall be designed for serviceability and be centrally located against the rear crew cab wall in a vented and ducted enclosure approximately 16" deep x 14.5" high x 20" wide. Access to air intake filter, heater core, and fan assembly shall be provided.

Crew heater function shall feature two (2) controls with backlighting. One (1) rotary fan control switch with four positions (OFF, LOW, MEDIUM, HIGH) and one (1) rotary temperature control coupled to an electronic water valve.

MANUAL COOLANT SHUTOFF VALVE - INLET

QW21-23-3020

The crew cab heater inlet flow shall be interrupted by one (1) manual engine coolant shutoff valve mounted on a plate utilized specifically for auxiliary engine coolant flow control. The mounting plate and valve location shall be in the forward, RH side of the chassis engine area. Valve to be 1/4 turn style with label for ease of identification.

MANUAL SHUTOFF VALVE - RETURN

QW21-23-3100

The crew cab heater return flow shall be interrupted by one (1) manual engine coolant shutoff valve mounted on a plate utilized specifically for auxiliary engine coolant flow control. The mounting plate and valve location shall be in the forward, RH side of the chassis engine area. Valve to be 1/4 turn style with label for ease of identification.

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AIR CONDITIONING SYSTEM - CREW CAB

QW21-23-3815

A crew cab air conditioning unit shall be provided on the cab ceiling, above the rear portion of the engine enclosure. The AC unit shall distribute cooled recirculated, air through six (6) outlets. The six air outlets include four (4) adjustable rear facing air diffusers and two (2) adjustable side outboard facing vents.

Cooling capacity of the crew AC evaporator unit shall be rated at 39,500 BTU minimum and the combined cooling capacity of the cab HVAC evaporator units shall be 72,500 BTU minimum.

The crew AC unit shall have a variable speed 577 CFM blower assembly. The intake air shall be filtered by a commercially available and serviceable filter. The AC unit shall feature independent fan speed and temperature controls.

The crew AC unit shall utilize a dedicated condenser located on the, rear, crew cab roof. The condenser shall be a stacked type, low profile and feature two fans. All connections, hose and harness, shall be through weatherproof bulkheads. The condenser assembly shall include a white powder coated cover over the stacked condenser coils and a white painted protective cover over Freon hoses, dryer, valves, switches and / or solenoids above the cab roof and connected to the condenser body. Condenser and cover mounting shall be made without perforating the cab roof skin for maximum resistance to water intrusion to the cab interior.

The air conditioning system, front and rear combined, shall exceed the performance standard of cooling the cab from an ambient temperature of 100 degrees Fahrenheit at 50% relative humidity to an average cab temperature of 75 degrees Fahrenheit in less than 30 minutes.

Condensate from the crew HVAC unit shall be removed through a gravity drain system of tubing plumbed to exit below the frame rails. A pump shall not be allowed in the condensate drain system (no exceptions). Condensate draining into the interior of the cab or onto the occupants, headliner, roof or windshield will not be acceptable under any conditions. A detailed description of how builder proposes to drain HVAC condensation is required.

REAR CONDENSER COVER

QW21-23-390

The condenser body shall have one fabricated cover assembly providing complete protection for, and above the condenser fans. The design shall be modular to allow access to condenser components without removing the entire cover assembly.

The main condenser body and fan cover shall be approximately 10.5" high x 46" long x 19.75" wide with a base and sides fabricated from 3/16" wall 5052-H32 aluminum plate. Two removable covers, each over the top of each condenser fan, shall be constructed with 3/16" wall x 1" high aluminum expanded grating.

Condenser cover mounting shall be made without perforating the cab roof skin for maximum resistance to water intrusion to the cab interior.

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HVAC CONTROL - FORWARD CAB

QW21-23-8020

HVAC controls shall feature rotary switches, function labeling, backlighting, and have colored indicators. A single, lighted, AC engagement push switch shall be provided for engaging the AC system components as needed.

The HVAC panel shall have four (4) rotary control switches inline, from left to right, in the following order:

- Fan Speed (OFF, LOW, MEDIUM, HIGH)
- Water Temperature Blend Control (HEAT-COOL)
- Outlet Air Blend Control (DEFROST-VENT)
- Intake Air Blend Control (FRESH-RECIRC)

The HVAC panel shall have one (1) raised, “push to engage”, switch that illuminates when the air conditioning is engaged. This switch shall be centrally located on the control panel, between the second and third rotary control switches, along the top edge of the control panel.

The HVAC control panel shall allow the operator to make selections or adjustments to any one of the four (4) selectors without resetting or disturbing the selections of other three (3) controls.

The HVAC control shall feature an override to engage the air conditioning system when the operator has selected 100% Defrost on the Outlet Air Blend Control.

AUXILIARY FANS

QW21-23-5000

Two (2) adjustable 7.5" auxiliary fans shall be provided in the cab with a two (2) speed control switch on the mounting pedestal. Their location on the cab ceiling shall be determined at the pre-construction conference.

MAP BOX

QW21-50-1005

A map box shall be provided and installed between the driver and officer on top of the engine hood. The box shall have four (4) angled vertical slots space on 2.75 inch centers. The rear interior of the slots shall be 14.25 inches wide by 8.00 inches deep and shall run crossways of the cab. The front two (2) slots shall be 4.00 inches deep.

The box shall be constructed of a 0.125 inch thick aluminum sheet metal welded assembly. It shall be covered with black LINE-X. The location of the map box shall be determined at the Final Inspection.

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MAP LIGHT

QW23-11-2150

A Sunnex model HS761-00 pivot and swivel map light with on/off switch, shall be located within easy reach of the officer. The location of the light shall be determined at the pre-construction conference.

12-VOLT ELECTRICAL SYSTEM

QW22-00-0105

The apparatus shall be equipped with a heavy-duty 12-volt electrical system. All 12-volt electrical equipment installed by the apparatus manufacturer shall conform to modern automotive practices. All electrical wiring and components installed in the apparatus shall be suitable for use in severe duty emergency vehicle applications.

GENERAL WIRING AND WIRE HARNESS CONSTRUCTION

Unless otherwise specified by the component supplier, all insulated wire and cable shall conform to SAE J1127 Low Voltage Battery Cable type SGX or STX, or SAE J1128 Low Voltage Primary Cable type SXL, GXL, or TXL.

Circuit feeder wires shall be stranded copper or copper alloy conductors of a gauge rated to carry 125 percent of the maximum current for which the circuit is protected.

Conductor materials and stranding, other than copper, shall be permitted if all applicable requirements for physical, electrical, and environmental conditions are met as dictated by the end application.

The overall covering of conductors shall be moisture-resistant loom or braid that has a minimum continuous rating of 194°F (90°C) except where good engineering practice dictates special consideration for loom installations exposed to higher temperatures.

The overall covering of jacketed cables shall be moisture resistant and have a minimum continuous temperature rating of 194°F (90°C) except where good engineering practice dictates special consideration for cable installations exposed to higher temperatures.

CIRCUIT IDENTIFICATION

All wiring shall be uniquely identified by a circuit number and color coding. The identification shall be referenced on a wiring diagram. Wires less than 8 AWG shall be permanently identified at least every 2.0 inches (50.8 mm) by a circuit and function code. Cables equal to or larger than 8 AWG and wires included in jacketed cables shall be permanently identified by circuit number at all terminations.

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WIRING CONNECTIONS

All wiring connections and terminations shall use a method that provides a positive mechanical and electrical connection. The wiring connections and terminations shall be installed in accordance with the device manufacturer's instructions. Secondary locks shall be utilized on all connectors that are secondary lock capable.

Exterior exposed wire connectors shall be environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Seal plugs shall be installed in all unused sealed connector cavities. Wiring shall be kept straight in line with the connector for a minimum of 1 inch prior to the wiring entering the connector to prevent the stretching or gapping of the rear connector seal.

All ungrounded electrical terminals shall have covers or be in enclosures to protect against corrosion, excessive heat, excessive vibration, physical damage, liquid contaminants, dust, and other environmental factors.

Wiring splices shall be crimp-type, molded, or sonic weld type. Adhesive lined heat shrink tubing shall be used to seal and insulate splice joints.

WIRE AND CABLE ROUTING

Wiring routed through holes in sheet metal or castings shall have edges protected by an appropriately sized grommet.

Wiring shall be routed to avoid metal edges, screws, trim fasteners and abrasive surfaces. When such routings are not possible, protective devices (shields, caps, etc.) shall be used to protect the wires. When wires must cross a metal edge the edge shall be covered with a protective shield.

Wiring shall be routed to provide at least 3 inches (76.2 mm) clearance to moving parts, unless positively fastened or protected by a conduit.

Wire routings should avoid areas where temperatures exceed 180° F (82.2° C) and a minimum clearance of 6 inches (152.4 mm) shall be maintained from exhaust system components. Where compliance with this requirement is not possible, high temperature insulation and heat shields shall be utilized.

When wiring is routed between two members where relative motion can occur the wiring shall be secured to each member, with enough wire slack to allow flexing without damage to the wires.

Wiring to all circuit components (switches, relays, etc.) in exposed locations shall provide a drip loop to prevent moisture from being conducted into the device via the wire connection.

Routing wires into areas exposed to wheel wash shall be avoided if possible. When such routings cannot be avoided, adequate clipping or protective shields shall protect the wires from stone and ice damage.

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Wiring shall be secured in its intended location with appropriately sized bolt-on clips and nylon wire ties.

Electrical components designed to be removed for maintenance shall include a sufficient length of wire to allow the component to be pulled away from the mounting area for inspection and service work.

Bulkhead type connectors or sealed fittings shall be used to prevent the entry of liquid contaminants into weather tight enclosures.

SPARE WIRES

Wiring harnesses from/to major power and signal distribution areas of the apparatus shall include spare wires for future expansion of the system.

ELECTRICAL SYSTEM COMPONENTS

Serviceable components shall be readily accessible. Switches, relays, terminals and connectors shall have a dc rating of 125% of the maximum current for which the circuit is protected.

A distributed power and signal system shall be utilized on the apparatus to minimize power supply voltage drops. Power and signal distribution areas in the cab shall be concentrated in five (5) areas.

A lower cab power and signal distribution center shall be located in the center forward portion of the cab "dash". It shall be hinged and opened by unlocking two (2) top mounted, double hinged, lift and pull latches. This area shall contain relays and circuit breakers installed in a logical and serviceable fashion.

An additional lower cab power and signal distribution center shall be located below the officer's dash behind the kick plate.

An upper power and signal distribution area shall be located in the forward portion of the cab ceiling, above the engine tunnel. Components in this area shall be permanently labeled and easily accessible by opening a hinged cover.

A power and signal distribution area shall be located in the forward body module. Components in this area shall be permanently labeled and easily accessible.

A power and signal distribution area shall be located on the front of the forward body compartments. Components in these areas shall be permanently labeled and easily accessible.

All electrical components or devices installed in an exposed area on the outside of the cab or body shall be mounted in such a manner, or protected by a gasket, caulking or other means, so that moisture shall not accumulate in it.

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CORROSION PROTECTION

Externally exposed, non-plug type, electrical connections shall be given a hand applied or sprayed application of an industrial standard insulation coating with a minimum rating of 2100 volts per mil thickness. Insulation shall protect the connection from water induced electrical corrosion and accidental short circuiting. Should the connection be loosened or removed during the manufacturing process another coating shall be applied after it has been refastened or replaced.

MAIN BATTERY AND STARTER CIRCUITS

QW22-00-0110

BATTERY POWER BUSS

All positive cables from the batteries shall be connected directly to a battery positive buss bar located as close to the batteries as practical. The alternator shall be wired directly to the battery positive buss bar through the ammeter shunt, if one is provided.

ENGINE STARTER AND INTERLOCK CIRCUITS

The starter solenoid(s) shall be connected directly to the battery positive buss bar. An interlock shall be provided to prevent the operator from engaging the starter when the engine is running.

BATTERY GROUND BUSS AND SINGLE POINT GROUND SYSTEM

All negative (ground) cables from the batteries shall be connected directly to a battery negative buss bar located as close to the batteries as practical. Appropriately sized ground feeder cables shall be utilized to provide a low impedance ground path to the negative buss bar for all electrical devices on the apparatus.

APPARATUS GROUND BONDING

The battery negative buss bar shall be connected to the chassis frame. The cab, forward body, and body structures shall be electrically bonded to the vehicle frame with braided copper grounding straps.

EMI/RFI PROTECTION

QW22-00-0120

The apparatus electrical system and related devices shall have the ability to function in the severe electromagnetic environment typical of fire ground operations.

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EMI/RFI EMISSIONS

State-of-the-art electrical system design and components shall be utilized to ensure the suppression of radiated and conducted EMI (electromagnetic interference) and RFI (radio frequency interference) emissions that may cause communication and navigation radio-reception interference. The electrical system and related components shall comply with the applicable sections of J551/1 Performance Levels and Methods of Measurement of Electromagnetic Compatibility of Vehicles, Boats (up to 15 m), and Machines (16.6 Hz to 18 GHz)

EMI/RFI SUSCEPTIBILITY

The apparatus electrical system shall incorporate immune circuit designs, filtering, shielding and twisted-pair wiring to control EMI/RFI susceptibility. Particular attention shall be given to harness and cable routing to minimize the potential for conducted and radiated signal susceptibility.

Electrical / electronic equipment on the apparatus shall not be susceptible to radiated and conducted EMI/RFI emissions from on-board radio transmitter(s) and shall comply with the requirements of SAE J551-12 Vehicle Electromagnetic Immunity--On-Board Transmitter Simulation.

ELECTRICAL SYSTEM PERFORMANCE TESTING

An operational test shall be conducted to ensure that all installed electrical equipment is properly connected and is in working order. The apparatus alternator shall be tested with the total continuous electrical load applied and engine running up to the engine manufacturer's governed speed for a minimum of 2 hours. Additionally, all warning lights shall be run continuously during a three (3) hour minimum certification test (or at another time for not less than three (3) hours). Activation of the load management system (if furnished) shall be permitted during this test. An alarm sounded by excessive battery discharge, as detected by the low voltage warning system, or a system voltage of less than 11.8 V dc at the battery for more than 120 seconds, shall be considered a test failure.

CAB DASH AND INSTRUMENTS FOR 2013 EMISSIONS ENGINE

QW22-00-014A

A non-glare instrument panel, custom designed to accommodate the appropriate functions, shall be provided. Illumination shall be provided for controls, switches, instruction plates, gauges, and instruments necessary for the operation of the apparatus. The cab dash shall be forward slanted, and constructed of aluminum. Rocker switches that have integral lights shall be as follows when applicable: red indicator lights shall be provided for warning light and engine/mechanical functions, green indicator lights shall be provided for scene and auxiliary lighting and general functions; selection shall be at the manufacturer's discretion.

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A system shall be provided that interacts with the engine electronics and eliminates redundant senders and switches. The electronic engine gauges shall receive information on the SAE J1939 data link to improve reliability and gauge accuracy. Connectors shall be utilized for ease of service. The dial face shall be black with white lettering. The primary letters shall be in Imperial with the secondary, smaller letters in metric. The dial shall have international non-language symbols for the gauge function (except speedometer). Gauges shall have illumination with a monochrome LCD display located on the speedometer gauge. They shall also have a 250 degree dial sweep for greater definition of scale. SAE J1939 Faults and Warnings shall be displayed on the LED display.

DRIVER'S INSTRUMENTATION

The following individually mounted gauges shall be provided: (all inclusive gauge clusters not allowed, no exceptions)

Main Gauges

- 3" Speedometer: 0-85 mph with built-in LCD display
 - Speedometer Mode Switch: Allows operator to select menu items in the display screen
 - Speedometer Up Switch: Allows operator to scroll up through display menu items
 - Speedometer Down Switch: Allows operator to scroll down through display menu items
- 3" Tachometer: 0-4000 rpm

Satellite Gauges

- 2" Fuel Level: Empty – full with low level warning indicator
- 2" Voltmeter: 10-16 VDC
- 2" Coolant Temperature: 100-240 Degrees Fahrenheit
- 2: Engine Oil Pressure: 0-80 psi
- 2" Transmission Oil Temp: 100-320 Degrees Fahrenheit
- 2" Front Air Pressure: 0-150 psi
- 2" Rear Air Pressure: 0-150 psi
- 2" DEF Level: Empty – full with low level warning indicator

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DRIVER'S INDICATOR LIGHT MODULE

The following indicators shall be mounted in a removable modular panel in front of the steering column. The indicators shall be identified with universal ISO 2575 symbols where applicable and visible to the driver while seated. All applicable indicators in the modular panel shall automatically illuminate for 1 second upon activation of the ignition switch to verify operation:

Battery Switch "On" green indicator light

Ignition Switch "On" indicator

Check Transmission amber indicator light

Check Engine amber indicator light

Stop Engine (Engine Warning) red indicator light

High Exhaust Temperature (HEST) amber indicator light (if applicable)

Diesel Particulate Filter Regeneration (DPF) amber indicator light (if applicable)

Wait-to-Start amber indicator light (if applicable)

Malfunction Indicator Light (MIL) amber indicator light (if applicable)

ABS warning amber indicator light

ATC/ESC activated amber indicator light

Spring (Parking) Brake "On" red indicator light

High Beam "On" blue indicator light

Low air pressure red indicator light

Left Turn signal green indicator light

Right Turn signal green indicator light

General Warning red indicator light (if applicable)

DEF Level Indicator Light

AUDIBLE CAB ALARMS

Audible alarms shall be provided in the cab to alert the operator of conditions that require attention. The alarm device(s) shall be audible in the driving compartment and feature an adjustable volume control.

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An intermittent audible tone shall sound when the following conditions are present and the parking brake is disengaged:

Active Hazard Warning –

(Do Not Move Apparatus; Door Open, Tower Raised, Ladder Rack Down, etc.)

Seat Belt Warning

A steady audible tone shall sound when the following conditions are present:

Stop Engine (includes High Engine Temperature and Low Engine Oil Pressure)

Low Voltage

Engine Air Filter Restriction

Jackknife Warning (if applicable)

Tiller Cab Operator Not in Position (if applicable)

DRIVER'S AND OFFICER'S CONTROLS

The following rocker style control switches shall be identified and accessible to the driver while seated. Switches shall include integral indicator lights (where applicable) to advise that the switch has been energized and identification labels shall be illuminated for night driving.

Ignition switch with green indicator light

Engine Start switch

Headlight / Tail-Marker-ID light switch

Instrument Panel Dimmer control rheostat

The following controls shall be stalk mounted on the steering column and identified and visible to the driver while seated:

Turn Signal Control and 4-Way Hazard Warning switch

High-beam headlight switch

Windshield wiper control switch

Windshield washer control switch

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The following controls shall be identified and accessible to the driver while seated:

Parking (Spring) Brake Control

High Idle control switch

Other controls (as defined elsewhere in this specification)

The following controls shall be identified and accessible to both the driver and officer while seated.
Controls shall be identified and illuminated for night driving.

HVAC control panel

Other controls (as defined elsewhere in this specification)

EMERGENCY & WORK LIGHT SWITCH PANEL - DRIVER'S SIDE

QW22-00-015D

All emergency light and work area lighting control switches shall be mounted in a removable panel located in the overhead position on the driver's side of the cab. The light switches shall be "rocker" type with an internal indicator light (where applicable) to show when the switch is energized. All switches shall be properly identified by an illuminated label for night driving.

A master warning light switch shall be provided for emergency lighting.

A momentary clear warning light switch shall be provided for clear emergency lighting control that shall default on.

DOOR AJAR/HAZARD INDICATOR LIGHT (DO NOT MOVE APPARATUS)

QW22-00-0160

A Whelen "T0" series 2" round red flashing LED light with chrome flange shall illuminate automatically whenever the apparatus parking brake is not fully engaged and any of the following conditions exist:

- Any passenger or equipment compartment door is open.
- Any ladder or equipment rack is not in the stowed position.
- Stabilizer system is not in its stowed position.
- Powered light tower is extended.
- Pedestal cover is open.
- Any other device permanently attached to the apparatus is open, extended, or deployed in a manner that is likely to cause damage to the apparatus if the apparatus is moved.

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The hazard warning light shall be identified with a label that reads: “Do Not Move Apparatus When Light Is On.” The light shall be located on the ceiling between the driver and the officer.

ELECTRICAL WIRING REQUIREMENTS - INTELEX™ PLUS

QW 22-00-030A

The apparatus shall be equipped with an INTELEX™ PLUS management system for control of the electrical system devices, where applicable.

CIRCUIT PROTECTION

Circuit protection devices shall be utilized to protect each electrical circuit. All circuit protection devices shall be sized according to 125% of the anticipated load to prevent wire and component damage when subjected to extreme current overload.

SOLID STATE CIRCUIT PROTECTION

Intex power distribution modules shall utilize solid state output channels and feature fully protected high-side drivers (+12V) to protect wiring. High-side drivers shall provide overload protection, current limitation, transient protection, and replicate the function of an automatic reset circuit breaker. If output current exceeds the rated amperage, the output shall automatically turn off. After 30 seconds, the module shall attempt to re-energize the load. If the output is still overloaded, it shall remain off until the power is cycled. In the event of a communications loss with the vehicle’s control module, all outputs not controlling a moving device, such as a ladder rack, shall remain in their previous state until communication is restored or the power is cycled.

NON-SOLID STATE CIRCUIT PROTECTION

Circuit breakers shall be Type-I automatic reset (continuously resetting) and conform to SAE J553 or J258 unless operational requirements and/or safety concerns dictate Type-III manual reset type conforming to SAE J1625. Automotive-type fuses conforming to SAE J554, J1284, J1888 or J2077 shall be utilized when required to protect electronic equipment.

POWER CONTROL RELAYS AND SOLENOIDS

Power control relays and solenoids shall have a direct current (dc) rating of 125 percent of the anticipated current load.

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BUSSMANN MVEC RELAYS AND CIRCUIT PROTECTION

Manufactured as a hardened and weather tight module, the mVEC is rated at 200 Amps. The mVEC is configured to provide various OEM circuit protection and switching functions, using industry standard fuses, relays and breakers, with the status and control of each circuit accessible through J1939 CAN open messages. Each mVEC is rated at 200 Amps, with individual outputs rated up to 30 Amps. Waterproof to high pressure spraying (IP66 equivalent). The mVEC is designed and manufactured with robust features such as heavy-duty housing, silicon and Gortex gaskets, and protective conformal coated electronics, to operate in demanding vehicle environments such as those found in fire apparatus.

INFORMATION CENTER

QW22-00-0310

A 5" color display capable of displaying graphical images as well as text messages shall be located on the cab dash. The main display page shall include the date, time and ambient air temperature in Fahrenheit. Additional information pages shall be provided for the warning indications, not stowed indications, and open doors. The display shall be dimmable with a Rheostat control on the dash and shall have an override button on the control to dim to ten (10) percent.

APPARATUS STATUS INDICATORS AND AUDIBLE ALARMS

If a monitored "Not Stowed" or "Warning" condition is active, the corresponding status indicator shall flash. In addition to visual indicators, audible alarms shall sound when designated conditions activate the "Not Stowed" and "Warning" status indicators.

WARNING INDICATOR

A flashing red triangle symbol shall alert the vehicle occupants of an active "WARNING" condition. This is defined as a situation or status on the vehicle that is of high priority or "mission critical" nature. The flashing red triangle shall be displayed on the Information Center and dash gauge panel in front of the driver. The following are typical "Warning" (high priority) conditions:

HYDRAULIC FILTER	LOAD MANAGE	LOW AIR PSI
CAB NOT LOCKED	LOW VOLTAGE	JACK KNIFE
AIR RESTRICTION	ABS FAULT	TRAILER ABS

NOT STOWED INDICATOR

A flashing Not Stowed indicator shall alert the vehicle occupants of an active "Not Stowed" condition. This is defined as a situation or status on the vehicle that is not of high priority or "mission critical"

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nature, but requires attention before the vehicle is put in motion. The following are typical “Not Stowed” (not high priority) conditions:

AERIAL RAISED	DECK GUN RAISED	JACKS EXTENDED
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The following items are considered Not Stowed only when the parking brake is released.

LADDER UP	JACKS EXTENDED	Q2B TILTED
LIGHT TOWER UP	DECK GUN RAISED	DS TELE LIGHT UP
OUTRIGGERS	STEP DOWN	PS TELE LIGHT UP
DS HATCH OPEN	PS HATCH OPEN	

AUDIBLE ALARMS

The following conditions shall cause the audible alarm to sound “steady” (not an intermittent beep); signifying a “mission critical” condition exists that requires immediate attention.

STOP ENGINE	CAB NOT LATCHED	LOW VOLT
LOW AIR	ABS FAULT	
LOW COOLANT	LOW OIL PRESSURE	

Corresponding “Low Air”, “Stop Engine” visual indicators shall be located in the dash gauge panel in front of the driver.

The following conditions shall cause a chime alarm to sound “intermittently” (i.e., beep), once the parking brake is released, signifying a condition exists that may become “mission critical” if not quickly addressed.

ANY LIGHT NOT STOWED
ANY BODY DOOR OPEN
ANY CAB OR CREW CAB DOOR OPEN
PEDESTAL COVER OPEN

An audible alarm shall sound if any of the seat belts are not properly closed and the vehicle is going 5 mph or greater. The sound shall be different from all other audible alarms in the cab.

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OPEN DOORS / DEPLOYED EQUIPMENT RACKS / EXTENDED STEPS

When a cab or compartment door is open, a step is extended, or equipment (i.e., ladder) rack is deployed, the “DOORS” indicator shall flash. Pressing the corresponding button shall display an overhead graphical representation of the apparatus. This image depicts the open cab door(s), open compartment door(s), deployed equipment rack(s), and/or extended step(s). The chime alarm shall also sound when the parking brake is released.

AUTOMATED ELECTRICAL LOAD MANAGEMENT SYSTEM

QW22-00-320

The apparatus shall be equipped with an automated load management system. The load management system shall monitor battery voltage and activate the engine high idle system (provided NFPA interlocks have been established) before disabling any electrical loads. If engine high idle is not available or activation does not result in sufficient battery system voltage, individual electrical loads shall be automatically and sequentially deactivated until voltage returns to an acceptable level. Loads shall be sequentially reactivated to avoid a sudden large voltage demand on the system. Electrical loads defined in NFPA 1901 as “minimum continuous” shall not be subject to automatic load management. Load prioritization shall be independently field programmable by authorized users.

If the load management system becomes active, the “LOAD MANAGE” indicator shall illuminate on the “Warnings” page of the INTELEX™ PLUS cab mounted display.

LOAD SEQUENCER

QW22-00-0330

A sequential switching device shall automatically energize the specified optical warning devices to minimize potentially damaging voltage fluctuations due to the sudden addition or removal of large current demands on the electrical system. Upon activation of the “EMERGENCY MASTER” warning switch and provided the individual optical warning device switches are also activated, the following loads shall be activated (or deactivated) in 0.5 second intervals:

Front Light Bar

Side Light Bar (if applicable)

Front and Rear Flashing Lights

Side Warning

Rear Beacons

High Beam Headlight Flash

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QW22-00-0344

VEHICLE DATA RECORDER AND SEAT MONITOR DISPLAY

EXCEPTION: SBA200

Fire Research series ~~SBA300~~-A00 seat monitor display and vehicle data recorder kit shall be installed. The kit shall include a seat monitor display module, a vehicle data recorder, and cables.

The seat monitor display shall be programmable for up to thirteen (13) seats and have a seatbelt icon for each. An alarm silence button and LED indicators for power and data link status shall be located on the front of the seat monitor display.

The data recorder case shall be waterproof. It shall have inputs for monitored information from the vehicle J1939 CAN bus, independent sensors, seatbelt and seat occupied switches, outputs for audible alarms, and two-way FRC data link connectors.

The vehicle data recorder shall record the following data once per second and store it in a 48 hour loop:

Vehicle Speed

Acceleration

Deceleration

Engine Speed

Engine Throttle Position

ABS Event

Seat Occupied Status

Seat Belt Status

Master Optical Warning Device Switch

Time

Date

The vehicle data recorder shall record the following data once per minute and have memory to store it for 100 engine hours:

Maximum Vehicle Speed

Maximum Acceleration

Maximum Deceleration

Maximum Engine Speed

Maximum Engine Throttle Position

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ABS Event

Seat Occupied with Seat Belt Unbuckled

Master Optical Warning Device Switch

Time

Date

The oldest data shall be erased first when memory capacity is reached. All data shall be password protected and up loadable from the vehicle data recorder to a computer running FRC HAWK data management software. The HAWK software shall store, manage, provide graphic displays and produce formatted reports of the vehicle data recorder data.

An audible alarm shall sound if any of the seat belts are not properly closed and the vehicle is going 5 mph or greater. The sound shall be different from all other audible alarms in the cab.

ELECTRICAL SYSTEM DIAGNOSTICS

QW22-00-0350

The apparatus shall feature on-board electrical system diagnostics and provision for off-board diagnostic service equipment.

ON-BOARD DIAGNOSTICS

On-board diagnostic indicators shall be provided to support rapid troubleshooting of the INTELEX™ PLUS based electrical power and signal system. The input and output status of each INTELEX™ PLUS system module shall be easily determined through easy to use display pages.

Switches shall be provided in the cab to allow the operator or service personnel to obtain On-Board diagnostic information from the ABS system and Engine Controller.

A troubleshooting guide shall be provided with the vehicle to assist with interpretation of the diagnostic signals.

OFF-BOARD DIAGNOSTIC PROVISION

An interface port shall be provided for service access to the INTELEX™ PLUS data bus. The diagnostic port shall be mounted inside the cab on the driver side in a location that is accessible from the ground.

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POWER STUDS (OVERHEAD SWITCH PANEL)

QW22-00-0510

Four (4) studs shall be provided in the overhead switch panel to provide a 12 volt feed. The studs shall consist of a 12 volt direct stud, switched battery stud, switched ignition stud and grounding stud.

POWER STUDS (CAB DASH)

QW22-00-5020

Four (4) studs shall be provided in the cab dash area to provide a 12 volt feed. The studs shall consist of a 12 volt direct stud, switched battery stud, switched ignition stud and grounding stud.

BUSS BAR (UNDER OFFICER'S SEAT)

QW22-00-0530

A four (4) stud 30 Amp buss bar with protective cover shall be provided under the officer's seat to provide a 12 volt feed. The studs shall consist of a 12 volt direct stud, switched battery stud, switched ignition stud and grounding stud.

12 VOLT PLUG(S) AND RECEPTACLE(S)

QW22-03-1400

One (1) 12 volt power plug receptacle(s) and cover(s) shall be provided and shall be wired battery direct. The plug and receptacle are made from corrosion resistant marine grade materials. The plug locks into the receptacle providing a positive moisture proof connection.

Location shall be determined at the pre-construction conference.

OUTLET BOX

QW22-00-14SD

A fabricated 0.090" aluminum enclosed box that follows the contour of the engine tunnel shall be provided aft of the officer's seat on the side of the engine tunnel. It shall be covered with black LINE-X to match the color of the engine tunnel. This outlet box shall be capable of holding two (2) 12 volt power points and one (1) 120 volt receptacle

12 VOLT PLUG(S) AND RECEPTACLE(S)

QW70-05-1920

Two (2) 12 volt power plug receptacles and covers shall be provided and shall be wired battery direct. The plug and receptacle are made from corrosion resistant marine grade materials. The plug locks into the receptacle providing a positive moisture proof connection.

Location of the 12V Power Points shall be in outlet box aft of officer's seat

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120 VOLT SHORELINE POWERED RECEPTACLE IN CAB INTERIOR

One (1) 120-volt, 20 amp, 3-wire receptacle shall be provided in the cab interior in accordance with NFPA guidelines. A brushed stainless steel cover plate shall be provided to protect the receptacle. The receptacle shall be powered by the shore power inlet and labeled accordingly.

The receptacle shall be located in outlet box aft of officer's seat

NEMA Rating: 5-20R (20 Amp) Non-Twist-Lock, Single.

USB CHARGER PORT

QW22-03-14US

There shall be three (3) USB charging ports (Duplex Ports) and to have 2.4 amp charge rate.

One (1) shall be located on the dash near the driver's side,

One (1) shall be located on the dash near the officer's side,

One (1) located on the rear of the engine tunnel.

RADIO ANTENNA

QW22-0A-5120

Four (4) radio antennas supplied by the fire department shall be mounted on the cab roof. The antenna mounting base shall be NMO type mounts designed for use with the thickness of the material used for the roof of the apparatus (Model MATM). All factory installed antenna mounts shall have an antenna or an antenna mount rain cap installed to protect the antenna mount from damage.

The location of the antennas on the roof of the apparatus shall be during the pre-construction conference.

~~The manufacturer shall provide a detailed diagram on the apparatus cab area including the layout of the roof area, the interior consoles, seats and interior compartments. The diagram of the roof shall include the location of the structural members, light fixtures and interior head liners. A means of access shall be provided to the inside location of each antenna mounting location selected by the radio communications personnel. Head liner removal shall not be required to service the underside of antenna mounts.~~

EXCEPTION

~~The antenna mounts shall be provided with twenty-five (25) feet of coaxial cable installed. The coaxial cable shall be RG58/U with 95% braided shield minimum. The coaxial cable shall have a solid cooper center conductor with a Polyethylene or Teflon dielectric.~~

The antenna leads shall terminate in the areas determined during the pre-construction conference. Any excess cable shall be secured in an accessible location.

QW22-0A-516B

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DASH CUT OUT

QW22-0A-516X

The cab dash shall be manufactured with cutouts and mounting ears for two (2) fire department provided radios. The radio brands and radio model numbers, as well as their locations in the dash, shall be determined at the pre-construction conference.

INTERCOM SYSTEM

QW22-0B-0015

A Firecom digital 5100D intercom system shall be provided and installed on the apparatus. This system shall provide for in cab and on-scene communications for the crew. The system shall have a touch pad with digital logic control and LED indicators. The intercom base unit shall be mounted flush within the dash. The exact location will be determined at the pre-construction conference.

Headset charging cords and yellow NFPA compliant headset hanger hooks shall be provided for the driver, officer, and three (3) crew positions. All headsets shall be wireless and should be wired to stay on at all times so there is no delay when starting up the vehicle. Headsets shall provide a noise reduction of 24 dB and a red push-to-talk button that activates radio transmission. The microphone shall always be live for intercom communications.

The following components shall be supplied with this system:

- One (1) 5100D Intercom Unit
- One (1) Multi Channel Base
- Two (2) Single Wireless Base Stations
- One (1) UHW-505 under helmet, radio transmit, wireless headsets
- Three (3) FHW-505 over the head, radio transmit, wireless headsets
- All necessary wiring and headset charging drops

TWO (2)

EXCEPTION:
UHW505

RADIO INTERFACE CABLE

QW22-UB-0400

The intercom shall interface with the mobile radio utilizing a mobile radio interface cable. The cable shall be a minimum of 4 feet long. The cable shall have a connector for the intercom and a connector meeting the requirements of the mobile radio to be determined at the pre-construction conference.

REAR VIEW CAMERA SYSTEM

QW22-0C-3310

A Rosco rear view color camera system, model STSK7165, shall be provided and installed. The system shall consist of the following items:

- One (1) STSM205 7" LCD monitor, 7.2" wide x 4.8" high x 1.1" deep, with remote control.
- One (1) STSC101 color camera with microphone, 120 degree lens and 18 infrared LEDs.

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- Two (2) STSC109B side color cameras with microphone, 150 degree lens and infrared night vision.
- One (1) 65 foot cable
- One (1) STSH301 Harness
- Two (2) STSH304 Harnesses
- Mounting brackets and hardware

One camera shall be mounted on the rear upper bulkhead near center to provide a rear view. The other cameras shall be mounted on the each side of the cab to provide side blind spot viewing.

One (1) Camera Monitor Shall be Hung from the Overhead Console.

BATTERIES

QW22-10-0700

Six (6) 12V Group 31 950 CCA batteries shall be installed three each side of the cab under the rear entrance way.

Heavy-duty battery cables shall be provided to maximize power available to the electrical system.

JUMPER CABLE STUDS

QW22-10-5200

A pair of jumper cable studs with color coded covers shall be provided under the driver's side battery storage area.

BATTERY AND ELECTRICAL COMPONENT STORAGE AREAS

QW22-11-060S

Battery and electrical component storage areas shall be constructed of stainless steel with structural steel tubes at the corner mounting points and shall be located one (1) each side mounted on the vehicle frame. They shall be well ventilated and enclosed to protect against road splash and debris. Suitable provisions shall be provided for drainage.

The batteries shall be held firmly in place by providing a full frame type top clamp which encloses the battery set on all four (4) upper corner sides. The one piece clamp shall be fabricated of 3/4" angles and be held in place by a minimum of two (2) "J" shaped clamping bolts retained within the battery box to prevent retrieval from underside the apparatus. Battery inspection shall be provided through latched drop down doors in the lower step area of the crew cab.

BATTERY MATS

QW22-11-5100

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The batteries shall be installed on a non-corrosive Turtle Tile mat.

DISCONNECT SWITCH

QW22-15-1400

A master load disconnect switch shall be provided between the battery positive buss bar and the remainder of the switched battery electrical loads on the apparatus. A green "battery on" pilot light that is visible from the driver's position shall be provided.

One (1) single battery system switch mounted near the driver's side front entrance in a location so it may be turned off by a person standing on the ground outside the vehicle. It shall have the capacity to handle 350 amps of continuous power.

ADDITIONAL DISCONNECT SWITCH

QW22-15-140X

An additional master disconnect switch shall be provided between the batteries and the battery positive buss bar to facilitate ease of maintenance. This disconnect shall be located near the batteries and shall be accessible when the cab is tilted.

BATTERY CHARGER

QW22-15-3750

There shall be one (1) Kussmaul model #091-187-12-REMOTE "Auto Charge 1200" single battery charger system installed in the vehicle's electrical system. The charger shall be fully automatic and shall maintain the truck batteries at a full charge level when connected to a 120 VAC source. Remote voltage sensing shall be provided to compensate the charger output for the voltage drop in the charging wires. A remote mounted indicator shall be provided which shall contain one bar graph to display the condition of the batteries.

The charger and indicator shall be located at the pre-construction conference.

KUSSMAUL AUTOMATIC AIR PUMP

QW22-15-4100

The bid shall include optional pricing for installing a Kussmaul brand 120 volt A/C air compressor to ensure the air brake system is properly pressurized for immediate response of the unit. A pressure switch shall regulate operation and shall automatically sense low air pressure in the brake system and restore the proper pressure. The unit shall have no interference with the vehicle mounted air compressor.

An auto drain shall be installed on the outlet side of the air compressor and shall automatically purge water from the air discharge output every time the compressor cycles off via a 120 volt solenoid.

The Kussmaul air compressor model number and installation specifics shall be provided with the bid.

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BATTERY CHARGER/AIR COMPRESSOR COVER

QW22-15-5000

A smooth aluminum cover shall be provided over the battery charger/air compressor. The outside finish shall match the cab interior finish.

120 VOLT SHORELINE POWERED RECEPTACLE(S) IN CAB INTERIOR

QW70-05-1925

One (1) 120-volt, 20 amp, 3-wire receptacle shall be provided in the cab interior in accordance with NFPA guidelines. A brushed stainless steel cover plate shall be provided to protect the receptacle. The receptacle shall be powered by the shorepower inlet and labeled accordingly.

A plug and cable assembly shall be installed, connecting the battery charger/compressor to the receptacle.

The receptacle shall be located near the battery charger or compressor.

NEMA Rating: 5-20R (20 Amp) Non-Twist-Lock, Single.

AUTO EJECT PLUG

QW22-15-5500

A Kussmaul 20 Amp, 120 VAC "Super Auto Eject" shoreline power connector shall be provided for the battery charger. The shoreline power connector shall be provided with a spring loaded cover to prevent water from entering when the shoreline is not connected. A label shall be permanently affixed at the power inlet that indicates the line voltage in volts and the current rating in amps.

The Kussmaul Super Auto Eject Plug shall be located in the driver's door step well.

QW22-20-5820

UPPER RAISED BEZEL SURROUNDS, WITH PANELS

QW22-90-0025

A custom raised and chrome plated bezel shall be installed on the front face of the cab, on each side of the front grille. Housed within each bezel shall be a removable panel, painted job color. The removable panel shall provide service access to the forward side, firewall mounted electrical connections and wiring harness.

LOWER RAISED BEZEL SURROUNDS, WITH PANELS

QW22-90-0035

A custom raised and chrome plated bezel shall be installed on the front face of the cab, on each side of the front grille. Housed within each bezel shall be a removable panel, painted job color. The removable panel shall provide service access to the forward side, firewall mounted electrical connections and wiring harness.

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HEADLIGHTS

QW22-90-004J

Front headlights shall be mounted on the front cab face to the left and right of the engine cooling intake grille. The headlights shall be quad type, rectangular Truck-Lite model 27640C/27645C 12-volt LED with bright finished trim rings and bezels. The low beam headlights shall be located at the outer position.

The headlights shall be in the middle position.

QW22-90-004X

FRONT DIRECTIONAL DUAL LIGHT BEZEL

QW22-90-007A

The front directional lights shall be mounted in a chrome plated dual light bezel located on each side of the cab front face. The dual light bezel shall match the headlight housing.

The front directional light bezels shall be in the uppermost position.

FRONT DIRECTIONAL LIGHTS

QW22-90-008G

There shall be one (1) Whelen M6T LED amber arrow directional signal light installed on each side of the cab front face. The light shall have an amber arrow shape with black background and shall be provided with a "flash" pattern; a "sweep" pattern shall not be allowed. Lens color shall be amber.

ADDITIONAL FRONT WARNING LIGHT DUAL LIGHT BEZELS

QW22-90-0095

An additional pair of bright finished dual light bezels shall be provided for warning lights. The additional headlight bezel shall be located in the lowest position.

QW22-90-009A

LIGHTS

QW22-90-0210

Exterior cab lighting shall meet or exceed Federal Department of Transportation, Federal Motor Vehicle Safety Standards and any National Fire Protection Association requirements in effect at the time of proposal.

Five (5) Weldon 9186-1500-20, amber LED type clearance and identification lights shall be surface mounted across the top leading edge of the cab roof.

A TecNiq S34 amber LED marker light shall be recess mounted in a rubber sealing grommet placed in the lower side of the front cowl, on each side of the cab. The light body shall be urethane filled to ensure against moisture intrusion. These cowl mounted lights shall have 100,000 hour life and shall carry a manufacturers 10 year warranty.

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Seven (7) TecNiq S34, red LED marker and clearance lights shall be installed at the rear of the body. The three light identification cluster shall be surface mounted on the rear step vertical flange. Two lights shall be placed at each lower rear body corner, facing the side. Two lights shall be placed in the upper rear body corners, facing the rear.

TURN/MARKER LIGHTS

QW22-90-030L

One (1) Truck-Lite model 60115Y LED, amber turn/marker light shall be provided and installed forward of the rear axle on each side of the vehicle. The lights shall have black flanges and shall be installed under the body with a stainless steel bracket.

REAR MARKER LIGHTS

QW22-90-0320

A Britax long stemmed "LED" dual faced #L427 marker light shall be placed at each rear corner of the body. The front lens shall be amber; the rear lens shall be red.

LICENSE PLATE LED LIGHT & BRACKET

QW22-90-0400

A stainless steel license plate bracket, painted black, shall be installed on the rear of the vehicle on the left hand side under the tailboard area. Mounted on the license plate bracket shall be a chrome light bracket containing a 12 volt LED lamp that shall illuminate the license plate.

D.O.T. REFLECTORS

QW22-90-0500

Reflectors shall be placed on the cab and body as required by Federal standards. An amber reflector, Signal Stat, model 32ADB, shall be placed on each side of the cab. Four (4) Signal Stat model 32DB red reflectors shall be located on the rear face and sides of the body. The reflectors shall be rectangular in shape.

SIDE DIRECTIONAL LIGHTS

QW23-02-9300

Britax model #L428, short rubber side LED directional lights shall be provided in addition to the front turn signals. One (1) light shall be mounted just above the front fender on each side of the cab. Lamp shall have an amber plastic lens at front and a red lens facing rear.

BRAKE/TURN/BACKUP/WARNING LIGHTS CONFIGURATION

QW23-03-0010

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The brake, turn, backup and warning lights shall be located at the rear of the apparatus. Each light shall be mounted horizontally in a vertical configuration, one light atop the other.

The order of lights shall be as follows:

Top: turn signal

Second from top: tail/stop

Third from top: back-up

Bottom: warning

BRAKE/TAIL LIGHTS

QW23-03-BWL1

Two (2) Whelen M6 series LED red brake/tail lights, model M6BTT, with red outer lens, shall be mounted at the rear of the apparatus, one on each side. All brakes lights shall be programmed for "steady burn" operation in compliance with FMVSS No. 108.

TURN SIGNAL LIGHTS

QW23-03-TWL8

Two (2) Whelen M6 series Super-LED amber turn lights, model M6T, with amber outer lens, shall be mounted at the rear of the apparatus, one on each side. They shall be provided with a "flash" pattern; a "sweep" pattern shall not be allowed.

BACK UP LIGHTS

QW23-03-VWL8

Two (2) Whelen M6 series clear Super-LED back up lights, model M6BUW, shall be mounted at the rear of the apparatus, one on each side.

BEZELS

QW23-03-XWB8

Three (3) pair of Whelen #M6FC chrome plated bezels shall be provided for the M6 series rear stop, turn, and backup lights.

BACK-UP LIGHT SWITCH

QW23-03-XY08

There shall be a switch with cover located on the rear of the body that shall activate the back-up lights which can be used as scene lighting. Lights will only operate when the chassis emergency brake is engaged.

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REAR MARKER LIGHTS

QW22-90-0320

A Britax long stemmed "LED" dual faced #L427 marker light shall be placed at each rear corner of the body. The front lens shall be amber; the rear lens shall be red.

REAR SCENE LIGHTS

QW71-KW-A6ZD

Two (2) Whelen M6ZC Super-LED scene lights with 12 diodes and 8-32 degree optics and a chrome plated flange ring shall be installed on the upper rear of the apparatus, one on each side. These lights shall be switched from the cab dash.

CAB STEP LIGHTS

QW23-05-0035

Four (4) Whelen model TOCACCCR, LED step lights shall be provided, one (1) at each cab entrance door.

The cab step lights shall be activated with the cab door open switch.

BODY STEP LIGHTS

QW23-05-0410

The cab step lights shall be activated with the cab door open switch. The step lights on the body shall be activated with the parking brake in conjunction with the marker lights.

There shall be one (1) TecNiq Eon LED strip light center mounted under the turntable, and one (1) centered on the back of the cab wall along the roof edge, to illuminate the top area of the forward body section.

There shall be two (2) TecNiq Eon LED strip lights on the top of the intake/gauge panels on the forward body, one each side of the body, to illuminate the panels and the step at their bases.

There shall be one (1) TecNiq Eon LED step light mounted on the pedestal to illuminate the area around the pedestal. This light shall be activated with the aerial PTO.

There shall be two (2) TecNiq Eon LED lights mounted, one on each side of the body, in the rear face of the compartment aft of the rear jacks. These lights shall illuminate the top step of each access ladder.

There shall be two (2) TecNiq Eon LED strip lights, one on each side of the body, mounted to the underside of the top step of each access ladder to illuminate the lower steps.

There shall be two (2) TecNiq Eon LED strip lights on the boom support to illuminate the decking. The lights shall be installed near the top of the support, one facing forward, one facing rearward.

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There shall be two (2) TecNiq Eon LED strip lights installed to illuminate the interior work area of the platform.

There shall be four (4) TecNiq Eon LED lights with chrome bezels installed on the outside of the platform, facing downward to illuminate the step surface. There shall be two (2) lights on each side of the platform.

GROUND LIGHTS

QW23-05-2111

Four (4) weatherproof TecNiq #E10 LED ground lights shall be provided underneath the cab, per NFPA requirements.

The cab ground lights shall be activated with the cab door open switch.

Eight (8) weatherproof TecNiq #E10 LED ground lights shall be provided underneath the body, per NFPA requirements. Two (2) shall be located under the rear body access ladders, one on each side and two (2) shall be under the rear of the body. Two (2) shall be located under the forward body, one on each side. In addition to the standard, NFPA required ground lights, two (2) weatherproof TecNiq #E10 LED ground lights shall be provided underneath the vehicle under the compartments as determined at the pre-construction conference.

QW23-05-2171

QW23-05-2181

The ground lights on the body shall be activated with the parking brake in conjunction with the marker lights.

ENGINE COMPARTMENT WORK LIGHT

QW23-05-302A

Two (2) Truck-Lite 4094SW engine compartment work lights shall be provided. The lights shall illuminate the fluid dip sticks. The lights shall activate with the cab tilt or with the integral switch.

INTERIOR CAB DOME LIGHTS

QW23-11-1010

Four (4) Weldon 8080 series red/clear LED lights with push button shall be mounted in the cab ceiling. Two (2) in front (driver & officer) and two (2) in the crew cab. The red light shall be in the forward position. All lights shall be controlled by a switch by the lens and shall have a black bezel.

AUTOMATIC DOOR SWITCHES

Automatic door switches shall be provided for the white cab dome lights.

QW23-11-1410

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CREW CAB COURTESY LIGHTS

QW23-11-2870

Two (2) TecNiq Dragon D14 red LED courtesy lights shall be located at the rear of the engine tunnel, evenly spaced on the vertical flange, one each side, to illuminate the crew cab floor. The light shall include a black flange. It shall activate with the marker light circuit.

CAB DOOR INTERIOR LIGHTS

QW23-11-292M

Four (4) Whelen model OSA00FCR flashing amber LED lights in chrome flanges shall be installed on the interior of all cab entrance doors, above the door seal in the lower outboard corner.

EXTERIOR COMPARTMENT LIGHT - LED STRIP(S)

QW 23-25-0130

Four (4) exterior compartment(s) shall have a ROM LED lighting strip installed. The lighting strip shall be mounted horizontally on the ceiling next to the door framing in all specified body compartments. The LED lights shall be mounted in an anodized aluminum track. A switch, installed in the door frame, shall be used to activate light. Compartments to be determined at the pre-construction conference.

EXTERIOR COMPARTMENT LIGHT - LED STRIP

QW23-25-0140

One (1) exterior compartment(s) shall have a ROM LED lighting strip installed in the forward body module compartment. The full height lighting strip shall be mounted vertically along the right side of the door framing (standing outside, facing the inside of the compartment) in all specified body compartments. The LED lights shall be mounted in an anodized aluminum track. A switch, installed in the door frame, shall be used to activate light.

EXTERIOR COMPARTMENT LIGHTS - (2) LED STRIP(S)

QW23-25-0150

Six (6) exterior compartment(s) shall have a ROM LED lighting strip installed on both sides of the door. The lighting strips shall be mounted vertically along both sides of the door framing in all specified body compartments. The LED lights shall be mounted in an anodized aluminum track. A switch, installed in the door frame, shall be used to activate the lights. Compartments to be determined at the pre-construction conference.

LIGHTBAR

QW24-10-WFG4

A Whelen Edge® Ultra Freedom™ IV LC series LED 72" lightbar shall be provided on the cab roof. Six (6) red Linear Super-LED® lightheads and six (6) white Linear Super-LED® lightheads shall be located

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on the forward face and there shall be a red Linear Super-LED® light head in each of the four (4) corners. The lens shall be clear.

The Whelen lightbar shall be mounted using a 1.5" high mount, model MKEZ7.

EXCEPTION: 21.5"

SIDE LIGHTBARS

QW24-10-WFE6

Two (2) Whelen Mini Edge Freedom IV series LED 24" lightbars shall be provided on each side of the cab roof centered between the cab doors. The lenses shall be clear with 3 red flashing LED modules and 1 white flashing led module installed in each lightbar. The white warning lights shall be controlled by a switch in the cab and disables when the parking brake is set.

UPPER REAR WARNING LIGHTS

QW24-20-WLL2

Two (2) Whelen model L315F Super-LED® red beacons with clear lens shall be provided on the upper rear of the apparatus.

EXCEPTION:
Model number

WARNING LIGHTS

QW24-30-WLM6

Sixteen (16) Whelen model M6RC red Super-LED® light(s) with chrome plated flange(s) and clear lens(es) shall be provided on the apparatus. The flash pattern of the light(s) shall be Triple Flash, also known as Comet Flash.

CAB COWL LIGHTS

QW24-35-0020

Two (2) Whelen 50R03ZCR red LED lights with clear lens and 5TSMAC chrome flange shall be provided on the cab cowl, one each side. The flash pattern of the lights shall be Triple Flash, also known as Comet Flash.

The cowl lights shall be located on both of the cab cowls with the lights mounted approximately in-line with the middle light position on the front of the cab, at approximately 45 degrees.

Location of each perimeter warning light shall be:

QW24-3L-0100

Zone A Upper:

Whelen 72" Front light bars

Zone A lower:

M6 Red Warning lights inboard of turn signals (2)

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M6 Red Warning lights located: lower knock-out panel (4)

Zone B/D lower:

500 Red Warning lights on cab cowl (2)

M6 Red Warning lights on sides of bumper (2)

M6 Red Warning lights on side of cab, rear of axle center, by crew door hinge (2)

M6 Red Warning lights on body fender aft of tandems (2)

M6 Red Warning lights on body below LS5 and RS5 compartments (2)

Zone C upper:

Whelen Rear beacons (2)

Zone C lower:

M6 Red Warning lights below the backup lights (2)

TRAFFIC ADVISOR™

QW24-80-WLL2

A Whelen TADP8, LINZ6™ Super-LED® Dominator™ Plus series Traffic Advisor™ shall be provided. The light bar shall be 30.36" long and have eight (8) Super-LED® lamps. It shall be mounted in an extruded aluminum housing. The lights shall be controlled by a TADCTL1 controller mounted in the cab.

The control head for the traffic arrow shall be mounted on the top center of the dash. The Traffic Advisor™ shall be wired battery switched.

QW24-81-CTX6

The traffic advisor shall be mounted on top of the body, at the rear. A guard shall be provided to protect the traffic advisor.

AUDIBLE WARNING DEVICES

QW25-00-0100

One (1) automotive electric horn controlled by the steering wheel horn button shall be provided.

BACKUP ALARM

QW25-01-0100

One (1) Preco Model LDA-50 backup alarm shall be provided and activated when the vehicle transmission is placed in reverse. Alarm output shall be a minimum of 97 DBA.

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DUAL AIR HORNS

QW26-00-003A

Two (2) Grover Stuttertone chrome air horns shall be furnished, one on each side. A pressure protection valve shall be installed in-line to prevent loss of all air from the vehicle air brake system. The air horns shall range from 18" to 24" in length and shall be as long as possible.

AIR HORN DUAL LANYARD

QW26-00-0310

The air horn(s) shall be activated by two lanyard pull cords, one for the officer and one for the driver, terminating into one control valve, located between the driver and officer.

AIR SHUT OFF VALVE

QW26-00-0820

An air shut off valve shall be provided in the feed line to the air horns, under the dash on the driver's side.

WHELEN SIREN

QW26-10-7410

A Whelen model 295SLSA1 electronic siren shall be provided in the cab dash. The siren has a selectable output of 100 or 200 Watts. The microphone shall be hard-wired.

The siren head shall be wired battery switched. Auxiliary activation switches shall only be active when the emergency master and ignition are activated.

The location of the siren mic clip shall be determined at the final inspection.

SIREN SPEAKERS

QW26-11-FE1G

Two (2) Federal Signal Model ES100 compact 100 watt speakers shall be provided and recess mounted in the front bumper. There shall be a speaker located one (1) each side of the bumper.

MECHANICAL SIREN

QW26-15-4500

A Federal Signal Model Q2B® siren with chrome plated housing shall be recessed mounted in the front bumper extension with front and vane grille exposed. There shall be an electric brake control installed in the cab, at the driver's switch panel, properly labeled.

The siren activation switches shall only be active when the emergency master is activated.

The Q2B® siren shall be mounted flush in the center of the bumper with a chrome plated or stainless steel guard to protect the exposed portion of the siren from damage.

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QW26-15-5980

Two (2) Linemaster® Model 491 momentary foot operated switch(es) to activate the mechanical Q2B® siren shall be installed on the toe board of the cab floor. The foot switch shall not be deactivated when the parking brake is set. A foot switch shall be located on the driver's side, outboard of the steering column and on the officer's side floor, inboard position.

ADDITIONAL Q2B® BRAKE ROCKER SWITCH

QW26-15-6010

An additional siren brake rocker switch shall be provided to allow easy access for the officer.

Q2B DISCONNECT

QW26-15-6025

A master switch for the Federal Signal Q2B® siren shall be provided under the driver's side dash. Activation of the master switch shall remove all power to the solenoid.

FOOT SWITCH BRACKET

QW26-15-7130

An aluminum tread plate angle panel shall be installed to hold a single foot switch shall be installed on the officer's side.

STAINLESS STEEL BODY CONSTRUCTION

QW49-00-0100

The body and compartments shall be constructed of heavy duty 3CR12 stainless steel. The compartments shall be a "sweep out" design with the floor higher than the door sill. The compartment floors shall be a minimum of 3.5 mm 3CR12 stainless steel. All compartment seams shall be caulked with gray adhesive/sealant. Each compartment shall be rated for 500 lbs. of storage. False bulkhead panels shall be provided on the inside of the rearward wall of the compartment aft the rear wheels and rear stabilizers, and also the compartment aft of the access ladder, to cover and protect all electrical wiring and components. This also provides a clean interior for equipment mounting. These panels shall be removable. Removable service panels shall be placed within each of the false bulkhead panels. Door frames on compartments with hinged doors shall be fabricated by flanging the door opening edges inward 1.88" and bending out again .75" to form an angle.

ALUMINUM TREAD PLATE

A bright aluminum tread plate cover shall be installed over the side compartments. The cover shall not form the compartment top but shall be an overlay. The side edge of the cover shall have a 45 degree outward bend. The forward face of the side compartments shall be covered with bright aluminum tread

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plate overlays. All body components covered with aluminum tread plate overlays shall be coated with an anti-corrosion compound prior to installation. All tread plate shall be secured with threaded fasteners.

BODY MOUNTING SUBSTRUCURE

QW49-00-0020

The body compartments shall be bolted directly to spacer brackets welded to the aerial torque box. They shall be bolted through the back wall of the compartments in 15 places (7 on Driver's side and 8 on Officer's side) along the length of the body. In addition, the compartments in front of the rear wheels, behind the rear Jack assemblies, and behind the rear access ladders shall be supported by heavy 3" x 3" x 0.38" gusseted angle L-brackets (1 under front and 2 under both rear compartments- each side). The brackets shall be bolted directly to the chassis frame. The body shall also be bolted to the chassis frame at the front and rear of the fender area through gusseted 0.38" formed steel plates (2 each side). The area inside the fender area shall be heavily reinforced to support the weight of the body and additional equipment.

YELLOW PERIMETER MARKING

QW49-00-029A

In accordance with NFPA 1901 chapter 15.7.1.6, the perimeter of all horizontal walking surfaces on the top of the body shall be marked near the outside edge with a one-inch wide safety yellow line to delineate the designated standing or walking surface area.

LEFT SIDE COMPARTMENTS

QW49-00-1015

The left hand side compartments of the main body shall be made of stainless steel. The compartmentation shall consist of one (1) compartment ahead of the rear wheels, one (1) low height upper compartment above the forward rear wheels, one (1) full height upper compartment above the aft rear wheels, one (1) full height compartment behind the rear wheels and rear stabilizer, and one (1) compartment aft of the access ladder. All compartments shall have hinged doors.

The compartment ahead of the rear wheels and aft of the superstructure, shall have a doorframe to doorframe dimension of 35.25" wide x 40.00" high. The clear door opening shall be 31.25" wide x 36.00" high. The usable compartment space shall be 39.00" wide x 41.25" high x 16.50" deep. This compartment shall have vertically hinged double doors.

The low height upper compartment above the forward rear wheels shall have a doorframe to doorframe dimension of 55.25" wide x 13.75" high. The clear door opening shall be 51.75" wide x 10.25" high. The usable compartment space shall be 55.00" wide x 15.00" high x 23.50" deep. This compartment shall have a horizontally hinged lift-up door.

The full height upper compartment above the aft rear wheels shall have a doorframe to doorframe dimension of 51.50" wide x 28.75" high. The clear door opening shall be 47.50" wide x 24.75" high. The

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usable compartment space shall be 55.50" wide x 30.00" high x 23.50" deep. This compartment shall have vertically hinged double doors and shall be transverse above the torque box.

The full height compartment behind the rear wheels and the rear stabilizers shall have a doorframe to doorframe dimension of 57.50" wide x 52.00" high. The clear door opening shall be 53.50" wide x 48.00" high. The usable compartment space shall be 59.25" wide x 53.25" high x 23.50" deep. This compartment shall have vertically hinged double doors and shall be transverse above the torque box.

The compartment behind the access ladders shall have a doorframe to doorframe dimension of 37.50" wide x 32.00" high. The clear door opening shall be 33.50" wide x 28.00" high. The usable compartment space shall be 38.50" wide x 33.25" high x 23.50" deep. This compartment shall have vertically hinged double doors.

RIGHT SIDE COMPARTMENTS

QW49-00-5015

The right hand side compartments of the main body shall be made of stainless steel. The compartmentation shall consist of one (1) compartment ahead of the rear wheels, one (1) low height upper compartment above the forward rear wheels, one (1) full height upper compartment above the aft rear wheels, one (1) full height compartment behind the rear wheels and rear stabilizer, and one (1) compartment aft of the access ladder. All compartments shall have hinged doors.

The compartment ahead of the rear wheels and aft of the superstructure, shall have a doorframe to doorframe dimension of 35.25" wide x 40.00" high. The clear door opening shall be 31.25" wide x 36.00" high. The usable compartment space shall be 39.00" wide x 41.25" high x 23.50" deep. This compartment shall have vertically hinged double doors.

The low height upper compartments above the forward rear wheels shall have a doorframe to doorframe dimension of 55.25" wide x 13.75" high. The clear door opening shall be 51.75" wide x 10.25" high. The usable compartment space shall be 55.00" wide x 15.00" high x 23.50" deep. This compartment shall have a single horizontally hinged lift-up door.

The full height upper compartments above the aft rear wheels shall have a doorframe to doorframe dimension of 51.50" wide x 28.75" high. The clear door opening shall be 47.50" wide x 24.75" high. The usable compartment space shall be 55.50" wide x 30.00" high x 23.50" deep. This compartment shall have vertically hinged double doors and shall be transverse above the torque box.

The full height compartment behind the rear wheels and the rear stabilizers shall have a doorframe to doorframe dimension of 57.50" wide x 52.00" high. The clear door opening shall be 53.50" wide x 48.00" high. The usable compartment space shall be 59.25" wide x 53.25" high x 23.50" deep. This compartment shall have vertically hinged double doors and shall be transverse above the torque box.

The compartment behind the access ladders shall have a doorframe to doorframe dimension of 37.50" wide x 32.00" high. The clear door opening shall be 33.50" wide x 28.00" high. The usable compartment space shall be 38.50" wide x 33.25" high x 23.50" deep. This compartment shall have vertically hinged double doors.

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INNER LINERS

QW50-00-0010

Full semi-circular inner liners shall be provided in each wheel housing. They shall be constructed of aluminum and shall be bolted in place so they may be removed if damaged. Self-tapping sheet metal screws are not acceptable. The bottom edge of liner shall be reinforced along its full length, however, it shall not have a formed reinforcement flange to avoid trapping dirt and debris.

REAR FENDERETTE

QW50-00-0045

Black rubber fenderettes shall be installed on the rear wheel openings. The fenders shall be wide enough to completely cover the outside rear tire and reduce wheel splash up the sides of the body. They shall be installed with 1/4" hex head bolts, self-tapping sheet metal screws are not acceptable. There shall be a stainless steel backing strip between the rubber and the mounting flange to add support. The fenderettes shall incorporate a vertical flange to cover the area where the body side and wheel opening mounting surface meet. The fenderettes shall be a minimum of 1/4" thick, have a mold-formed outer radius and a rounded bead at the wheel opening edge.

REAR FENDER PANELS

QW50-00-0065

Removable, stainless steel fender panels shall be provided on the outer face of each fender area. The panels shall be painted job color.

HINGED COMPARTMENT DOORS

QW57-00-0005

The side compartment doors shall be lap type, double panel construction with 14 gauge outer and 14 gauge 3CR12 stainless steel inner panels (no exceptions). Outer pan edges that form the lap portion of the door shall be hemmed over the inner pan edges. Inside corners, at the hem area, shall be welded and ground smooth.

The doors shall be weather stripped with an automotive bulb type extruded rubber inner seal. A second outer seal of closed cell rubber shall be placed on the lap edge of the door to prevent damage to the paint finish. Outer seal shall have corrugated surface to prevent sticking.

The doors shall be mounted on stainless steel piano hinges with a pin diameter of .25". Mounting holes shall be slotted vertically on one side of the hinge and horizontally on the other side to provide for proper adjustment of the door. The hinge pins shall have spun ends (crowns) at both ends to hold them in place and provide a finished look. Eberhard 206 latches with stainless steel "D" ring handles shall be provided on the lift, single, drop down, and lock door (double door set-up). The free door (double door set-up) shall have an (2) Eberhard latches top and bottom with a single handle located inside the door (standard

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location at bottom). Isolation tape shall be furnished between the door hinge and door jam. A rubber gasket shall be provided between the "D" ring handle and the door.

Vertically hinged doors shall be equipped with Hansen 5EZ or Thomas EZ spring type door checks that also hold the doors in the open and closed position. Checks shall be the two point mounting type for simplicity. Spring tension (15 lb.) shall be easily adjustable. Checks shall have black zinc mounting brackets with stainless steel springs, 11" long rods and clamps. Springs shall be polished. Horizontally hinged doors shall be held in the opened position with gas cylinder type stays. Switches for automatic compartment light operation shall be installed in the door hinge area.

LOCKING COMPARTMENT DOOR(S)

QW57-00-2000

The stainless steel D-ring handles shall be provided with key type locks on ten (10) compartment door(s). All locks shall be keyed alike (use the same #1250 key). The tab containing the key lock shall point towards the hinge.

BRUSHED STAINLESS COMPARTMENT DOOR LINER(S)

QW57-00-5200

Brushed stainless steel overlay shall be provided on the inside of nineteen (19) compartment door(s) to protect the painted finish and to cover inside door hardware.

BODY DOOR HINGES

QW57-00-6010

All piano hinges on the main body exterior doors shall be mill finished.

FINISH – BODY SIDE COMPARTMENT INTERIORS

QW91-01-0330

Thirteen (13) body side compartment interiors shall be finished with gray Zolatone type paint following the Zolatone Coat application process.

UPPER TRANSVERSE COMPARTMENTS

QW49-00-5015

The compartments above the rear tandem axle and the compartments behind the rear jacks shall be transverse above the aerial torque tube.

VENTS BODY COMPARTMENTS

QW50-00-0005

Compartment vents shall be provided to meet the requirements of NFPA 1901, current edition.

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STABILIZER STORAGE COMPARTMENTS

QW50-00-0210

A storage compartment shall be installed one each side above the rear stabilizers. The compartment shall be recessed and have a job color red painted door and locking D handle style latch. There shall be unistrut and an adjustable shelf in each compartment.

ACCESS STEPS

QW50-00-0310

Three (3) stationary steps shall be recessed into the right side and left side of the body to facilitate access to the platform. The steps shall be located aft of the compartment just to the rear of the rear axles. All vertical surfaces shall be covered with aluminum tread plate. The steps shall be of Bustin aluminum grating.

SWING DOWN STEPS

QW50-00-0320

Under the side permanent access steps shall be an additional swing down access step also made of Bustin aluminum grating. These steps shall be locked in place when swung up in the stored position

HANDRAILS

QW50-00-0330

A vertically mounted "swimming pool" style handrail shall be installed on the forward side of each set of platform access steps.

One (1) 17" handrail shall be provided on the rearward side of each set of platform access steps, opposite to the swimming pool style handrail.

The handrails shall be 1-1/4" diameter extruded aluminum, knurled, with a bright anodized finish.

REAR SURFACE

QW50-00-0500

All vertical surfaces on the rear of the body shall be smooth painted stainless steel for application of reflective chevron striping.

STORAGE BOXES FOR STOKES BASKET BRACKETS

QW56-00-STKS

Two (2) 3/16 aluminum treadplate compartments shall be provided and installed on top of the body beneath the platform. The compartments shall be designed to store one platform stokes mounting bracket from each side. They shall be provided with an aluminum treadplate drop down each side .

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REAR BODY PROTECTION

QW57-99-9997

A heavy duty, fully welded, gusseted, steel tubular structure that is bolted to the rearmost portion of the frame shall be provided just beneath the rearmost portion of the body. The structure shall extend past the body on both sides so that it is in line with the rub rails. The intent of this structure is to protect the body from incidental impacts. The design shall be updated to include a center steel support that does not extend past the rear of the apparatus. This additional support includes two wire openings that have heavy duty covers for access.

ADJUSTABLE SHELVES

QW57-05-3010

Ten (10) adjustable shelf or shelves made from 3/16" smooth aluminum sheet metal shall be provided in the body compartments. Each shelf shall be supported by four (4) stainless steel angles bolted to Aluma-Strut tracks.

The location of the shelves shall be determined at the time of order.

Shelves shall have a DA finish on the outside edge of the shelf.

All shelves shall have welded corners.

QW91-01-5300
QW57-05-4900

ROLL OUT TRAY(S)

QW57-05-4055

Four (4) roll out tray assembly(s) shall be provided in the body compartment(s). The tray assembly shall be bolted to the compartment floor.

Four (4) base depth tray(s) shall be constructed of 0.188" aluminum and shall have edges on all four sides for added strength. The corners shall be welded.

QW57-05-4900

The location of the trays shall be determined at the time of order.

Roll out trays shall have a DA finish applied to the outside edge of the tray.

Four (4) SlideMaster model AM2 aluminum base depth slide mechanisms shall be bolted to the compartment floor. It shall allow the tray to extend 70% of the slide length. The tray/compartment shall be able to support a 500 pound load. The SlideMaster slide mechanism shall be secured with a SlideMaster 2-rail IMS spring lock.

AIR BOTTLE COMPARTMENTS

QW57-10-1200

There shall be two (2) triple wheel well enclosures provided to accommodate six (6) air bottles. A triple air bottle compartment shall be located on each side, between the tandem rear axles. The compartments

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shall be fabricated of the same material as the fender and shall provide a minimum of 23.00" of usable depth. There shall be a rubber mat provided on the rear wall and on the bottom half of each compartment to prevent damage to the bottles.

Door material shall be ATP

COMPARTMENT DECKING

QW57-05-0100

Dri-dek shall be provided and shipped loose for all compartment floors, shelves, and trays. ~~The outside edge of each compartment's decking shall be tapered for a smooth transition.~~

EXCEPTION

RUB RAIL - BODY SIDES

QW57-30-0110

Black poly rub rails shall be provided along the lower portion of the body, beneath the compartment doors, on each side to prevent damage to the body and finish. The rub rails shall be a minimum of 2-3/8" wide x 1" deep, and shall be mounted on rubber supports. The rub rails shall have a 1" x 1" chamfer at the front and rear of the rails. The rails shall protrude a minimum of 1.75" from the face of the body.

RUB RAIL - BODY REAR

QW57-30-1110

A full width black poly rub rail shall be provided along the lower portion of the rear of the body, to prevent damage to the body and finish. The rub rail shall be a minimum of 2-3/8" wide x 1" deep, and shall be mounted on rubber supports. The rub rail shall have a 1" x 1" chamfer at the front and rear of the rail. The rail shall protrude a minimum of 1.75" from the face of the body.

TOWER DESIGN AND PERFORMANCE

QW60-00-1600

A 95 foot, 1000 pound tip load telescoping tower shall be mounted mid-ship of the apparatus. The boom shall have a totally enclosed box type construction and shall meet or exceed the requirements of all applicable sections of the current edition of NFPA 1901.

The boom shall be designed with a minimum structural safety factor of two to one (2:1) based on the dead and live loads and shall meet ANSI A92.2 Standard for Vehicle Mounted Aerial Devices and NFPA 1901 which requires a static stability safety factor of one and one half to one (1.5:1) based on the rated load. These capabilities shall be established in the unsupported configuration.

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The aerial device and all supporting structure shall be third party tested to confirm that the tower meets the original design criteria and the intent of the latest recommended NFPA standard for aerial devices. Such testing shall include the use of brittle lacquer stress coating to identify all stress concentrations, followed by strain gauging to verify that all nominal stresses and stress concentrations have a safety factor that is equal to or greater than 2:1 based on the dead and live load.

The tower shall extend to a nominal working height of 95 feet above the ground as measured by NFPA 1901 recommendations. The aerial shall have a rated horizontal reach of a minimum of 84 feet measured in the horizontal plane at zero (0) degrees from the centerline of the turntable rotation, as defined by NFPA 1901. The aerial shall be capable of continuous operation through 360 degrees of rotation and from minus nine (-9) degrees to plus seventy-five (+75) degrees elevation.

TOWER CERTIFIED RATED CAPACITY

QW60-00-2600

The rated capacity of the platform shall be 1000 pounds while flowing 1000 GPM of water in accordance with NFPA 1901, current edition, with no restrictions regarding boom extension, boom elevation, or rotational orientation. The platform shall be capable of flowing 2000 GPM of water, provided the monitor stops are set at 45 degrees above the horizontal. There shall be no restrictions regarding the simultaneous use of all three (3) motion functions (elevation, rotation, and extension) with the rated platform capacities either at the main pedestal or in the platform. This unit shall be capable of setting up and operating on street grades of up to 5 degrees. At the maximum grade, the unit shall be capable of operating at the aforementioned manufacturer's rated capacity and platform placement with no operational restrictions. There shall be no nozzle orientation restrictions while flowing 1000 GPM of water.

All tower certifications shall be based on the platform being properly deployed in an unsupported configuration. The capacities shall be based upon 360 degree rotation, up to full extension and from -9 degrees to + 75 degrees.

OPERATION ON GRADES

QW60-00-4000

The aerial is capable of being operated at full rated capacity in every position in which the aerial device can be placed when the apparatus is on a slope of 5 degrees (8.7%) in accordance with NFPA 1901 (19.21.3.1)

SUPERSTRUCTURE CONSTRUCTION

QW60-05-0010

The superstructure shall be directly mounted to the chassis at a midship point by grade 8 fasteners and not welded directly to the rail. It shall be capable of supporting the positioning of all boom movements and capacities. The superstructure shall be constructed of structural steel solid-welded into such a fashion that

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the outriggers are directly integrated, providing direct radial support of boom extension off the side extension of the boom.

TOWER TORQUE BOX

QW60-05-5060

A torque box shall be provided that transmits boom loads from the superstructure to the rear jacks. The torque box also extends to the rear of the truck to provide enclosed storage for ground ladders. The sub-frame shall be constructed of .25" T-1 100,000 PSI yield steel plate. The torque tube shall extend from the center of rotation of the turntable to the back of the apparatus. Chassis mounting plates shall be welded to the sides of the torque box and then it shall be bolted to the frame rails using SAE grade 8 bolts and nuts. The torque box shall also be secured to the superstructure. The torque box assembly shall be capable of withstanding all torsional and horizontal loading when the unit is supported by the outriggers and the aerial device is fully extended and loaded to capacity.

The torque box shall have structure for mounting the cradle and transferring the boom weight from the cradle through the torque box and into the frame rails.

STABILIZERS

QW60-10-0295

There shall be six (6) chassis stabilizers to lift the truck off the suspension creating a stable base for tower operations. There shall be two (2) swing-down outriggers mounted directly to the superstructure capable of supporting all of the side operations of the tower, in conjunction with the four (4) vertical corner jacks. A four (4) out and down stabilizer system shall not be acceptable.

FRONT AND REAR JACKS

The four (4) vertical jacks shall be mounted two (2) in front of the cab and two (2) behind the rear axle. The two in front shall tilt to allow the cab to be tilted for maintenance. The vertical jack housing shall be bolted to a 6" minimum square steel tubing mounted under the chassis frame rails thus providing maximum lifting capacity. The cylinders shall contain integral pilot operated holding valves for maintaining their position during operation of the boom and to secure the cylinder in the event of a hydraulic line failure. Each jack shall also have a U-shaped mechanical safety lock constructed of solid steel. Each safety lock shall have a locking pin on a lanyard with a chrome handle. The ground contact area shall be that which is recommended by NFPA, 1901 with the use of ground plates. An out and down stabilizer system welded to the chassis rail shall not be acceptable.

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MID BODY OUTRIGGERS

The two (2) outriggers, one (1) each side of the vehicle, shall be mounted directly to the turntable superstructure at two (2) pivot points. These outriggers shall swing down from their vertical storage position and lock into an A-frame type configuration. The foot pad shall swivel parallel to the longitudinal axis of the truck to match uneven terrain. The cylinders shall contain integral pilot operated holding valves for maintaining their position during operation of the boom and in the event of failure of a hydraulic line. The outriggers shall be provided with a manually positioned safety pin. The safety pin shall be constructed of high strength steel with storage location to be determined at the pre-construction conference.

The ground contact area shall be that which is recommended by NFPA 1901 with the use of ground plates.

STABILIZER CONTROLS

QW60-10-1200

Six (6) joystick controls for all stabilizers shall be provided on the street side of the apparatus in the forward body compartment just aft of the cab.

The operator shall be able to raise and lower the jacks and outriggers independently while observing them during set up. A single control switch shall also be provided for the operator to raise and lower all jacks and outriggers at once while the interlock is activated. An automatic high idle switch and indicator shall be provided so that automatic engine RPM ramp up from hydraulic requests can be disabled.

Two (2) inclinometers shall be provided to aid in leveling the unit from side to side and front to rear.

The control panel shall be lit by an LED compartment light determined at the pre-construction conference.

OUTRIGGER CONTROL HOUSING

QW60-10-1T00

The outrigger/stabilizer controls shall be housed in a dedicated compartment in the left side forward body section. The upper section shall be recessed back from the outside edge of the body and shall house the outrigger stabilizer controls.

OUTRIGGER ALARM

QW60-10-2010

An automatic electronic warning device (horn) shall be provided to warn personnel when the outriggers leave their nested position. Alarm shall operate only when outriggers are moving.

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CRADLE INTERLOCKS

QW60-10-7050

A cradle interlock system shall be provided which automatically prevents the operator from lifting the aerial device from the cradle unless all outriggers are placed in a load supporting configuration. The system is activated when the foot of the center outriggers contacts the ground and trips a limit switch. An LED indicator light on the jack control panel shall then indicate that the boom can be operated.

An additional interlock shall be provided that prevents outrigger operation when the aerial device is not fully stowed in the cradle.

SHORT-JACK OPERATIONS

QW60-10-7120

The aerial device shall be capable of operating in a “short-jacked” stance. The aerial device shall require two operators to lift the boom from the cradle. Once the boom is lifted from the cradle, the aerial device shall be fully operational by a single operator to the side of the apparatus with fully deployed outriggers, and shall be denied operation to the short set side. In the event both sides are short set, the operator will automatically be denied operation to both sides. Two methods of overriding the interlock are available: an electric switch, or mechanically moving the solenoid. Both are available to the single operator located at the primary operator's station.

MANUAL OVERRIDES

QW60-10-7230

The manual overrides for the aerial device (clockwise and counterclockwise rotation and boom lowering interlocks) shall be in the turntable control pedestal. Operation of the boom without the outriggers properly set requires the operation of a diverter valve and requires a second operator. The overrides for the outriggers shall be conveniently located behind the jack control panel. The outrigger overrides can be operated by one person, but requires the simultaneous activation of two separate controls to override the safety system.

OUTRIGGER LIGHTING

QW60-10-3L50

Six (6) Whelen TIR3™, red LED lights, with cast aluminum bezels, shall be mounted on the outrigger feet, three on each foot. On each foot, one light shall face outward, one shall face forward, and one shall face rearward, to meet NFPA requirements. The lights shall be activated by engaging the PTO.

REFLECTIVE STRIPING

QW60-10-3L55

In compliance with NFPA, there shall be a 2" white reflective stripe placed on both of the tension arms for each outrigger.

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OUTRIGGER SPOT LIGHTS

EXCEPTION: PAR36
Whelen LED

QW60-10-3M4B

Two (2) ~~Unity 6" chrome plated spot lights with AH-R-P46FKC LED~~ bulbs shall be installed, one on each side of the apparatus above the outriggers, to illuminate the area for spotting the outriggers in the down position. The lights shall be wired to a switch on the cab dash and shall also automatically activate when the PTO is engaged. Each light is equipped with a switch on the light head. This switch shall be dependent on the switch on the light head.

OUTRIGGER PADS AND BRACKETS

QW60-10-4280

A set of six (6) auxiliary outrigger pads shall be installed on the apparatus. The six (6) pads shall be made of 3/8" smooth aluminum with a carrying handle. The brackets, which hold the pads, shall be installed to hold the pads vertically on the front of the compartment body on each side. Each bracket shall be capable of holding three (3) of these outrigger pads.

CRADLE

QW60-10-6050

A heavy-duty rest shall be provided to support the boom in the travel position. Re-enforcement plates shall be attached to the boom base section to protect the aerial when the unit is in the travel position. The cradle shall be located on the top of the torque box. It shall be constructed such that the weight of the boom shall be transferred through the torque box to the chassis frame rails. A limit switch mounted on the cradle shall automatically stop the lowering function of the boom at the proper position in the boom rest.

HYDRAULIC SYSTEM

QW60-20-0020

All stabilizer, outrigger, and tower movements shall be accomplished by the use of hydraulic power. All functions shall be held in place by holding valves when not in motion. The hydraulic system shall incorporate a pressure relief valve to protect the system from excessive pressure. All hydraulic cylinders shall incorporate pilot operated holding valves to keep them in place or to control their movement when hydraulic pressure is applied. The hydraulic pressure lines shall have a burst pressure of at least four times the operating pressure.

The system shall incorporate two (2) filters and a remote filter condition indicator. One (1) 5 micron high pressure filter shall be placed after the pump and one (1) 10 micron return filter shall be placed in the hydraulic tank. These filters shall be sized for the system required pressure and flow.

HYDRAULIC PUMP

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The system shall be powered by a pressure compensated load sensing hydraulic pump. The pump shall be sized to operate all boom functions simultaneously. The load sense feature operates any function at the optimum pressure to maximize efficiency and minimize heat build-up.

HYDRAULIC OIL TANK

QW60-20-0210

The hydraulic oil tank shall have a sufficient capacity to operate the aerial while allowing the oil to cool and shall be located in the front of the torque box. There shall be a means provided to remove the tank, if needed. The connection points to the tank shall be easily accessible, with internal baffles separating the intake and return. There shall be shut-off valves at these points to isolate the tank, if needed. A filtered breather cap and a basket strainer shall be located in the filler neck. A dip stick shall verify the oil level. There shall be a plaque mounted next to the fill cap labeled "Hydraulic Fluid Only".

HOURLY METER

An aerial hydraulics hour meter shall be provided to accumulate hours when the transmission provides pressure to engage the PTO and the aerial enable switch is engaged.

EMERGENCY PUMP

QW60-20-0210

The apparatus shall be equipped with an emergency hydraulic pump. The pump shall be driven by a 12 volt electric motor with power from the truck batteries. It shall be capable of providing limited hydraulic power for returning the boom and outriggers to their stowed position in the event of main power failure. A control switch for the emergency pump shall be located at the outrigger control station and at the aerial control. The control switch shall be a spring loaded momentary type to prevent prolonged operation of the emergency pump. The switch shall be located behind the pedestal interior access door and at the outrigger controls.

HOT SHIFT POWER TAKE/OFF FOR AERIALS

QW60-20-0310

The apparatus shall be equipped with a power (hot) shift PTO driven by the chassis transmission. An indicator shall be located in the cab to indicate when the PTO is engaged.

The following conditions apply for use of the PTO: (no exceptions)

If the PTO is used to power the generator only, then the PTO can be engaged by the generator switch when the truck is in motion.

If the PTO is used to power the aerial only, then the PTO can be engaged by the aerial enable switch if the transmission is in neutral and the parking brake is set.

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If the PTO is used to power the generator and the aerial, then the generator can be used while the truck is in motion by activating the generator switch. A hydraulic valve, controlled by the aerial enable switch, shall prevent aerial operation until the transmission is in neutral and the parking brake has been set.

PTO AERIAL DRIVE SHAFT

QW60-20-0310

The aerial hydraulic pump shall be mounted to the frame with a drive shaft from the PTO to the pump.

HOIST SYSTEM

QW60-20-0550

The boom shall be elevated or lowered by two (2) hydraulic lift cylinders. They shall be mounted one on each side of the boom using spherical bearings. The cap end of the cylinder shall be attached to the turret. The rod end shall be attached to boom ears on the side of the boom at a point located at least 140" from the turret pin to provide better boom stability.

In case of cylinder failure, one cylinder shall be capable of supporting the full load capacities of the platform.

Each lift cylinder shall have two (2) counterbalance valves that lock the cylinders in place when movement is stopped and provide smooth operation during raise and lower functions.

The range of elevation shall be at least -9 degrees to +75 degrees.

EXTENSION-RETRACTION SYSTEM

QW60-20-1150

A full hydraulic powered boom extension and retraction system shall be provided utilizing three hydraulic cylinders synchronized by hydraulic valves. The extension/retraction cylinders shall be equipped with integral (on the cylinder) holding valves to prevent the cylinder from moving should a pressurized hydraulic line be severed at any point within the system.

Wear pads shall be provided between the telescoping sections for smooth operation. Wear pads shall be composed of high strength polymers with friction reducing additives.

ROTATION INTERLOCK SYSTEM

QW60-30-5050

The apparatus shall be supplied with a rotation interlock system. This interlock system shall not allow the aerial to be rotated over the side of the apparatus if the stabilizers on that side are not fully deployed (no exceptions). The interlock system shall include a light and audible alarm that will activate when rotation is no longer allowed. Once rotation is stopped the interlock system shall allow the operator to rotate away from the stopping point without the use of an override. A manual override feature shall be provided that will allow the operator at the turntable the ability to override the interlock system.

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AERIAL SWIVEL WITH 5" WATERWAY

QW60-35-36W5

The aerial device shall be equipped with a swivel installed within the axial centerline of the turntable to allow 360 degree rotation of the aerial device. The swivel shall float on the turntable to prevent side loading. It shall have passages for the hydraulic lines from the hydraulic pump and oil reservoir to the aerial control valve bank, and for a 5" waterway down the center. The swivel shall also maintain electrical continuity of all necessary electrical circuits while ladder is rotating or when it is immobile. A minimum of thirty-six (36) collector rings shall be provided.

ROTATION SYSTEM

QW60-40-0150

The turntable bearing shall be of 4-point contact ball construction. All fasteners shall be grade 8. The outer race of the turntable bearing shall be mounted to the top of the superstructure. The outer race shall have gear teeth to permit interaction with the rotational spur gear.

The turntable shall be bolted to the inner race which will be free to rotate 360 degrees continuously in either direction.

The turntable rotation shall be driven by two (2) rotation assemblies each consisting of a hydraulic motor, a hydraulically activated brake, and a planetary gear reducer. This system shall be capable of 360 degree continuous rotation of the fully extended boom in the direction of the platform water stream while maintaining the manufacturer's rated basket capacity. The angle of elevation shall not affect this performance. The hydraulically activated brake mechanism shall be capable of withstanding all side forces from water flow or sudden stopping of boom rotation. The rotational assembly shall be mounted on the left side of the turntable. (Assuming you are standing on the turntable looking at the boom.)

TURNTABLE ROTATION MOTOR COVER

QW60-40-202A

An aluminum tread plate cover shall be provided over the boom rotation motors on the turntable.

TURNTABLE

QW60-40-101A

The turntable shall be constructed of High Strength Low Alloy structural steel and bolted to the inner race of the turntable bearing using grade 8 fasteners. The bearing mounting plate shall be machined to insure a smooth and flat bearing mounting surface. The turntable ears shall support the base section of the boom. There shall be a set of mounting brackets for the lift cylinders.

The standing deck of the turntable shall have aluminum grating in front of the main operator's control pedestal (console) and aluminum tread plate on the remainder.

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There shall be a 42” high slip resistant, poly-elastomer material coated stainless steel handrail on the right side of the turntable, next to the control pedestal. (Standing on the turntable, facing the boom.)

The main operator’s control pedestal shall be mounted on the street side of the turntable when the boom is in the stored position.

YELLOW PERIMETER MARKING

QW60-40-901A

In accordance with NFPA 1901 chapter 15.7.1.6, the perimeter of the turntable not covered with a railing shall be marked with a one-inch wide safety yellow line to delineate the designated standing or walking surface area.

MANSAYER BAR

QW60-40-2000

A Fire Research "Mansaver" bar shall be provided at the entrance to the turntable.

PEDESTAL COVER

QW60-41-101A

A hinged aluminum tread plate cover shall be provided for the control pedestal. Two (2) gas springs shall hold the cover in either an open or closed position. There shall be a rubber ball type latch installed on the pedestal cover to assist in holding the cover closed. The driver shall be alerted if the cover is open when the parking brake is disengaged.

PEDESTAL COVER LIGHT

QW60-41-0220

There shall be a TecNiq Eon LED lamp installed in the pedestal cover. The light shall be activated when the PTO is engaged.

CONTROL PEDESTAL INTERIOR WORKLIGHT

QW60-41-0110

The interior of the turntable control pedestal shall have a TecNiq EON LED work light for control valve service visibility. It shall have a stand-alone toggle switch with label.

TURNTABLE CONTROL PEDESTAL (CONSOLE)

QW60-41-1U00

The aerial control console shall be located on the right side of the turntable facing the tip. The console shall be illuminated for night operation and shall have the following items clearly identified and conveniently located on or in close proximity to the console for ease of operation:

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- Emergency stop push button with on-light stops all platform controllability
- Aerial overload chart
- Emergency override rotation switch with protective cover
- Throttle switch
- Emergency pump switch with protective cover
- Intercom system - allows communication between pedestal and end of aerial
- Three directional control handles for aerial functions

The three directional control valves shall control the elevation/lowering, clockwise/counter clockwise, and extension/retraction functions for the positioning of the aerial. The controls for the three aerial functions may be operated independently or simultaneously and shall be of the "deadman" type. A foot pedal locking feature shall be incorporated to insure the controls are non-operable unless the foot pedal is engaged when the function is being performed.

The display located in the pedestal shall include the following information:

- Low voltage (Red)
- Rung alignment (Green)
- Turntable aligned (Green)
- Aerial overload buzzer and light (Red)
- Rotation limit exceeded (Red)
- Cab avoidance (Red)
- Hydraulic system pressure
- Lower system pressure
- All warning information
- Aerial status
- Truck status
- Elevation indicator

CAB AVOIDANCE

QW60-41-1XAS

Cab avoidance shall be provided within the aerial electrical system that shall create an envelope around the cab to prevent the aerial from contacting the cab or compartment body.

AERIAL OVERLOAD ALARM

QW60-41-2001

An alarm horn and warning light shall be provided at the control pedestal and at the platform that shall sound to alert the operator should the load capacity of the aerial be exceeded (no exceptions). The alarm shall in no way restrict the further operation of the aerial.

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AERIAL DEVICE FOOT PEDAL

QW60-41-2030

A foot pedal shall be mounted on the turntable floor at the base of the control pedestal. Depressing the foot pedal shall activate the aerial hydraulic control valve for operating the aerial device from the turntable pedestal. Depression of the foot pedal also allows the pedestal operator to override the platform control.

AERIAL ALIGNMENT LIGHT

QW60-41-2040

There shall be a 4" round Truck-Lite model 4050A amber LED light recessed on the backside of the pedestal, viewable from the platform, to assist the operator's alignment of the aerial device with the aerial cradle.

AERIAL INTERCOM SYSTEM

QW60-45-1205

The intercom shall be a Fire Research Model ICA-900 2 station with ACT clear voice sound system. The master shall be a push-to-talk station with 5-LED volume indicator lights and push button, arrow-up and arrow down, controls. The master unit shall be mounted on the turntable control pedestal. The hands free voice transmission slave unit shall be installed at the aerial tip or platform control console and always in transmit mode until interrupted by transmission from the master unit. The system stations shall be interconnected with shielded cable for static free operation in normal conditions.

AIR HORNS PUSH BUTTON SWITCH ON AERIAL PEDESTAL

QW60-41-2020

A push button switch that operates the air horns shall be provided on the aerial pedestal.

BOOM CONSTRUCTION

QW60-55-0100

The boom shall be constructed of steel on the main stage and aluminum on the telescoping stages. It shall be a totally enclosed box type welded construction design. It shall be able to withstand the stress of fully extended low angle positions combined with any positioning of full flow water stream capabilities

Teflon impregnated bearing pads shall provide a sliding surface for each section as it is extended or retracted. Wear pads shall have adjusting screws to set clearance without shims. The boom extension wear pads and boom pivot bushings shall not require grease.

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PLATFORM CONSTRUCTION

QW60-55-0200

The platform structure shall be completely constructed of welded aluminum. Any tubular aluminum shall have a minimum diameter of 1.5" and any square aluminum shall be a minimum of 1.5" x 1.5". It shall have a 42" high hand railing. The floor shall be non-skid extruded aluminum with a minimum area of 15 sq. feet. A 4" minimum kick plate shall surround the floor. An aluminum plate for mounting the platform air and intercom shall be mounted at the left rear wall. Aluminum mounting angles for the platform control box shall be mounted on the right side.

There shall be two (2) curved aluminum doors with aluminum heat shields located on the front corners of the platform. The doors shall have a self-latching lock and shall swing inward. A secondary latch shall allow the door to swing in or out.

There shall be four (4) individual tie-off rings incorporated into the platform to be used as mounting points for safety harnesses. Two (2) rings shall be on each side at the rear of the platform.

The platform shall be fastened to the third telescoping boom section by means of an "L" shaped aluminum welded assembly. The attachment point shall be at center point under the platform to provide for greatest ease in leveling the platform.

The platform shall be provided with a non-skid tread access ledge around the outside edge. The access ledge shall be a minimum width of 8".

The construction of the platform being of aluminum and not painted steel shall reduce the maintenance cost of the platform.

PLATFORM ACCESS HANDRAILS

QW60-55-0260

A 31" knurled aluminum handrail shall be provided on each side of the back of the platform to assist in accessing the platform from the access steps on the body.

SKID RESTS

QW60-55-0270

A set of poly skid rests shall be located underneath the platform to protect mounted items from damage when the platform is set on the ground or a flat surface.

PLATFORM CONTROL STATION

QW60-55-0280

A control station shall be located on the right side rear corner of the interior of the platform. The control station shall be constructed of aluminum.

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CONTROL STATION LIGHTING

QW60-55-0300

A TecNiq clear LED light shall be installed under the platform control joystick.

PLATFORM CONTROLS

QW60-55-032A

A single joystick control shall provide simultaneous operation of all three (3) boom movements. The control shall be a self-centering handle with an integral trigger type safety interlock switch. This switch shall work in conjunction with the safety interlock system at the main pedestal. The joystick control shall send a variable signal to the hydraulic valve at the main pedestal for the desired movements. It shall be mounted on the right rear corner of the platform so as to not interfere with any activities in the platform. It shall also allow constant observation of any obstacles due to directional hand movement without looking at the control.

The control shall be activated by turning on the platform control's switch at the main pedestal. It shall be deactivated by pushing the platform control switch "off" or by depressing the safety interlock foot pedal.

The platform joystick shall have 3 colored LED's with a speed control push-button. Pressing the button one time shall give a creep speed and the LED shall turn red. Pressing the button again, gives ½ normal speed and the LED turns yellow. Pressing the button again, gives normal speed and the LED changes to green. Pressing the button again returns the speed to creep with a LED color of red. Moving the joystick to center shall slowly reduce speed to zero. All speeds can be adjusted at final inspection to meet departmental requirements.

All exposed wiring underneath the platform shall be covered with a heat shield wrap.

The control panel shall have the following switches:

- Basket Spot Lights (Boom & Stream Tracking)
- Basket Flood Lights
- Basket Work Lights
- Basket Warning Lights

The control panel shall have the following indicator lights:

- Boom Overload Alarm
- Cab Avoidance Active
- Boom Aligned
- Must Use Manual Leveling
- Auto High Idle Active

PLATFORM LEVELING SYSTEM

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The platform leveling system shall incorporate an electronic level sensing device that controls a proportional hydraulic valve. This system shall be capable of leveling the forward/rearward tilt of the platform regardless of the truck orientation. Leveling shall also be functional with the auxiliary back-up hydraulic system.

Hydraulic lines shall connect to a proportional control hydraulic valve. The output of an electronic level sensing device controls the proportional valve to position the leveling cylinders and maintain level of the platform. If the primary power is lost, the leveling electronics shall be powered with an auxiliary backup battery system that shall automatically engage. The auxiliary backup battery system shall have a gauge and test switch located on the control station.

The two (2) leveling cylinders shall be mounted at the rear of the platform. These cylinders shall incorporate dual pilot operated holding valves so as to hold them in place. An individual cylinder shall be capable of holding the weight of the platform, if necessary.

PLATFORM WATERWAY SYSTEM

QW60-55-0410

A mounting flange for a deck gun shall be mounted in the front center of the platform structure. The waterway shall also be equipped with a manually operated 3" 150# flange "Slo-Close" worm gear shut-off valve mounted in the front center portion of the platform for a deck gun, 1500 GPM capacity.

A water curtain assembly shall be mounted beneath the platform for protection. It shall be operated by a shut-off valve.

DISCHARGE

QW60-55-0510

There shall be one (1) 2.5" coupling provided for one (1) 2.5" ball valve with cap in the waterline at the front center portion of the platform, under the discharge gun flange of the platform for a hand line set-up.

AERIAL WATER SYSTEM

QW60-70-0900

The aerial waterway shall be 5" schedule 40 aluminum pipe from the swivel to the telescopic waterway. A single aluminum telescopic waterway, which has been duranodic hard coat anodized, shall be provided and mounted to the side of the aerial boom. The telescopic waterway shall consist of a 4.75" I.D. base section tube, 4.25" I.D. second section tube and a 3.75" ID third section tube, and a 3.25" I.D. fly section tube. The waterway shall be 4" schedule 40 aluminum from the telescopic waterway to the platform waterway. The aerial waterway shall connect to the platform waterway with a 4" Victaulic coupling.

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FORWARD BODY

QW60-70-1210

A forward body module shall be provided between the back of the cab and the aerial superstructure. The forward body module shall house the outrigger controls and overrides, the waterway inlets/discharges, gauges and valves, as well as the turntable access steps.

A waterway inlet panel constructed of 14 gauge brushed 304 stainless steel shall be located just in front of the superstructure on both sides of the apparatus. All applicable waterway inlets/discharges, drains, gauges and controls shall be located on these panels.

On the left side of the forward body module, ahead of the waterway inlet panel, shall be a set of turntable access steps and handrails. Where applicable, Grip Strut® shall be used in the construction of the stepping surfaces. There shall be two (2) compartments stacked vertically just aft of the cab. The upper compartment shall be recessed back from the outside edge of the body and shall house the outrigger stabilizer controls. The lower compartment shall extend out to approximately the width of the cab and shall have a Grip Strut® stepping surface on top. The lower compartment shall have a door frame to door frame measurement of 19.625" wide x 15.375" high, a clear door opening of 18" wide x 15.375" high and usable space of 21.875" wide x 17" high x 18.875" deep.

On the right side of the forward body module, ahead of the waterway inlet panel, there shall be an open storage area with a door. This area, painted gray zolatone, shall measure 30.5" high x 20.25" wide x 17.75" deep. The back corner shall be angled to give clearance for the exhaust.

The top of the forward body section shall be covered with 1/8" aluminum tread plate. Each compartment shall have a vertically hinged, lap type, double panel construction stainless steel door.

RIGHT SIDE BODY MODULE DOOR

The right side forward body module compartment ahead of the waterway inlet panel shall be provided with a painted hinged door to enclose it.

YELLOW PERIMETER MARKING

QW60-70-1217

In accordance with NFPA 1901 chapter 15.7.1.6, the perimeter of the roof of the forward body shall be marked with a one-inch wide safety yellow line to delineate the designated standing or walking surface area.

WATER CAN STORAGE

QW60-70-1219

One (1) mounting tube shall be installed on the front of the super structure officer's side for a water can storage.

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WATERWAY INLETS

QW60-70-1220

A 5" inlet shall be provided on the each side of the vehicle. All inlet piping below the swivel shall be stainless. Each inlet shall be trimmed with 14-gauge brushed stainless steel garnish rings. The inlets shall each have a 5" manually operated butterfly valve.

There shall be a 1-1/2" drain valve provided. The drain shall be recessed behind the street side panel with the control extending through the panel and located along the bottom. The drain control shall be properly labeled. The water discharged from the drain shall be routed so it drains below the chassis frame rails.

A 3/4" Auto Drain shall be provided as well to drain water after the system pressure is released. This drain shall remain open until the system is pressurized again.

A 2-1/2" intake relief valve shall be permanently installed in the inlet piping. It shall have minimum pressure adjustment of 75 to 250 PSIG. The surplus water shall be plumbed to the underside of the truck away from components and the operator.

WATERWAY INLET FITTINGS AND CAPS

QW60-70-25AP
QW60-70-25TA
QW60-70-2L65

Two (2) 5" FNPT X 5" MNST straight chrome plated brass rocker lug adapter shall be provided for each waterway connection. Two (2) 5" FNST X 4.5" MNST straight hard anodized aluminum 30 degree elbow with a 4.5" FNST long handled chrome plated brass cap shall also be provided for the waterways.

PRESSURE/FLOW METER

QW60-70-1233A

A pressure/flow meter utilizing a paddlewheel sensor shall be installed at the aerial operators pedestal position and read from the pedestal display. The sensor shall be installed away from turbulence causing bends in the waterway to allow for accurate readings.

MONITOR

QW60-70-5P3X

An Akron Apollo™ model 3432, stick controlled monitor shall be located in front of the fixed center portion of the bucket between the doors.

The entire water system shall be capable of delivering 1250 gallons per minute at any angle of elevation, up to full extension. The monitor can go 180 degrees horizontal and +90 degrees or -35 degrees vertical when stowed or +20 degrees to -110 degrees vertical travel when deployed.

An FDNY style storage mount shall be installed on the front of the platform.

AUTOMATIC NOZZLE

QW60-70-6X4A

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An Akron model 5160 Master Stream Acromatic nozzle shall be provided. The nozzle shall be an automatic nozzle with 80 psi operating pressure and built in stream shaper. Flow rates shall be from 250 gpm to 1250 gpm.

STACKED TIPS

QW60-70-6X5G

One set of Akron model 2499 quad stacked pyrolite deluge tips shall be provided, with standard orifice: 1-3/8" x 1-1/2" x 1-3/4" x 2.

DISCHARGE PIPE

QW60-70-6X6G

An Akron Brass model 3488 pyrolite 2.5" F x 2.5" M discharge pipe shall be provided.

AERIAL TRACKING LIGHTS

QW60-80-311H

Two (2) FRC SRA 100-07 lights, shall be installed on the base section of the aerial device one on each side to illuminate the aerial device in any position of operation.

Aerial tracking lights shall be switched at the turntable pedestal.

STREAM TRACKING LIGHT(S)

QW60-80-411B

Two (2) FRC SRA100-07 lights, shall be installed on the forward face of the platform near the bottom so as to allow the operator to observe the effect of the stream from the monitor nozzle.

Stream tracking lights shall be mounted on the both sides of the platform.

This light shall be activated when the aerial ladder system is activated in the cab.

QW60-80-9100

PLATFORM LIGHTS

QW60-80-573E

There shall be two (2) Whelen Pioneer Plus™ PFP2AC, 120 volt Super-LED®, 1.2 amp, 15,000 lumen floodlights installed under the platform facing the front using the Whelen PBA206 bail mount bracket. One light shall be on the left side of the front of the platform, the other on the right side.

The finish of the light heads shall be white.

QW60-80-765G

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~~ADDITIONAL PLATFORM LIGHT~~

EXCEPTION: need
more info

~~One (1) Whelen PFP2AC Pioneer Plus, 120 volt Super-LED®, 1.2 amp, 15,000 lumen floodlight shall be provided and mounted on the platform as determined at the pre-construction conference.~~

120 VOLT SYSTEM ON TOWER

QW60-80-7550

120 volt wiring shall be provided to the platform. The wiring shall run from a junction box mounted below the turntable through the collector ring assembly.

PLATFORM OUTLETS

QW60-80-7910

Two (2) duplex NEMA 5-15R straight blade 15 amp outlets shall be installed in the lower left corner of the platform (standing in platform and looking out, away from the boom). Each outlet shall be covered, labeled, and weather resistant. Each outlet shall be separately powered by a 120 VAC non-GFCI breaker.

NEMA Rating: 5-15R (15 Amp) straight blade, duplex.

Two (2) aluminum flip lid single receptacle cover(s) shall be installed.

Two (2) 15 amp breaker(s) shall be installed. It shall not have a ground fault interrupter.

PLATFORM LOCATOR LIGHTS

EXCEPTION: ION
T Series

QW60-80-817B

Four (4) Whelen TIR3™ blue LED lights, with chrome flanges, shall be installed on the exterior vertical surfaces of the platform to assist in locating the platform in inclement viewing conditions. There shall be one (1) light on each side and two (2) lights installed on the front; one (1) on the left side and one (1) on the right side of the front.

This light shall be activated when the aerial ladder system is activated in the cab.

PLATFORM LOCATOR LIGHTS

EXCEPTION: ION
T Series

QW60-80-827B

There shall be two (2) Whelen TIR3™ blue LED lights, with chrome flanges, installed on the bottom of the platform to assist in locating the platform in inclement viewing conditions. One (1) light shall be on the left side and one (1) light shall be on the right side of the platform.

This light shall be activated when the aerial ladder system is activated in the cab.

QW60-80-9100

AERIAL LIGHTS

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Two (2) Whelen M6RC red Super-LED® lights in chrome plated flanges shall be installed on the front of the bucket, one (1) each side . The lens color shall be clear.

Light location on the aerial shall be: Front of the bucket.

QW60-80-86MH

This light shall be activated when the aerial ladder system is activated in the cab.

CAT TRACK

QW60-89-0042

A Cat Track shall be provided that contains Synflex hydraulic hose for the hydraulic leveling system. There shall also be electric cables for the intercom, 12 volt DC power and 12 volt DC controls. The hoses and cables shall be continuous from the turntable to the platform with no reels. There shall be electrical connectors and hydraulic connections at the turntable and platform that allow for easy maintenance. The Cat Track shall include cable for 120 volt AC circuit(s).

BREATHING AIR SYSTEM

QW60-90-0415

A breathing air system shall be provided. The system shall be composed of one (1) 444 cubic feet, 4500 PSI air cylinder and two (2) breathing air stations, one (1) 50 foot hose for refilling the air cylinder, and two (2) gauge panels.

The air cylinder shall be mounted to the base section of the aerial device, mounted the same side as the pedestal. The cylinder shall connect to a "T" that delivers high pressure to the gauge panel at the turntable and the panel at the platform. All hose shall meet NFPA requirements for breathing air.

The breathing air stations shall be located at the turntable pedestal and at the platform. The station on the turntable pedestal shall be equipped with a complete set of quick connect fittings for one (1) person. The station on the platform shall be equipped with a manifold and quick connect fittings for three (3) people.

There shall be two (2) gauge panels; one next to the air bottle and one on the platform. The gauge panels shall include the following: an air supply pressure gauge, a pressure regulator, a regulated pressure gauge, a low pressure alarm and indicator light when air is below 20%. The panel by the turntable pedestal shall have a system fill valve.

The air bottle shall be factory painted as received from the manufacturer.

AIR QUALITY TESTING & CERTIFICATION

QW00-05-3500

In accordance with NFPA 1901 current edition, an air sample shall be drawn from the breathing air system after installation has been completed. The air shall be tested and certified by a third party to meet air quality standards, as defined by NFPA.

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BREATHING AIR LEVEL MONITORING SYSTEM

QW60-90-1010

The apparatus shall be equipped with a Class I "Air Minder" system to give a visible indication of the air remaining in the breathing air system. The system shall also provide a visual and audible warning when the level becomes too low.

The Air Minder system shall include:

1. A weatherproof pressure transducer mounted in the air line between the air bottles and the high pressure regulator.
2. A remote display mounted on the turntable control pedestal. This display shall consist of a weatherproof housing with a black non-reflective bezel and a bright red LED readout (readable in sunlight), scaled 0 to 100, and labeled "% Air Remaining". The display shall incorporate a low pressure warning circuit, which causes the display to flash when 20% maximum air bottle capacity remains in the air system and sounds an audible alarm when the remaining air level drops to 10% of maximum air bottle capacity.
3. Appropriate wires and connectors to hook up the display to the pressure transducer and to the vehicle's 12 volt electrical system.
4. An audible horn mounted near the display.

An automatic low pressure switch mounted near the display will turn off the power to the Air Minder warning horn when the supply line pressure drops below 5 PSI.

500 lb LIFTING EYES

QW60-95-8020

Two (2) lifting eyes made of 1" aluminum rod shall be welded to the bottom of the platform "L" bracket. These eyes shall each have a capacity of 500 lb and a combined capacity of 1000 lb. A plaque shall be installed stating the lifting capacity of these eyes. Both lifting eyes must be used when carrying an item so as to evenly distribute the weight on the platform and boom section. Any weight picked up by these lifting eyes must be calculated as part of the overall platform weight capacity.

5,000 lb LIFTING EYE

QW60-95-8010

A lifting eye shall be mounted to the bottom of the main stage boom as close to the end as feasible. A plaque shall be installed on each side of the boom stating the lifting capacity of the eye. The lifting eye shall have a capacity of 5,000 pounds. This lifting eye shall only be used when the boom is fully retracted, the waterway completely void of any water and no personnel are in the platform.

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ESCAPE LADDER

QW60-95-8050

As a means of providing emergency escape from the platform, a telescoping ladder with serrated rungs and folding hand rails shall be mounted on top of the boom. The erected hand rail height shall be 12". This ladder may be utilized for emergency transfer of manpower.

A ladder with 12" handrails shall be mounted in the rear center portion of the platform for access to the emergency escape ladder.

FOLDING LADDER AND PIKE POLE

QW60-95-8090

A Duo-Safety 10' folding ladder shall be mounted along with a stainless steel tube to hold a 10' pike pole on top of the Cat Track Housing.

TOWER SIGNS

QW60-95-8115

A painted sign shall be mounted to each side of the aerial device and adequately braced against vibration. Each sign shall be 15" tall and 144" long. The center of the metal placards shall be mounted approximately 130" from the pivot point of the aerial device.

Sign shall be painted job color with signage to be determined at the pre-construction conference.

PLATFORM STOKES MOUNTING BRACKETS

QW60-95-8510

The platform shall be equipped with the necessary brackets and hardware to hold a Stokes basket centered over the discharge gun. These brackets shall be removable and shall be normally stored in a compartment or on top of the truck. The brackets shall be used at the fire or emergency scene and shall not be used for carrying the Stokes basket while in transit.

PLATFORM HOSE BIN

QW60-95-8520

A hose bin designed to hold approximately twenty feet (20') of 1-3/4" attack hose shall be installed on the walkway at the front of the platform centered underneath the monitor. The bin shall have a fold down door to allow for easy discharging of the hose.

PLATFORM TOOLBOX

QW60-95-8610

One (1) toolbox shall be provided to the rear of the platform on the right side. The box shall be constructed of aluminum tread plate and shall have a cover with a latch. The interior dimensions shall be approximately 15.75" x 13.00" x 24.00" deep.

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HYDRAULIC GENERATOR

QW70-00-8100

A Harrison 8.0 kW hydraulic generator system shall be provided and installed on the apparatus. The system shall be capable of producing the nominal output power of 8.0 kW, 120V/240V, single phase, 60 Hz. The generator shall be installed per the manufacturer recommendations and shall be capable of supplying full power during all engine speeds or operation modes.

The generator shall be placed in a tray frame assembly which affords protection to the components and provides a unitized mounting module containing the motor/generator, reservoir, oil cooler, filtration system, and a manifold containing a cross-port check valve plus system relief valve. The generator shall be a commercial type with a heavy-duty bearing and of brushless design to ensure low maintenance. The reservoir shall include an oil level gauge, oil temperature gauge, fill cap, fill strainer, and a boost unit to provide a positive pressure to the pump suction port. The reservoir shall be equipped with a remote drain and valve below the frame rails. The generator and hydraulic motor shall be close coupled and permanently aligned using a Morse taper with a through bolt to secure the motor to the generator.

The PTO driven hydraulic pump and motor shall be of axial piston design to provide low internal leakage and a high degree of frequency stability. The pump will match to the system with the proper orifice, pressure compensator and load sensing to provide a stable output over the rated speed range of the pump and with electrical loads from no load to full-load. The PTO ratio shall be selected to allow operation throughout the entire engine RPM range; idle to full throttle.

A display meter consisting of (4) numeric LED displays shall be used. The meter shall simultaneously display system voltage, frequency and amperage in each of the two 120V legs. The display meter shall be located in close proximity to the breaker box.

A high temperature visual indicator and audible alarm shall be provided and installed.

The generator enable switch shall be installed on the cab dash.

When properly installed, the system shall be warranted by the manufacturer for a period of not less than two years or two thousand hours, which ever should come first.

The hydraulic generator shall be located on top of the body forward of the transverse high side compartments in the center area beneath the aerial boom. Its location shall not interfere with the range of motion of the aerial device.

QW70-02-0040

GENERATOR ATP COVER

EXCEPTION/CLARIFICATION

The generator assembly shall be protected by an aluminum tread plate cover that shall be easily removable and allow access to areas necessary for inspection and maintenance.

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GENERATOR TEST AND CERTIFICATION

QW00-05-330S

The generator shall be third party tested at the manufacturer's facility and shall conform to NFPA requirements and standards. Copies of all tests shall be provided with the delivery documentation.

BREAKER BOX

QW70-05-0400

A twenty (20) place Square D brand, QO type, gray colored circuit breaker box shall be provided and installed in the front upper left hand side compartment. Manual reset circuit breakers, matching the rated output of each specific outlet or device shall be provided. All power supply assembly conductors, including neutral and grounding conductors from the line voltage power source to the circuit breaker box shall have an equivalent amperage rating and shall be sized to carry not less than 115 percent of the amperage of the nameplate current rating of the power source. Power supply conductors shall be run in nonmetallic liquid tight flexible conduit or type SO/SEO cord with a WA suffix. Conduit shall have a temperature range of -67°F (-55°C) to 221°F (105°C). Wiring from the circuit breaker box to the individual outlets and devices shall be sized in accordance with NFPA 70, National Electrical Code requirements. Branch circuit wiring conductors shall be run in (1) metallic or nonmetallic liquid tight flexible conduit rated for use in a temperature range of -67°F (-55°C) to 221°F (105°C) with stranded copper wire rated for wet locations and temperatures not less than 194°F (90°C) or (2) Type SOW, SOOW, SEOW, or SEOOW flexible cord, rated at 600 volts and at temperatures not less than 194°F (90°C). A power source specification label shall be permanently attached to the apparatus near the operators control panel.

The door of the breaker box shall have a side hinge.

The load center shall be located in the forward left side compartment, up high.

RECEPTACLES

QW70-05-1100

Two (2) 120 volt 3-wire twist lock receptacles shall be provided and installed in weatherproof boxes with spring loaded covers.

Location of each 120V receptacle shall be determined at the pre-construction conference.

NEMA Rating: L5-15R (15 Amp) Twist-Lock, Single.

Two (2) aluminum flip lid single receptacle covers shall be installed.

Two (2) 15 amp breaker(s) shall be installed. It shall not have a ground fault interrupter.

120 VOLT RECEPTACLE(S) IN CAB INTERIOR FOR AUTO TRANSFER RELAY

QW70-05-1930

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One (1) 120-volt, 20 amp, 3-wire receptacle(s) shall be provided in the cab interior in accordance with NFPA guidelines. A brushed stainless steel cover plate shall be provided to protect the receptacle. When the generator is shut down, the load is automatically returned to the shoreline. The receptacle shall be labeled accordingly.

The receptacle(s) shall be located at the pre-construction conference.

NEMA Rating: 5-20R (20 Amp) Non-Twist-Lock, Single.

One (1) stainless steel wallplate shall be installed.

One (1) 20 amp breaker(s) shall be installed. It shall not have a ground fault interrupter.

KUSSMAUL AUTO TRANSFER SWITCH

QW70-05-2910

A Kussmaul 091-134 Auto Interlock II switch shall be provided and installed to allow the receptacle to be fed from shorepower through the Auto Eject when the generator is not in use.

CORD REEL(S)

QW70-05-31L0

Two (2) Hannay Model ECR1618-17-18 power rewind cord reel(s) for live electric cable shall be provided. The reel(s) shall be 12 volt electric rewind and be equipped with an electrical collector ring with a minimum #10 gauge, 4-conductor wiring. Capacity of each reel shall be a minimum of 200 feet 10/4 gauge electric cable.

The AN250 motor shall take 60 seconds to rewind 100 feet.

The cord reel shall be located on top of the body between the aerial basket and the transverse compartment.

QW70-05-332C

CORD REEL CABLE(S)

QW70-05-4500

QW70-05-45CY

Two (2) 200 foot length(s) of 10/4 type SO electric cable shall be provided and installed on the cord reel. The color of the cord cable shall be yellow.

HOSE ROLLER ASSEMBLY

QW70-05-3400

Cable reel shall be equipped with a captive roller assembly mounted directly on reel frame. It shall be supplied by Hannay and have a 4-way roller assembly with stainless steel rollers mounted in a stamped steel housing.

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CABLE STOP

QW70-05-5100

A molded plastic spherical type stop shall be provided near the end of the cable. It shall prevent damage to the electrical plug or connection when the reel is rewound. Stop shall be drilled for the correct cable size. It shall be a two piece design that clamps over the cable by tightening two bolts. Bolts shall be recessed into the ball to keep them from damaging the roller assembly when it is fully retracted.

TWIST-LOCK FEMALE PLUGS ON CORD REEL CABLE

QW70-05-5110

Two (2) Hubbell model HBL2413SW 120V/20A heavy duty twist-lock female plugs with watertight safety-shroud and Insulgrip® connector body shall be provided. The plugs shall be installed on the working end of the cord reel cables.

ELECTRICAL JUNCTION BOXES

QW70-05-5550

Two (2) Akron Brass 4-receptacle junction boxes shall be provided for distribution of electrical power on the fire ground. Each box shall be constructed of aluminum and shall be completely powder coated gray with gray hinged protective receptacle covers and the full length carry handle. Internally lighted faceplates shall provide sufficient light to make connections and alert the crew that the box is in "power-on" status. Each junction box shall have dimensions of 9.25" long x 5.5" wide x 8.5" high. Each box shall be equipped with a 12-inch pigtail with a wire mesh cord grip and a NEMA L14-20P watertight connection.

EXCEPTION

~~For each junction box, a total of four (4) single receptacles shall be provided; two (2) NEMA L5-15R twist-lock and two (2) duplex NEMA 5-20R straight blade. Each receptacle shall be rated for a minimum of 15 amps at 125 Volts. Each junction box shall be wired for 2 separate circuits with a common neutral.~~

A mounting box, with brushed stainless finish, shall be provided for each junction box.

The junction box mounting locations and receptacle arrangement shall be determined at the pre-construction conference.

CAB 12V FRONT BROW MOUNT LIGHT(S)

QW71-0V-A71B

One (1) 72 inch LED HIVIZ, FIRE TECH model FT-B-72, or equivalent, shall be installed on the cab front brow below the light bar.

The mount shall be on the center of the cab front brow. Light shall be switched at the cab dash.

CAB MOUNTED 12V EXTENSION LIGHTS

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QW71-8W-AP2B

There shall be two (2) Whelen model PFP2 12V LED ~~bottom raise, side mount~~, flood lights provided on the apparatus located one (1) each side on the back of the cab wall.

~~These lights will be mounted on telescoping poles. In the stowed position, the lights should be just below the top of the cab so as not to interfere with the operating envelope of the aerial device.~~

Each light shall be controlled by switches located at the pre-construction conference.

EXTENSION-Non
telescopic

12V SURFACE MOUNT LIGHT(S)

QW71-4F-W70C
QW71-GF-W70O

Four (4) Fire Research Spectra 900 LED Scene Light model SPA900-Q70 surface mount light(s) shall be installed with two (2) on the cab sides and two (2) on the body sides. Each light shall be mounted with four (4) screws to a flat surface.

The light head shall have twenty-four (24) ultra-bright white LEDs. It shall operate at 12 volts DC, draw 13.8/6.9 amps, and generate 7,000 lumens of light.

QW71-5Z-0010

The bezel shall be chrome. The cab surface mounted lights shall be located between the front cab door and the crew cab side window. The body surface mounted lights shall be located between the leading edge of the body and the first tire of the rear tandem axle. They shall be switched at the cab dash. The lights shall not activate when a cab door on that side opens.

QW71-Y0-0010

BODY 120V PEDESTAL MOUNT LIGHTS

EXCEPTION:PFP2APDB

QW71-QW-BP2B

Two (2) Whelen PFP2 ~~AC~~ Pioneer Plus top mount fixed pedestal light(s) shall be installed on the body roof. The pedestal shall allow the light head to rotate and have a self-adjusting friction brake to prevent arbitrary rotation. Wiring shall extend from the pedestal bottom.

The light head shall operate at 120 volts AC, draw 1.2 amps, and generate 15,000 lumens of light. The light head angle of elevation shall be adjustable at a pivot in the mounting arm and the position locked with a round knurled locking knob. The light head and mounting arm shall be powder coated white.

The pedestal lights shall be located on the body on top of the rear most high side body compartment, one (1) each side in rear outboard corners

QW71-QZ-0010

These lights shall be switched with circuit breakers in the generator panel box.

QW71-Y0-0105

GROUND LADDERS

QW90-00-014A

Ladders shall be provided in full compliance with NFPA 1901 requirements for aerial trucks. Ladders shall be individually mounted under the open equipment area inside of the torque box and properly labeled. Ladders shall be provided by Duo Safety as follows:

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1 -35' extension (3 section)

~~1 -40' extension (3 section)~~

← EXCEPTION: 35-2
section

1-28' extension

1-16' roof

1-20' Roof

1-12' fresno extension with safety shoes

1-10' folding attic

~~1-10' double end roof ladder 775-DR~~

← EXCEPTION: Will
not fit

4-pike pole tubes for 2-8' and 2-12' pike poles

LADDER BAYS

QW90-01-3550

Two (2) additional ladders bays shall be provided, one on each side of the torque box. The bay on the right shall be capable of holding up to a 20 foot ladder, the bay on the left shall be capable of holding up to a 16 foot ladder. Ladders stored in the side ladder bays shall be accessed through the main ladder compartment doors.

LADDER COMPARTMENT DOORS

QW90-01-9700

Smooth aluminum double doors shall be provided at the rear of the ground ladder compartment. The doors shall be of double panel construction and shall be held open with a door holder and shut with a “D” ring with 2-point rod locks. The primary door shall lap the secondary door and the compartment lights shall be activated when the primary door opens. The door switch shall be integrated with the door ajar hazard warning system.

LADDER BAY LIGHTS

QW90-01-9930

The ladder bay opening shall be illuminated by two (2) LED lights from Triton, model TLPC. Each weatherproof light shall have 15 LED bulbs and a lens that measures 1.125” in diameter. The lights shall be activated by opening the ladder bay doors. The door switch shall be integrated into the door ajar hazard warning system.

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PIKE POLES

QW90-04-4600
QW90-05-4800

Two (2) Pike Pole - 8', Fire Hooks brand with Fiberglass I beam handles.

Two (2) Pike Pole - 12', Fire Hooks brand with Fiberglass I beam Handles

← EXCEPTION: I
Beam

PVC PIKE POLE MOUNT(S)

QW90-05-6250

Four (4) PVC tube(s) shall be mounted to facilitate storage of pike poles. The mounting tube(s) shall be located: Four (4) mounted within the ground ladder bay.

LITTLE GIANT LADDER AND STORAGE COMPARTMENT

QW90-00-94C6

A Little Giant Model 17 ladder shall be provided. It shall be installed in an aluminum tread plate storage compartment that is forward of the upper transverse compartments on the body. Also within this compartment shall be room to store a backboard. Ladder and backboard shall be removable from the right side of the apparatus. Compartment shall have a horizontally hinged lift up door with a mechanism to hold the door in the open position.

QW90-00-9915

The compartment's location shall not interfere with the range of motion of the aerial device.

← EXCEPTION: Dependent upon placement
and size of backboard

PIKE MOUNTING ON FORWARD BODY

QW90-05-625X

There shall be two (2) pike pole mounts provided on top of the forward body module beneath the turntable. They shall hold (2) FHU RH-6 roof hooks. The mounts shall be designed to ensure the pikes can be removed when there are obstructions on either side of the apparatus.

ZICO FOLDING ALUMINUM WHEEL CHOCKS

QW90-21-0400

Four (4) Zico folding aluminum wheel chocks Model SAC-44-E shall be furnished and shipped loose by the apparatus manufacturer. Four (4) SQCH-44-H holders shall be installed by the manufacturer, one in front of and one behind the rear wheel(s), on both sides of the apparatus.

PAINT PROCESSES

QW91-00-1000

The following processes shall be employed in the finishing of the apparatus:

Manual Surface preparation – All metal surfaces on all custom body and cabs shall be thoroughly cleaned and prepared for paint. Surfaces that shall not be painted include all chrome plated, polished stainless steel and bright aluminum tread plate. As required, weld seams and other areas shall be caulked to prevent

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water leaks or for appearance reasons. Each imperfection on the exterior metal surface shall be removed or filled and then sanded for a smooth flat appearance.

Chemical Cleaning and Treatment – All painted surfaces shall be washed with a chemical degreaser, cleaner and surface conditioner to allow for proper adherence of primer coat. Then they shall be washed with a neutralizer product. All products used are approved by paint supplier and applied under strict process control to meet performance requirements on corrosion prevention and chip resistance.

Primer/ Surface Coating for Top Coat application – a minimum of 2 coats of Epoxy based primer shall be applied to surfaces inside and outside of cabs and bodies and all other parts of apparatus that shall receive a Top color coat to achieve required corrosion protection. After that a minimum of 2 coats of sealer shall be applied over the primer surface. The overall thickness of the primer/sealer coat shall be between 3 to 8 mils wet. Once dried and cured all surfaces that shall receive a top coat shall be hand sanded to achieve a flat and smooth surface to meet gloss and other paint quality standards. All products used shall be approved by paint supplier and applied under strict process control to meet performance and appearance requirements. The underside of the cab and body shall be finished with one coat of epoxy primer specifically designed for this application to prevent corrosion and provide chip resistance to typical paved road conditions.

Top Coat Application – Each Top Coat final color on the apparatus is applied using a two stage paint process. The unit shall be thoroughly hand cleaned to eliminate dust residues and to detect any imperfection in the surfaces to be painted. A fast drying 3.5 VOC polyurethane basecoat color shall be applied using a cross coat application technique. Additional coats may be applied as required until the coat thickness reaches 2.0 to 6.0 mils wet and a full hide appearance. If a second color is required, proper masking shall be applied to the unit and the basecoat application process shall be repeated for the second color. A slow drying low VOC High Build clear coat shall be applied using a cross coat application technique until a minimum of 5.0 mils wet is achieved. The unit is then properly heated to assure flash and cure of the paint before leaving the paint booth. All products used are to be approved by paint supplier and applied under strict process control to meet performance and appearance requirements.

Each batch of color topcoat shall be tested for precise color match following paint supplier color matching process. A visual color match shall be checked prior to paint using customer approved paint chips.

The cab and body shall be primed and finish painted prior to installation on the chassis to ensure paint coverage in all areas including the difficult to reach places. The exterior and interior of the cab shall be finish painted before the doors are installed or any assembly is started to ensure a finish painted surface beneath all trim items.

Primer/ Surface Coating for Single Coat application – a minimum of 2 coats of Epoxy based primer shall be applied to all surfaces of the apparatus that shall receive a single color coat to achieve required corrosion protection. This shall be a wet coat process and it shall achieve a 3.0 to 8.0 mills wet thickness and complete coverage of all bare metal. All products used shall be approved by paint supplier and applied under strict process control to meet performance and appearance requirements.

Single Coat Application – A minimum of 2 coats of direct gloss paint shall be applied over all primed surface to achieve corrosion protection. This application shall be used for Gloss Black, Job Color and

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Color finishes in parts of the apparatus such as frame rails, outriggers, ladders and other aerial devices, suspension and other chassis parts, etc. as defined in the sales order.

Zolatone Coat Application – All areas to receive a Zolatone coat shall be primed following the primer/surface coating for top coat application. A high pressure coat of Zolatone paint shall be applied in a cross pattern technique to achieve smooth finished surface. A second low pressure coat of Zolatone paint shall be applied in a single pattern to achieve a textured appearance.

Zolatone Clear Coat Application – Starting with a completed and dry Zolatone coat application 2 to 3 coats of Zolatone clear coat shall be applied until a thickness of 5.0 mills wet is achieved.

PAINTERS

All painters shall be paint supplier certified. They shall be re-certified periodically in order to keep up to current standards and procedures required by the coatings manufacturer. This certification shall be performed independently by the paint supplier.

FACILITY

The finishing facility shall be certified independently by the paint supplier by meeting or exceeding its extensive and stringent requirements. The paint facility shall be audited quarterly by the paint supplier to ensure proper equipment, procedures and safety regulations are being used and adhered to in addition to the controls implemented to assure paint quality requirements are met in every job.

FRAME & UNDERCARRIAGE FINISH

QW91-00-4400

The following items shall have an additional coat of gloss black paint applied over the primed surface as supplied by the component manufacturer. Single coat application process shall be used to apply Gloss Black direct gloss paint on the parts identified below:

- Chassis frame rails, cross members.
- Front bumper extension.
- Front & rear axles and suspension.
- Battery boxes.
- Fuel tank and fill tube.
- Air reservoir tanks.
- Forward body module mounting brackets.
- Body mounting brackets.
- Steering gear box and steering link arm.
- Drive shafts.

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ADDITIONAL FRAME RAIL PAINT

QW91-00-4490

Both the main frame rails and the innerliner frame rails to be painted with the additional coat of gloss black paint prior to being assembled together.

PAINT INSIDE OF CAB

QW91-00-5000

The inside of the cab shall be provided with gray Zolatone paint following the Zolatone Coat application process.

The following components shall be painted:

- Exposed interior surfaces of the cab structure
- Exposed interior surfaces of the driver/officer/crew doors
- All interior "Metal" access/wire covers of the cab
- Head bumper brackets
- Miscellaneous brackets, if present: camera mounts, non-recessed radios, charger covers.

PAINT INSIDE OF CAB

QW91-00-5400

The inside of the full tilt cab shall be clear coated following the Zolatone Clear Coat application process in the same components that received a Zolatone application.

SINGLE COLOR CAB PAINT

QW91-00-59C0

The cab shall be painted one color. The paint shall follow the Top Coat application process for a single color.

Cab exterior paint number shall be determined at the prebuild conference.

A decorative molding shall be provided around the cab. The decorative molding shall be horizontal across the front of the cab above the wipers and taper down with a radius even with the outside corners of the grille.

QW91-00-A110

BODY PAINT

QW91-02-1000

The body of the apparatus shall be painted to match the primary cab color. The paint shall follow the Top Coat application process for a single color.

Body exterior paint number shall be determined at the prebuild conference.

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FORWARD BODY COMPARTMENT PAINT

QW91-02-3200

The forward body compartment exterior shall be painted job color following the Top Coat application process for a single color. The interior of the compartments shall be painted gray Zolatone following the Zolatone Coat application process.

STABILIZER & SUPERSTRUCTURE PAINT

QW91-02-5110

All six (6) stabilizers and the superstructure on the apparatus shall be painted job color. Single Coat application process shall be used to apply the color selected in this order using direct gloss paint on identified parts.

TURNTABLE & BOOM PAINT

QW91-02-6200

The turntable and the boom shall be painted gray. Single Coat application process shall be used to apply the color selected using direct gloss paint.

Paint # shall be determined at the pre-construction conference.

BOOM SUPPORT PAINT

QW91-02-6210

The boom support shall be painted job color. Single Coat application process shall be used to apply the color selected using direct gloss paint.

TORQUE BOX PAINT

QW91-02-6220

The interior and exterior of the torque box shall be painted matte black following the Primer/Surface Coating Process for Single Coat Application.

HYDRAULIC TANK PAINT

QW91-02-6260

The hydraulic tank shall be painted gloss black. Single Coat application process shall be used to apply the color selected in this order using direct gloss paint.

UNDERCOATING

QW91-02-9030

The apparatus shall be properly undercoated with PPG Corashield.

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The underside of the vehicle, including body and cab, shall receive a spray-on application of black Corashield which is a heavy duty, pliable, waterborne, zero-VOC product with excellent resistance to chipping, cracking and corrosion. It shall also have excellent soundproofing qualities. The material shall be sag resistant and applied to a mil thickness of 5 to 10 with a cure time of 72 hours.

The material shall be applied in the following areas:

- Body and cab, fender wheel well areas
- Underside of body compartments and cab floor structure
- Underside of body sub-frame
- Exterior of body compartment rear walls

ACORN NUTS

Acorn nuts shall be installed on all exposed screws and bolts in areas where personal injury may result and/or damage to equipment may occur. One bag of chrome, stainless steel, or cadmium plated screws, nuts, bolts and washers, as used in the construction of the unit

QW91-05-0210
QW91-05-0220

REFLECTIVE STRIPING

Three (3) reflective stripes shall be provided across the front of the vehicle and along the sides of the chassis cab and apparatus body. The reflective band shall consist of a 1.00" blue stripe at the top with a 1.00" gap then a 6.00" white stripe with a 1.00" gap and a 1.00" blue stripe on the bottom.

QW91-03-0600
QW91-03-3000

The reflective band provided on the cab face shall be at the headlight level.

An offset in the reflective stripe shall be located each side of the vehicle at the rear. The stripe shall be angled upward at approximately a 45 degree angle.

Exact location, color, and presentation on the apparatus where the striping shall be installed shall be determined at the pre-construction conference.

FRONT BUMPER CHEVRON STRIPING

QW91-03-3820

The front bumper shall be covered with 6" wide 3M™ Diamond Grade™ Reflective striping in an alternating chevron pattern with the stripes running at a 45 degree downward angle from the top center of the bumper.

Striping color and design shall be determined at the pre-construction conference.

REAR CHEVRON STRIPING

QW91-03-472D

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The entire rear face of the body, including the rear compartment hinged door, shall be covered with 6" wide 3M™ Diamond™ Grade reflective striping in an alternating chevron pattern with the stripes running at a 45 degree downward angle from the top center of the vehicle.

The chevron striping shall be alternating Scotchlite™ Red 983-72NL and Scotchlite™ Fluorescent Yellow-Green 983-23.

LETTERING

QW91-04-0060
QW91-04-9502

Forty-one (41) to sixty (60) genuine gold leaf letters, 3.00" high, with outlining and shading shall be provided. The lettering shall be totally encapsulated between two (2) layers of clear vinyl.

LETTERING ADDITIONAL

QW91-04-0180

One (1) 8.00" white reflective letters/numbers with black shading shall be installed on the passenger cab front.

Four (4) 16.00" white reflective letters/numbers with black shading shall be installed on the rear side compartment doors and rear ground ladder compartment doors and roof of the cab.

APPARATUS LOGOS AND NAME PLAQUES

QW91-04-9900

Logos and name plaques shall be placed on the apparatus as identified at the pre-construction conference.

WARRANTIES

Each piece of new fire or rescue apparatus shall be warranted to be free from defects in materials or workmanship under normal use and service. Each manufacturer shall supply, as a part of their bid package, a copy of the warranty or warranties that they propose to provide.

The bidder shall provide all optional warranty packages, such as extended warranties, etc., bid to include the cost of said packages.

All other warranties, as outlined in these specifications shall be provided in writing as a part of the bid package.

Failure to provide the warranties as outlined throughout these specifications may be cause for rejection of the bid package.

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MANUFACTURER'S LIMITED WARRANTY

QW91-50-012N

Each apparatus shall be provided with a minimum two (2) year material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package.

QW91-50-0510

CHASSIS FRAME RAIL & CROSS MEMBER STRUCTURAL LIMITED LIFETIME WARRANTY

A limited lifetime frame rail and cross members structural warranty shall be provided. The warranty shall cover the chassis frame as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package.

FRONT AXLE WARRANTY

QW91-75-0012

A Dana Corporation five (5) year parts and labor warranty shall be provided on the front axle.

FRONT DISK BRAKES WARRANTY

QW91-75-0020

A three (3) year Meritor Corporation parts and labor warranty on the EX225H disc brakes shall be provided.

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REAR AXLE WARRANTY

QW91-75-0030

A Dana Corporation five (5) year parts and labor warranty shall be provided on the rear axle.

ABS SYSTEM WARRANTY

QW91-75-003A

A three (3) year or 300,000 miles parts and labor warranty shall be provided by Meritor WABCO Vehicle Control Systems for the Anti-Lock Braking System (ABS).

ENGINE WARRANTY

QW91-75-004E

The engine shall come with a 5 year or 100,000 mile warranty provided by the Cummins Corporation.

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TRANSMISSION WARRANTY

QW91-75-0065

The transmission shall have a 5 year/unlimited mileage warranty covering 100 percent parts and labor.

CAB FIFTEEN YEAR STRUCTURAL LIMITED WARRANTY

QW91-50-0205

The new cab shall be provided with a fifteen (15) year material and workmanship limited warranty. The warranty shall cover such portions of the cab built by the manufacturer as being free from structural failures caused by defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package.

STAINLESS STEEL BODY FIFTEEN YEAR STRUCTURAL LIMITED WARRANTY

QW91-50-0305

Each new piece of apparatus shall be provided with a fifteen (15) year material and workmanship limited structural warranty on the apparatus body. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package.

AERIAL DEVICE TWENTY YEAR STRUCTURAL LIMITED WARRANTY

QW91-50-0400

The aerial device shall be provided with a twenty (20) year material and workmanship limited warranty. The warranty shall cover such portions of the apparatus built by the manufacturer as being free from defects in material and workmanship that would arise under normal use and service. This warranty shall include as a minimum the torque box, turntable, aerial sections and other structural components.

A copy of the warranty certificate shall be submitted with the bid package.

FIRECOM INTERCOM WARRANTY

The Firecom intercom system shall have a minimum 2-year warranty on the intercom control head and all other system components. The warranty shall cover material and workmanship defects in the products.

HARRISON HYDRAULIC GENERATOR WARRANTY

QW91-75-3115

The Harrison hydraulic generator shall have a 6 year / 1000 hour limited warranty from the manufacturer.

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SIX (6) YEAR NON-PRO-RATED PAINT AND CORROSION

QW91-50-0600

Each new piece of apparatus shall be provided with a six (6) year non-pro-rated paint and corrosion limited warranty on the apparatus cab and body. The warranty shall cover painted exterior surfaces of the body to be free from blistering, peeling, corrosion, or any other adhesion defect caused by defective manufacturing methods or paint material selection that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package.

THREE (3) YEAR GOLD LEAF WARRANTY

Included

The gold leaf lamination shall be provided with a three (3) year material and workmanship limited warranty. The warranty shall cover the gold leaf lamination as being free from defects in material and workmanship that would arise under normal use and service.

A copy of the warranty certificate shall be submitted with the bid package.

PRICING

Price per truck \$ _____

Pricing for 2 trucks \$ _____

**RISK MANAGEMENT PROVISIONS
INSURANCE AND INDEMNIFICATION
BID 5-2019 MID MOUNT TOWER APPARATUS**

INDEMNIFICATION AND HOLD HARMLESS PROVISION

- (1) It is understood and agreed by the parties that Contractor hereby assumes the entire responsibility and liability for any and all damages to persons or property caused by or resulting from or arising out of any act or omission on the part of Contractor or its employees, agents, servants, owners, principals, licensees, assigns or subcontractors of any tier (hereinafter "CONTRACTOR") under or in connection with this agreement and/or the provision of goods or services and the performance or failure to perform any work required thereby.
- (2) CONTRACTOR shall indemnify, save, hold harmless and defend the Lexington-Fayette Urban County Government and its elected and appointed officials, employees, agents, volunteers, and successors in interest (hereinafter "LFUCG") from and against all liability, damages, and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees that are in any way incidental to or connected with, or that arise or are alleged to have arisen, directly or indirectly, from or by CONTRACTOR's performance or breach of the agreement and/or the provision of goods or services provided that: (a) it is attributable to personal injury, bodily injury, sickness, or death, or to injury to or destruction of property (including the loss of use resulting therefrom), or to or from the negligent acts, errors or omissions or willful misconduct of the CONTRACTOR; and (b) not caused solely by the active negligence or willful misconduct of LFUCG.
- (3) Notwithstanding, the foregoing, with respect to any professional services performed by CONTRACTOR hereunder (and to the fullest extent permitted by law), CONTRACTOR shall indemnify, save, hold harmless and defend LFUCG from and against any and all liability, damages and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees, for any damage due to death or injury to any person or injury to any property (including the loss of use resulting therefrom) to the extent arising out of, pertaining to or relating to the negligence, recklessness or willful misconduct of CONTRACTOR in the performance of this agreement.
- (4) In the event LFUCG is alleged to be liable based upon the above, CONTRACTOR shall defend such allegations and shall bear all costs, fees and expenses of such defense, including but not limited to, all reasonable attorneys' fees and expenses, court costs, and expert witness fees and expenses, using attorneys approved in writing by LFUCG, which approval shall not be unreasonably withheld.
- (5) These provisions shall in no way be limited by any financial responsibility or insurance requirements, and shall survive the termination of this agreement.
- (6) LFUCG is a political subdivision of the Commonwealth of Kentucky. CONTRACTOR acknowledges and agrees that LFUCG is unable to provide indemnity or otherwise save, hold harmless, or defend the CONTRACTOR in any manner.

FINANCIAL RESPONSIBILITY

CONTRACTOR understands and agrees that it shall, prior to final acceptance of its proposal and the commencement of any work or services, demonstrate the ability to assure compliance with the above Indemnity provisions and these other risk management provisions.

INSURANCE REQUIREMENTS

YOUR ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW, AND YOU MAY NEED TO CONFER WITH YOUR INSURANCE AGENTS, BROKERS, OR CARRIERS TO DETERMINE IN ADVANCE OF SUBMISSION OF A RESPONSE THE AVAILABILITY OF THE INSURANCE COVERAGES AND ENDORSEMENTS REQUIRED HEREIN. IF YOU FAIL TO COMPLY WITH THE INSURANCE REQUIREMENTS BELOW, YOU MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Required Insurance Coverage

CONTRACTOR shall procure and maintain for the duration of this contract the following or equivalent insurance policies at no less than the limits shown below and cause its subcontractors to maintain similar insurance with limits acceptable to LFUCG in order to protect LFUCG against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work or services hereunder by CONTRACTOR. The cost of such insurance shall be included in any bid:

<u>Coverage</u>	<u>Limits</u>
General Liability (Insurance Services Office Form CG 00 01)	\$1 million per occurrence, \$2 million aggregate or \$2 million combined single limit
Commercial Automobile Liability (Insurance Services Office Form CA 0001)	combined single, \$1 million per occurrence
Worker's Compensation	Statutory
Employer's Liability	\$100,000.00
Excess/Umbrella Liability	\$5 million per occurrence
Garagekeepers Liability	\$1 million

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky. LFUCG shall be named as an additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by LFUCG.
- c. The General Liability Policy shall include a Products and Completed Operations endorsement or Premises and Operations Liability endorsement unless it is deemed not to apply by LFUCG.

- d. The General Liability Policy shall include an Explosion-Collapse Underground (XCU) endorsement unless it is deemed not to apply by LFUCG.
- e. The General Liability Policy shall have a Professional Liability endorsement (including Errors and Omissions) for any services performed pursuant to the contract, and/or a separate Professional Liability Policy shall be obtained unless it is deemed not to apply by LFUCG.
- f. The Professional Liability policy shall be maintained for a minimum of three years beyond the completion date of the project, to the extent commercially available. If not commercially available, CONTRACTOR shall notify LFUCG and obtain similar insurance that is commercially available and acceptable to LFUCG.
- g. LFUCG shall be provided at least 30 days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.
- h. Said coverage shall be written by insurers acceptable to LFUCG and shall be in a form acceptable to LFUCG. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.

Renewals

After insurance has been approved by LFUCG, evidence of renewal of an expiring policy must be submitted to LFUCG, and may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence of coverage must be submitted in accordance with these Insurance Requirements.

Deductibles and Self-Insured Programs

IF YOU INTEND TO SUBMIT A SELF-INSURANCE PLAN IT MUST BE FORWARDED TO LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DIVISION OF RISK MANAGEMENT, 200 EAST MAIN STREET, LEXINGTON, KENTUCKY 40507 NO LATER THAN A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO THE RESPONSE DATE. Self-insurance programs, deductibles, and self-insured retentions in insurance policies are subject to separate approval by Lexington-Fayette Urban County Government's Division of Risk Management, upon review of evidence of CONTRACTOR's financial capacity to respond to claims. Any such programs or retentions must provide LFUCG with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance coverage. If CONTRACTOR satisfies any portion of the insurance requirements through deductibles, self-insurance programs, or self-insured retentions, CONTRACTOR agrees to provide Lexington-Fayette Urban County Government, Division of Risk Management, the following data prior to the final acceptance of bid and the commencement of any work:

- a. Latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statements.
- c. Actuarial funding reports or retained losses.
- d. Risk Management Manual or a description of the self-insurance and risk management program.

- e. A claim loss run summary for the previous five (5) years.
- f. Self-Insured Associations will be considered.

Safety and Loss Control

CONTRACTOR shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

Verification of Coverage

CONTRACTOR agrees to furnish LFUCG with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf prior to final award, and if requested, shall provide LFUCG copies of all insurance policies, including all endorsements.

Right to Review, Audit and Inspect

Consulant understands and agrees that LFUCG may review, audit and inspect any and all of its records and operations to insure compliance with these Insurance Requirements.

DEFAULT

CONTRACTOR understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default and that LFUCG may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging CONTRACTOR for any such insurance premiums purchased, or suspending or terminating the work.

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